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CALIFORNIA CULTIVATOR

THE LIVESTOCK and DAIRY JOURNAL Combined with CALIFORNIA CULTIVATOR

LOS ANGELES An Illustrated Weekly for the Rural Home and Ranch SAN FRANCISCO

Vol. LIII July 5, 1919 No. 1

The Famous Hooker Oak at Chico

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

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Saturday, July 5, 1919

OUR ADVERTISERS RELIABLE
We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The largest live oak tree in the world is given place on the cover of this issue. From items furnished by Commissioner Earle Mills of Butte County we are informed that it is named after Sir Joseph Hooker, an English naturalist. Its circumference at the ground is 25.70 feet; circumference eight feet above ground, 28.40; spread of branches, north and south, 200 feet; circumference of spread, 446 feet. It has been figured out that, allowing two square feet for each, 7885 persons could stand under its branches. California is a state of big trees.

FEDERAL AID FOR ROADS

Besides community, county and state road work, the federal government is encouraging road building as never before. In addition to many added appropriations to the original federal road act, new appropriations are to be made which will involve the improvement of over 10,500 miles of new roads at an estimated cost to the federal government of $92,000,000,000. The amount of federal funds available on March 1 was $72,900,000. This must be matched by the various states with an equal amount. Some of these roads will be built in national forests, but others are entirely outside of any reserve. These road funds will be available on July 1, and the aggregate sum, including state funds to be used on the dollar for dollar basis, is $198,000,000.

STATE LOSES GOOD MAN

F. B. Davison, for ten years in charge of the permanent state exposition at Exposition Park, Los Angeles, has terminated his connection with that unique exhibit. We believe there is no complete exhibit of the productive resources of any state shown in more artistic setting. Nearly every county in California is there represented, and if the county fails to put in the exhibit in an attractive manner it has been made so by trained men. Mr. Davison laid the foundation for this exposition and has continued with it until this time. He now retires to conduct his own affairs.

MAINTAIN THE QUARANTINE

The importers are endeavoring to move heaven and earth in order to secure repeal of present national quarantine regulations. Formerly the importers were strengthened by many of the larger nurserymen and plant dealers of the Eastern states. From reports now received it appears that many of the dealers and nurserymen are changing their attitude, for they are already seeing the benefits from the new regulations.

The American Plant Propagators' Association, with headquarters at Chicago, Illinois, is making a valiant fight for the retention of the quarantine. That association quotes from resolutions passed by the recent California Nurserymen's Convention held in Riverside. We are glad the nursery association of this state is right and is considered a power in a great nursery industry. Strength to the arm of Marlatt.

FLORIDA'S FIGHT

The California State Fruit Growers in convention at Riverside passed resolutions commending the wonderful fight made by quarantine officials of Florida and of the department of agriculture against the citrus canker, characterized by one of the speakers at the convention as the most malignant of all plant diseases of all times. The canker for a time threatened to wipe out the citrus industry of that state. The dread disease took orchard after orchard and many of the nurseries of the state, and it was either fight or quit. Being Americans the Floridans fought. They appealed to the department of agriculture for help. There is now no citrus canker in the state of Florida, but presumably it is not entirely eradicated and other cases may appear, but watch is kept to secure instant stamping out of the first appearance. Strength to the arm of the Florida fighters.

PIONEERING

All honor to the pioneers, to those who have taken up the battle of making a habitable land out of desert and foothill. They have been confronted by obstacles and by hardships. Nor is the work of the pioneer ended, for even today there are many in California confronted by problems as serious as the '49ers. A subscriber in San Diego County, Wm. H. Briggs, writes:

"It is a constant battle with the ground squirrels and birds to prevent them from destroying and packing away our nuts from the trees, and we are feeding their burrows and the crotches of the trees with poisoned barley furnished us by the farm bureau. One of our neighbors recently dug out a ground squirrel from under his barn and found a nest of 13 young ones, with a large quantity of chicken feed that the mother and father squirrel had stored up."

That was an unlucky 13 for that particular family of squirrels and decidedly lucky for the farmer that he terminated their existence before they had destroyed acres of valuable products. If that letter is an indication of one of the small problems which Californians are solving, it is also an indication of some of the methods which are proving successful.

WILL DEMONSTRATE

At the last meeting of The Tractor and Implement Dealers' Association of Southern California, after quite a lengthy debate on whether to hold a still or an active demonstration, it was unanimously voted to hold an active demonstration of tractors and implements, eliminating that part which has been termed the public plowing, which has generally developed into a speed contest which did not show the work as desired by the farmer. Under the plan adopted each exhibitor will be allotted space for private demonstrations to comply with desires of the prospective purchasers as to character of implements and depth of plowing.

After the voting, the members who favored a still demonstration came to the front and promised their full support, and the meeting as a whole was a complete success. The association, having secured the services of R. M. O'Neill, who so successfully handled the former demonstrations, is assured of a big success which will give the farmers of the state a chance to see real tractor action.

IRRIGATE

The more optimistic say that this year's production of California's walnut orchards will aggregate 25,000 tons, by far the largest crop ever. Prices will probably be the highest ever. The quality—that depends. It depends upon the determination of the grower. Every step should be taken which leads toward better conditions of soil, greater freedom from insect or other pests, or, as the scientists say, the optimum of condition to produce largest and finest of nuts.

Experts are making careful determinations as to what these steps should be, and the walnut grower who will open his eyes has the information at hand. But just a word from the Cultivator.

This last season the rains were so wonderfully well distributed that the greatest benefit was secured from them, but it still is true that the total precipitation was much under normal. The water was not actually placed in the soil, which is needed to supply plant growth. Hence, Irrigate. Irrigate deeply. Cultivate. Cultivate, not deeply, but keep the surface in such a condition of thorough tilth that the dust mulch will prevent the loss of moisture.

GOVERNMENT GUARANTEE

The farm center of the Livingston district of Merced County is discussing questions of farm crop costs and farm crop compensation, and has come to the conclusion that farmers are the only class of people, the selling price of whose product bears no relation to the cost of production. The members have decided that because of hazards incident to farming American native stock is being driven from the farm and that the drudgery is being performed by Asiatic or other labor, therefore,

"Be it resolved, that an authoritative and systematic determination of the cost of farm products be undertaken by state or national authority and that the selling price of such products be not less than cost plus ten per cent."

Unfortunately, the farming class is not the only one which has failures in its ranks. General business ventures yield only about three or four per cent of complete successes, according to statistics issued by reliable authorities. If such is the case and farmers are granted a ten per cent guarantee, we feel there will be terrific pressure for passing the ten per cent guarantee all along the line. The farmer asks and must have a square deal; he will not accept charity.

MORE GOOD ROADS

The bonds carried. Some time before Tuesday's election Governor Stephens remarked in an address in which he favored voting the $40,000,000 road bonds:

"Good roads have become a determining factor for the homeseeker. The building of good roads into our mountain counties will add an impetus to the development of those sections in fruit growing and other agricultural pursuits. We have a vast area of mountainous country in which farming and fruit growing are just beginning and highways that will solve the problem of transportation will unlock a great wealth for our state."

The biggest word in this address is that one, "unlock". We believe the roads built with the bonds voted on Tuesday will open the way for many a farmer to produce and to market where before he has been unable to get his produce into the market in condition and at a cost which left him any profit. California already has the best roads in the country and more of them than any other state unless it be a very few near the Atlantic. When the present $40,000,000 is spent under the efficient direction of the state highway commission we believe this state will be the peer of any in the Union.

TEST THE SEED

Why should an orchardist who proposed to plant melilotus seed for a cover crop to be plowed under next spring pay nine cents per pound when he can buy other seed identically the same, so far as his eyes can determine, for seven cents? Why should one pay more for one bushel of seed wheat, barley, corn or other seed than for another identically the same in appearance.

Easily answered by many farmers who simply say: "He shouldn't."

But there is another side to the question, which might change the answer. That side has to do with seed testing. Seed testing has to do with knowledge of the viability of the seed. Our state university stands ready to test seed and, we believe, without cost to the grower. The state seed bill has not become a law. Another two years' wait is necessary, but many of our best seedsmen have determined to sell seed with "certificate of quality," or guarantee not only as to purity of the seed but as to its germinating power. The seed buyer who is wise may well buy his seed subject to state university test. It costs but little for postage and minus but little delay, and by anticipating his need by this few days he is able to save dollars and perhaps save a year in time by securing satisfactory crop return.

Liquid Hydrocyanic Gas for Fumigation

SOMETHING over 25 years ago California orchardists gave to the world a method for destruction of injurious insects, which has saved millions of dollars and benefited orchardists in all fruit growing sections. The greatest benefit was to the citrus producer because the citrus trees, always in foliage, offered greatest obstacles to thorough work in spraying and offered most successful opportunity to secure insect control through fumigation.

In the earlier days of the industry the old time hoop tent gave most excellent results with small trees. A 30 or 40 foot seedling, however, made great difficulty in handling the tent, which finally brought about the construction of an enormous derrick which was mounted on trucks and hauled about through the orchard, tents being lifted from tree to tree. It was but a short time, however, before an improved pole hoist was provided, which made tent handling much easier.

The method of gas generation, however, changed but little from the first until perhaps a half dozen years ago. That method consisted of mixing water and sulphuric acid in an earthen vessel, and into this was dropped the lumps of cyanide of potassium, or later, of sodium. Then came the egg cyanide, which was simply ready weighed and standardized chemicals.

These first fumigations often resulted in serious injury to the tree, this because of chemical impurities. Chemists soon corrected this, however. Some five or six years ago the fumigation machine entered. This was simply an appliance charged with sulphuric acid in one chamber and dissolved cyanide in another. The mechanical mixing of the chemicals with hose from gas chamber to beneath the tent completed the operation.

Last year another change of method was made by many of the professional fumigators. It consisted of the use of liquid hydrocyanic acid. There was some danger connected with this form of application, but improved pumps or injectors have been devised which now makes the handling of this liquified gas comparatively safe to human life, and it is proving much more effective with scale and other insect pests.

These improvements have called for renewed investigations as to best methods of work. For years Prof. R. S. Woglum of the department of agriculture has been in California making investigations, principally as to effectiveness of various fumigation methods. Prof. H. J. Quayle of the University of California has also given much of his time to similar investigations.

To bring out the best of information Horticultural Commissioner H. J. Ryan of Los Angeles County invited commissioners from all citrus growing sections, inspectors, fumigators and orchardists to meet in Los Angeles, Thursday, June 26.

Professor Woglum explained the method of work with his chart, a reproduction of which appears on this page. As noted in the chart the unit of dosage is 18 cubic centimeters. The diagonal block of figures from upper left to lower right corner of the chart indicates the units. For instance, the first "2" in the upper left hand corner indicates that two units of dosage are necessary for a tree ten feet over and 12 feet around, while the "34" in the lower right hand corner indicates 34 units of dosage for a tree 58 feet over and 78 feet around.

F. G. Wyman of Pomona, S. A. Stowell of Charter Oak and Charles T. Paine of Redlands all spoke in commendation of the new liquid gas method of work. Two resolutions were adopted, the first calling for oversight of qualified inspector and the other asking for uniform regulations for field practice. The resolutions are:

Resolved: That this meeting of growers and others interested in the citrus industry, assembled in Los Angeles, June 26, 1919, recommends that the horticultural commissioners of the large citrus growing counties of Southern California, namely, Los Angeles, San Bernardino, Riverside and Orange, request their respective boards of supervisors to allow the appointment of night fumigation inspectors, and furthermore be it resolved that the growers of this meeting urge the said board of supervisors to allow necessary funds for such work.

Whereas, uniform field practice in fumigation of citrus orchards for scale insects is desirable and each county now requires the observance of certain regulations for field practice, which requirements however are not uniform in all counties, be it resolved that this meeting of growers and others interested in the citrus industry recommend that the county horticultural commissioners of the large citrus growing counties of Southern California, namely, Los Angeles, San Bernardino, Riverside and Orange Counties, acting as a committee with the state commissioner of horticulture or a deputy, take steps to draw up uniform regulations for field practice in fumigation, and that for the purpose of advising themselves of the practicability of requirements deemed necessary the horticultural commissioner of Los Angeles appoint two fumigators and the commissioner of each of the other three counties appoint one fumigator to act as a committee of five to furnish such advice on field practice as the horticultural commissioners may request.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ENTOMOLOGY.

DOSAGE SCHEDULE FOR CITRUS TREE FUMIGATION WITH LIQUID HYDROCYANIC ACID 95 TO 98 PER CENT PURE.

DISTANCE AROUND (IN FEET).

DISTANCE OVER (IN FEET)	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	
10	2	2	3	3	3																														10
12	3	3	3	4	4	4	4																												12
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24					6	6	6	7	7	7	7	8	8	8	8	8	9	9	9																24
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DISTANCE OVER (IN FEET)	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	
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50																				21	22	23	23	24	24	25	25	26	26	27	27	28	28	29	50
52																							24	25	25	26	26	27	27	28	28	29	30	30	52
54																								25	26	27	28	28	29	29	30	31	31	32	54
56																									27	28	28	29	30	31	31	32	33	33	56
58																									28	28	29	30	31	32	33	33	34	34	58

Unit of dosage, 18 cubic centimeters.
One pound HCN=36 unit charges.

By R. S. WOGLUM, Entomologist,
Tropical and Subtropical Fruit Insect Investigations,
BUREAU OF ENTOMOLOGY.

Plowing When Oranges are Blooming

DOES deep plowing of a citrus orchard at time trees are in full bloom, or does heavy irrigation at that period, or other drastic cultural method have anything to do with reducing the coming season's crop? These are questions frequently asked, and so far diversely answered. One grower will notice great reduction in output of rows deeply plowed, while his neighbor notices no difference whatever. The past season caught many with cover crops still standing when trees were blooming. We hope we may hear from these growers as to what was the result of the cultural methods; also what is the result of the heavy irrigation. Let us have a growers' forum.

One inquirer who came to this office for information last blooming time was J. Frank Walters, with orchard properties in Los Angeles County. We have asked him as to his observations. Mr. Walters writes:

"Owing to a considerable acreage in groves and insufficient stock to properly plow, cross-plow, disk and cross-disk a heavy melilotus cover crop within the proper plowing season throughout all the groves, it was a problem last winter whether to plow some groves earlier or considerably later than is the usual practice.

"I concluded it best to sacrifice the melilotus on a few groves and began plowing early in January, turning under a cover crop only an inch high. The plowing and cross cultivation dragged along slowly and it was June 1 before the last acre of orange groves was finally put into good summer condition. This soil cultivation, therefore, took place while the trees were practically dormant, just prior to and during blossom time and up to beginning of setting of the young fruit.

"Groves plowed in January had received a heavy application of stable manure the year previous. The trees blossomed profusely (Navels) but the fruit dropped very early, should say a month earlier than Navels in neighboring groves. At present, with the June drop having about run its course in my section, should say these groves first plowed now contain about as many (or as few) fruit as Navel groves of my neighbors. But my fruit had dropped weeks before the hot weather of early June and I would have had no crop had there been no

Continued on Page 6

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Agricultural News Notes of the Pacific Coast

Northern California

Apricot packing plants are busy in Tehama County.

Contra Costa County will vote on good roads bonds for the county on July 26.

Placer County farm bureau is making plans for its county fair to be held this fall.

C. J. Pratt of Gilroy advocates the drying of apricots without cutting, treating them like prunes.

A vigorous mosquito abatement campaign is being taken up in the Durham Colony in Butte County.

Wool growers of Sonoma County report prices being received now: 60 cents for long wool; 53 for short.

Almond growers of Sutter County have formed an association to affiliate with the California Almond Exchange.

The Sacramento County farm bureeau will make an especial study of soil improvement during the next year.

A big demand for damaged beans is reported from Salinas. During the past week sales were made of 10,000 sacks.

The cannery at Yuba City has added many improvements and this year expects to pack 160,000 cases of fruit.

Cloverdale proposes a bond issue to supply funds for the purchase of a site for the holding of the annual citrus fair.

A grain fire west of Durham last week burned over 130 acres. The fire started from the auxiliary engine of a separator.

One hundred dollars a ton for green prunes is reported offered in Sonoma County. Between $70 and $80 is being paid for pears of first quality; for seconds, $48.

The San Joaquin County Poland-China breeders have formed a county association. J. F. Lehman is president and Sherwood Beckman, secretary-treasurer.

Peach growers who made long time contracts with the canners, some of them for as low as $25 per ton, have had the price raised to $45 by the Canners' League.

Tokay grape growers in the Lodi district of San Joaquin County expect the largest and best crop on record. Irrigation is finished. The season is two weeks ahead of last year's.

Packing companies, working with the local chamber of commerce, are planning to make Oroville a year-round center for the packing of fruits and vegetables. Housing facilities for workers will be the first item to be considered.

Demonstrating his faith in the future of alfalfa, Fred W. Kiesel, the Sacramento banker who has a 600-acre dairy farm at Natomas, has completed planting 200 more acres to alfalfa on land that for the last two years has produced an average of 31½ sacks of beans to the acre.

On the Natomas district last year about 100 acres of timber were cut flush with the surface of the ground and alfalfa seeded as an experiment by the Natomas Company. It was so successful that about 1,000 acres have been planted. It is expected that the willow and cottonwood stumps will rot in about two to three years and as this land is sub-irrigated, it was not necessary to level or sub-irrigate it.

Central California

Turlock will have bumper watermelon crop.

Clovis, Fresno County, now has a farm center.

Hanford shipped out its first full car of apricots July 11.

Fresno reports last year's San Joaquin Valley cotton crop all sold.

Reports of serious losses from tomato blight come from Tulare County.

Wine grape growers at Dinuba are receiving offers of $40 per ton for their grapes.

The Kerman farm center, Fresno County, is planning for making an exhibit at the county fair.

Oakdale, Stanislaus County, is planning to hold a community fair and festival some time in September.

Oakdale, Stanislaus County, is showing its rice crop in better condition than preceding years at this time.

The Tulare County Poultry Association neted $31,489 in business during the month of May, the biggest month yet.

The supervisors of Kings County have adopted an ordinance limiting loads which trucks can carry over the improved highways.

Active buying of wine grapes last week is announced from the Fresno district at a price $10 above that received the week previous.

Dairymen of Tulare County have taken preliminary steps toward the organization of an association to work with the state dairy council in boosting milk products.

Water users near Bishop, Inyo County, are preparing to fight the Southern Sierras Power Company for possession of practically all the waters of Bishop Creek.

Secretary C. A. Murdoch of the California Associated Raisin Company estimates the state's raisin production at 200,000 tons and of best quality if present conditions prevail.

Owing to comparatively low temperature, the citricola scale has shown great increase in Tulare County's citrus orchards. A fumigation campaign will soon be in full swing.

The creamery at Merced is now equipped to manufacture whole milk products in addition to butter, and the new equipment has called for new motor trucks for gathering whole milk instead of cream.

W. J. Higdon of the Tulare Holstein Farm has just received $125.75 in prize money from the National Association of Holstein Breeders for the remarkable records made on the farm during 1918. Mr. Higdon expects to make even a greater showing this year with the official tests now going on and in which seven-day and 30-day tests have shown greater promise of world records than last year.

In the Tulare district 159 new electric pumping plants have been installed by the Tulare district office of the Mt. Whitney Power and Electric Company, representing 1600 horsepower. As many or more gasoline plants have been installed during the same period. Minimum rainfall during the past three years has lowered the water level to some extent so that many of the pump pits have had to be lowered.

Southern California

Carpinteria's apricot season is expected to open July 15.

Riverside canneries are now running full handed on apricots.

A goat show was held at Pomona, Los Angeles County, last Saturday.

The last sale of 26 cars of Lima beans was made at $9 per hundred.

Pima cotton grown in Imperial Valley was recently sold in Boston at 52 cents.

Apricot growers of Nuevo, Riverside County, expect to harvest a crop of 1000 tons.

Cooperative auctioning is being encouraged by the farm bureau of Imperial County.

The Imperial Valley now has a committee in Washington working for the all American canal.

The Pomona Valley Goat Association held its second annual goat show at Pomona on last Saturday.

The Redlands district reports heavy June drop of oranges, but no more than will properly thin the fruit.

San Diego County's cow testing association is now under way under direction of County Adviser Weinland.

Hueneme bean growers have organized for the purpose of affiliating with the cooperative bean marketing association.

A new packing house for Fullerton, Orange County, is in contemplation. This plant will handle tomatoes and potatoes.

The Claremont Pomological Club held its annual picnic meeting at the Riverside experiment station on the last Saturday in June.

Members of the Santa Ana Walnut Growers' Association have just received checks for $55,000 as final returns for last year's nuts.

Santa Barbara is holding a five-day fiesta from July 1 to 5 in honor of the first landing of Portola and Father Junipero Serra at San Diego.

The apricot canning opened in Pomona on the last Thursday in June. The first fruit to be handled is brought from Banning and other early ripening sections.

A Ventura County bean grower has secured award of over $5,600 in suit to compel payment for beans contracted for and destroyed in fire at Santa Susanna warehouse.

Citrus growers of Ontario are appealing to the county and state horticultural commissions to do everything in their power to keep the dreaded meally bug out of the Ontario district.

Suit has been begun against the Imperial Valley Milk Producers' Association by one of its members, A. Wurthing. Specific charges are made against J. M. Henderson jr. and Harris Weinstock.

Riverside County's crop of apricots, according to estimates of Horticultural Commissioner Sharpe and Farm Adviser Wilson, will be about 23,000 tons. Of this the Hemet Valley is expected to yield 16,000 tons; the Banning-Beaumont district, 4000 tons.

Banning, Riverside County, has a new pre-cooling plant. Several carloads of fruit cooled there have been sent to Canada. The fruit will be thr[illegible]weeks on its way and will be t[illegible]nes reiced. Peaches, plums [illegible]pes will be treated in the same

The Coast and General

Portland strawberries are selling at $4.00 per crate.

There has been an unusually heavy June drop of apples in Kansas.

Yakima County, Washington, claims 700 head of pure-bred Holsteins.

The Elberta peach crop in Texas is estimated at over 1500 carloads.

The Cowlitz Valley Cheese Association has opened a new plant at Toledo, Washington.

A great boom is reported in the building of sweet potato storage houses in Texas.

A wool grower at Yakima, Washington, announces the sale of 1650 head of spring lambs at $10 a head.

The Santa Fe railroad estimates the cantaloupe output of the Rocky Ford district of Colorado at 1591 carloads.

A large number of farmers in the Castle Rock district of Washington are installing electricity on their farms.

In girls' canning clubs of Walla Walla County, Washington, 335 girls have this year enrolled, against 75 last year.

The Colorado Potato Shippers' Association has elected Z, J. Fort of Denver president and W. T. Richards of Denver secretary.

D. Zubeata of Winnemucca, Nevada, has made a sale of 7000 head of sheep to one purchaser. He estimates the worth of the wool alone at $17,000.

Yakima, Washington, pear growers have sent representatives of their association to California to learn as to California Pear Growers Association methods of drying.

Washington exects to break all records this year with its apple crop. The Yakima Valley expects 9000 cars; Wenatchee about 9000; Spokane from 750 to 800 carloads. The Spokane district shows some loss from the early frosts this spring.

Horticultural Inspector Miller of the Yakima district of Washington estimates for fruit of that valley, a yield of about 13,510 cars, divided as follows: Apples, 7500; pears, 3000; peaches, 2500; cherries, 60; prunes and plums, 200; miscellaneous, 250.

A rodeo to include a general round-up of Arizona cattle in the Agua Frio and Hassayampa districts to the junction of the Gila is to take place very soon. This is for the purpose of straightening out the ownership of estray cattle. It is expected that this rodeo will do away with some possible court actions.

As an outcome of the mass convention of farmers of the Northwest at Spokane recently, a second conference has been called of all the accredited representatives of the organizations participating to take definite steps toward forming an organization. It is estimated that 2500 persons were in attendance at some of the sessions of the big mass meeting.

Oregon fruit growers are getting together in an effort to take their fruit out from under marketing control of speculative buyers. An organization committee of 40 was appointed at a big meeting held in Portland June 20. This committee is to draw up articles of incorporation for a marketing association to be known as the Oregon Growers' Association.

The Ignition System

By James De Camp

ELECTRICITY is the animating force behind production and distribution today. We are at the mercy of the mysterious, capricious force that Franklin imported from the clouds. When the nerves of industry sizzle and crackle with its illimitable power all processes march forward toward completion. When there is "trouble on the line" action is paralyzed, completely and effectively.

The owner of a truck or tractor cannot attach too great importance to the functioning of his ignition and starting equipment. A slight oversight in inspecting the battery, tightening connections or patching worn insulation with tape may cause several days of delay and make it necessary to import an electrical expert from the nearest town.

The statement is gaining credence that at least 75 per cent of all motor troubles are located in the electric system. Many of these difficulties are the result of sheer ignorance and neglect on the part of the owner.

Perhaps the most mistreated and most maligned unit in the electric system is the storage battery. Many purchasers, particularly of second-hand machines, have been utterly and blissfully unaware of the fact that a storage battery was included in their equipment until the exacting box of "juice" ceased to function and its internals were found to be entirely wrecked.

The tractor is not usually equipped with a storage battery unless a starting and lighting arrangement has been built into the mechanism. Most trucks and practically all pleasure automobiles are provided with storage batteries, every one of which demands attention at least twice a month and sometimes more often.

The storage battery must have a drink of distilled water about every 15 days in normal weather and should be inspected more frequently in excessively hot spells. The battery makers specify that distilled water be used because the structure and functioning of the battery demand this particular kind of liquid. Faucet water invariably contains mineral secretions that will retard the current-producing properties of the battery and wear it down prematurely.

When pouring the distilled water follow a definite plan to be sure that none of the cells are slighted. Using a funnel begin at one end and go right through to the other, replacing the caps carefully to prevent damage to threading. When too much water is poured into a cell a medicine dropper proves very handy in removing the required amount.

Always be certain that the distilled water covers the plates and yet does not come up into the neck of the cell where the cap is inserted. If the tiny perforations in the cap are not kept clear of water and dirt that particular cell will not give maximum service. Test the caps occasionally with a pin or broom straw, but do not blow through them since the acid stored in the battery is capable of causing very sore and unsightly lips.

The machine owner who desires to know just how his battery stands should purchase an hygrometer. These instruments are inexpensive, a good one can be bought for one dollar, and leave no room for doubt. By registering the specific gravity of the liquid in the battery the hygrometer gives information that is definite and dependable. The instrument consists of a glass tube with bulb attachment in which floats an indicator with a graduated scale. Each cell must be tested carefully and the liquid drawn from it replaced before proceeding to the next. A specific gravity of 1.280 indicates normal strength, while a completely discharged, non-functioning cell will check in at about 1.150. With this instrument battery trouble can be forecast and nipped in the bud to prevent delay.

When a battery becomes worn down one should confer at once with a dependable service station, such as are maintained in the larger towns. Often a process of recharging will restore the battery for several months of use, the battery house supplying a "rent" battery during the recharging period. In other cases it is a great deal less expensive to cast the old equipment overboard.

Often the source of trouble is located in the generator instead of the battery. Keep your eye on the dashboard indicator to be sure that the generator is charging your battery. If trouble appears go over the wiring and connections. Beyond that point, unless one has a good technical knowledge of electricity, it is well to take the machine to an expert for inspection.

The magneto and timing apparatus likewise are good things to hang the "Keep Out" sign on. Most magnetos are thoroughly foolproof and require an infinitesimal amount of attention. Trouble that one believes to be located in the "mag" will usually be discovered somewhere else on closer inspection. If the timing apparatus seems to be kicking up a fuss the work of adjustment should be done by an expert, although some owners become intimate enough with the innards of their machines to do this ticklish job themselves. Misguided efforts at regulation usually cause aggravation of the trouble.

Engines that crank with difficulty on the magneto may be limbered up for starting by installing a dual switch and wiring up a set of dry cells to supply current for the initial explosions. When connecting up a bunch of dry cells place them in a container which will keep them as rigidly upright as possible. Be sure also that your wiring is tight enough to withstand road jars. When the engine refuses to start always glance over the cell connections to make sure that none have shaken loose. Remember that one dead dry cell on the line will prevent the other from delivering the spark properly.

Keep a large roll of tape handy. An inch of tape may save a yard of wire. Inspect all your wiring carefully, taping not only spots that show wear but places that are subject to more rubbing than others. Oil is an enemy of insulation. Keep your wires free from all drip or throw of oil or the insulation will soon show damage. Oil likewise is a good thing to keep away from the magneto. This instrument should be protected with a canvas cover as it is in a position to get gummed up from the valves or other parts of the mechanism.

This Month in the Vegetable Garden

Northern California

By A. R. Gould

WATERING, cultivating and clearing the ground for replanting will be the main features for the month. Keep the hoe and the ground busy and watch for the bugs at the same time, particularly the cut-worm and aphis.

Leeks and Celery

Those which were planted in the trenches last month should be kept well watered and if plants are still procurable from the nurseryman it is not yet too late to get them in, but the soil should have been very deeply dug and manured, trenches being prepared and the young plants planted in the rows about nine inches apart. Later on the soil is filled in to blanch or whiten the stalks.

Corn

A sucession of this popular vegetable should be maintained and a sowing made this month of Golden Cream or Golden Bantam, both of good quality. Those sown last month should be kept well watered, and where the cobs are forming on the earlier varieties arsenate of lead should be dusted on the young silk—in which the young worm or pupa lurks.

Beans

Sow again this month Golden Wax, Refugee and Kentucky Wonder for a later supply. Beans will thrive on sandy but not poor soil, hence your ground should be fertilized. You may still make a sowing of the small white Tepary bean.

Squash, Melons and Cucumbers

See that these do not suffer for lack of water and watch for any leaf eating pests. Dust with lead arsenate or spray, but avoid spraying the blooms or they will fail to set fruit. The warm weather will improve growth and help considerably.

Peas

In most sections it will be much too warm during the next month or two to grow this crop, and after the seed peas have been picked from the crops now coming in the ground should be cleared ready for other crops which may soon follow.

Carrots

Keep those sown last month well cultivated and thin out to six inches apart at least. They must have room to develop.

Tomatoes

These will need very little attention this month unless they are being trained. Then there will be considerable thinning out. Blackfly may also be troublesome, for which spraying should be adopted.

Parsnip

This useful vegetable sown last month as advised will be ready for thinning out to six inches apart in the row. Irrigate at least every week.

Peppers

Secure plants of the Bull Pepper and Red Chili and plant at once six to eight inches apart.

Parsley

Sow Moss Curled in rows or as an edging to the garden plots.

Brussels Sprouts and Kale

Sow seeds of Dwarf Perfection and Dwarf Curled kale. Both these will come in for winter use. Sow the seeds on a border or in boxes of fairly sandy soil and transplant later.

Southern California

By D. F. Reichard

THIS month will see the clean up of much of the early planted stuff. Potatoes should be dug as soon as the tops are well browned, not waiting for them to die. Potatoes left in the ground during the warm weather of this month will soon be spoiled from the effects of the heat. Put the potatoes as soon as dug in a cool dry place and cover with straw and two or three thicknesses of burlap or canvas to keep the light from turning them green, also to keep potato moths from getting at them.

Other crops that should be ready to clean up are peas, beans, root crops such as beets, carrots and turnips; early corn and onions. Harvest onions as soon as the tops fall over by pulling and placing in small piles, with a little trash over them to protect from the direct sun, to dry for a day or two. Remove the tops and place in shallow trays in cool dry place where they will keep for several months.

Where the crops are taken out soak up the soil well and work it over in readiness for late summer and fall crops.

There having been such a light rainfall this past winter we have to use great care in keeping the soil damp enough to foster continuous growth. Sow seeds as soon as the ground can be worked after wetting. Plant them nearly twice as deep at this time as in the cooler seasons.

During the early part of July melons may be planted for fall use; watermelons and casabas will come in during October. Muskmelons will be ready to pick in September. Cucumbers and summer squash can be planted any time this month.

Hill up around all vining plants so as to keep dry mulch for a couple of feet around the stems of the plants as well as to keep the irrigating water away from the center of the plants.

Make planting of either white seeded or Kentucky Wonder or Stringless Green Pod beans and sweet corn every couple of weeks for continuous use. Small planting of carrots, beets, turnips, lettuce and radish may be made to give a variety. Although these are not summer vegetables they will develop tender and tasty if grown in well prepared soil and kept well watered. Plant seeds of cabbage, cauliflower and kale for settings for mid-winter crops.

Watch all crops for their water needs. Be sure to see that corn does not want for moisture while the tassel is out, that is when the corn is making. Shortage of moisture means unfilled ears. Dust the silks as soon as they appear with dry arsenate of lead to destroy the corn worms. Cultivate all ground as soon as it can be worked after each irrigation. Keep tomatoes well cultivated and irrigate only as they show signs of needing it; they do better if given only a small amount of water until the fruit is set. Cucumbers require a good soaking at least once a week; they are heavy drinkers. The same can be said to a little less extent of melons and squash.

The hot days have done away with most of the pests, but it is well to always keep on the lookout for them and apply the proper remedy at once.

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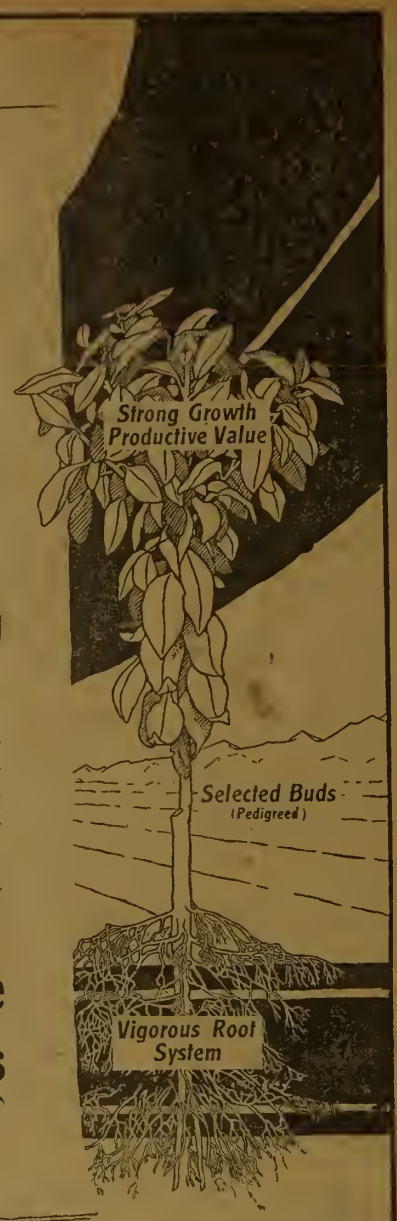

PLOWING WHEN ORANGES ARE BLOOMING

Continued on Page 3.

heavy June drop. Am inclined to think this was caused by too early plowing and absence of proper aeration of the soil during blossom time and absence of a cover crop or fertilizer to carry the young fruit along. A light application of nitrate of soda, applied in March, was the only fertilizer past six months. However, Navel groves plowed in March have as little fruit today, even though in this latter case I turned under a good cover crop.

"Valencias are setting well, regardless of whether grove was plowed in January, March or end of May, excepting I notice that groves plowed very late in the spring are putting forth a second bloom while first fruit is now setting. In early spring I plowed sufficiently deep to turn up a fair but not unreasonable amount of citrus roots, but during and after blossom time I plowed shallow to avoid turning any more roots than absolutely necessary. The groves plowed early in January now show serious die-back and trees dropped most all spring growth of leaves, while the leaf was from five-eighths to one inch long. Do you attribute this die-back and loss of young growth and of fruit (long before the normal period for June drop) to the exceptionally early plowing, the small application of nitrate (1½ pounds), or to a fungus disease? The old leaves show a good, deep-green color and trees are practically free from scalybark, black scale or insect pest.

"From this experience I would insist, in future, upon deferring the plowing until there is a fair-sized cover crop to turn under, even if it were the end of June before the last grove is cultivated, rather than begin in midwinter and lose the value of all that a heavy melilotus cover crop means.

"Since writing the above I have had strongly verified reports of what I suspected a year ago from treatment of my Navel groves, namely, that the 10 to 15 tons of Camp Kearny stable manure I applied per acre had been treated with carbolic acid or some other strong disinfectant. This killed the soil bacteria and otherwise poisoned the soil. Previous to two years ago I had good crops of Navels; now I cannot get half a box on a 15 year old tree. It also seriously affected the Valencias, but not to the extent it hurt the Navels."

It will be noted hy Mr Walters' letter that exactly the reverse of the usual helief was true in his case, that is, the January plowed groves showed severe drop.

As to the cause of the die-back and loss of young leaves we will be glad for opinions of other orchardists. Mr. Walters does not say whether the carbolic treated manure was applied to these groves.

Increased Membership or Quit

THE California Prune and Apricot Growers, Inc., proposes to cease holding the umbrella for growers who refuse to bear their proportion of the burden of maintaining the market. The acreage in the association has been all too small and has prevented satisfactory accomplishment on the part of the association. Now the old members propose to quit or see the other fellow take a hand. From the statement sent out by the association we note that preliminary organization has been completed for waging a state wide campaign for increased acreage late this fall among the fruit growers of the state in accordance with the challenge sent out to the growers in a resolution passed by the board of directors at their last meeting.

The association, which at the time of its organization two years ago controlled 75 per cent of the state's prune and apricot acreage, demands that previous to exercising its options on the purchase of crops to be produced in 1920 and 1921 a greatly increased acreage be placed under its control, permitting it to maintain a firm hand in stabilizing the marketing of the crops.

This ultimatum placed before the growers threatens that the association, formed in the spring of 1917 to protect the growers from the ruinous market manipulations of the independent packers, will disband and go out of business unless a large percentage of the state's acreage is put under contract to the association.

Officers of the organization point out that if the association surrenders its charter the growers will lose all the benefits of cooperative packing and selling which, built up under the direction of the association, have practically eliminated speculative juggling of market conditions which in the past have kept the grower from getting full value for his fruit.

Much of the acreage not controlled by the association at this time consists of newly planted orchards, many of which will come into bearing the next two years.

The resolution as passed by the board of directors reads:

Whereas, according to the terms of the growers' contracts governing their delivery of dried prunes and apricots to our California Prune and Apricot Growers, Inc., said contracts' duration beyond the season of 1919 depends on our exercise of the option for deliveries of the crop to be produced in the seasons 1920 and 1921.

Whereas, in spite of expensive earnest effort on the part of said nization growers have not given idence of materially increasing or en maintaining in some instances our percentage control of these products, now therefore be it resolved in consideration of the above that this board of directors requires and makes the exercise of options on members' crops of the seasons of 1920 and 1921 contingent on the securing of similar contracts with growers representing a materially greater acreage of prunes and apricots, such specific requirement to be named in actual figures after the completion of 1919 deliveries.

And further be it resolved and requested that our organization department make proper preparation for a campaign in all districts, such as will properly present this requirement to the producers of prunes and apricots in all districts of the state.

Representatives of the association's organization department already are in the field working on the formation of local committees which are to wage the new membership drive later on this fall. The representatives in addition are soliciting growers to sign contracts at the present time and will be reinforced immediately by others who are to aid in laying plans in every prune and apricot county in the state for the launching of the campaign.

PEACH CONTRACTS

It was decided at a recent meeting of the Canners' League that peach growers who are under contract will receive $45 per ton this year for their peaches. The growers contend that cost of production has about doubled in the past few years and some time ago took the matter of increased prices up with the canners. It is stated that some of the growers last year had contracted for as low as $25 per ton, while those who have signed contracts this year for their year's crop are receiving $80 per ton and more.

Planting of tobacco in Butte County is reported to have been a commercial success.

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GOODYEAR

AKRON

This Month in the Ornamental Garden

Southern California

THE "dry farm" gardener is pretty well done with his season's work. The lippia or Bermuda lawn may still show a bit of the green, and the geraniums and hardier desert plants may still show a little bloom. On the other hand, the garden with irrigation possibilities may still show some wondeful results notwithstanding a few hot days in June. But it sure does take the water this year. The light rainfall is now fully apparent, and the blue grass lawn suffers over-night and still worse in midday heat unless copiously drenched, for there is but little water to "come up" from the sub-soil.

In irrigating flowering shrubs and plants, most plants do best if the sprinkler is put away and copious soil irrigation in ditches, or otherwise, given. Cultivate in and mulch to save this moisture as long as possible. If sprinkling is done with such flowers as dahlias the warm sunshine soon finishes the particular flowers touched by the water.

The bulbs of the narcissus, in fact, all the spring blooming bulbs, may be lifted and put in moist sand and stored in shade or the coolest place possible for planting next November. Even the iris may be taken up and subdivided, but with these plants it is perhaps better to place in their next season's permanent location. The iris may be allowed to go till well toward the last of the month before making this division. The season seems to be exceptionally favorable for gladiolus, which is showing a wonderful wealth of bloom now. The seed of marigolds, phlox, scabiosa, coreopsis, cosmos, Canterbury bells, centaurea and various annuals may still be planted.

One may soon begin to withhold water from the roses from which a great wealth of holiday bloom is expected. This method is to withhold water until the stems the size of lead pencils are showing material shriveling. When that point is reached severe pruning back fits the plant for sending out new growth, which it does in the fall months.

Northern California

By A. R. Gould

CLOSE attention to details is necessary this month if a continuous display of bloom is to be maintained and watering, mulching, cultivating and fertilizing are all important. Seed for fall and winter flowers may also be sown and some subjects may be propagated. We would once again impress upon our readers the importance of careful watering for lawns. The sprinkler should be moved evenly over the surface and each section given a good soaking, otherwise there will be brown spots, which make the lawn unsightly. All weeds should be removed at the early stages or they will cause much trouble as they quickly seed during the hot weather. Climbing roses will need tying in and the weaker shoots should be removed to encourage growth in the main leaders. Quite a few subjects will require staking, especially in the perennial border.

Annuals to Sow Now

On a semi-shaded border sow the following useful flowers which will brighten your garden for the fall: Godetia, crimson and double rose; Clarkia, Purple Prince and Scarlet Beauty; silene, pink; stocks, Mammoth Nice, Summer Night (deep purple), and Monte Carlo (yellow); antirrhinum, Black Prince, Golden Queen and Defiance (an orange shade much admired); linum or scarlet flax and Linaria hybrids. Most of these are very useful for cutting and are hardy.

Subjects for Propagation

Pentstemon, dahlias, carnation, phlox (perennial) and buddleias all may be propagated by cuttings placed in sand and water as required. The sand should be pressed firmly around the cuttings and they should be shaded during the day from the hot sun.

Dahlias

Complete the planting out of all seedlings and support with stakes all those planted earlier. The plants should also be disbudded to secure the largest blooms. There are usually three buds at each terminal and the two smallest must be taken out. If black or green fly are troublesome spray the plants with Black Leaf 40. Cut-worms are often a pest on these and destroy the young shoots near the ground. An application of strong tobacco dust will prevent them from causing much damage.

Delphiniums

These beautiful flowering perennials are just now at their best and will need stakes for support. If the dead flowers are removed and the plants cut down within 12 inches of the ground new shoots will quickly develop and provide flowers later on. A good mulching with manure should also be given with frequent watering.

Perennial Sunflower

Helianthus augustilolius, the perennial sunflower, was raised from seed by the writer, sent for trial from the department of agriculture last year, and was flowering in eight months. It is a wonderful yellow, growing four feet high and is of graceful habit. As a subject for the perennial border it is of great value and equally so as a fall cut flower. When better known it will become very popular.

Porch and Window Boxes

Nothing beautifies a residence more than tastefully arranged window boxes with flowers, and if these have not already been planted the following may usually be secured from the nurseryman: Ivy geranium, lotus, Evergreen Boston ivy, Tradescantia, asparagus sprengeri, all fine trailing subjects. Lobelia blue, used in combination with begonias, salvias. Marguerites, dwarf French marigolds, petunias, ageratum and zinnias, all make a bright display the summer long. Boxes should be deep and well filled with rich soil, not forgetting the drainage at the bottom as without this the soil will soon become sour and water logged. On the shady side of the house ferns may be used instead of flowering subjects. Seeds of nasturtiums may be sown now in small pots and in a few weeks may be planted in the window boxes for fall flowering.

SHORT COURSES

The University of California announces not only its usual short courses at Berkeley and at Los Angeles but summer session at the university farm, Davis, and at the citrus experiment station, Riverside. The Davis and Riverside courses are designed to prepare teachers and prospective teachers of vocational agriculture to meet the special requirements of the state board of education. The course at Riverside will lay special stress on citrus culture.

CULTIVATING

The Killefer people, makers of cultivators and things, together with their wives and kiddies, devoted one day last week to developing the social side instead of the material. It was the annual picnic of the company held at Santa Monica canyon. There were pie-eating contests until no further cultivation was required along that line.

- and in the front wheels, too

In this Parrett Tractor Hyatt Bearings are used in the front and rear wheels, on the reverse idler and on the fan.

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Summer Pruning of Vines

Because of inquiry recently answered in the Cultivator regarding summer pruning of vines we sent request to Prof. Bioletti for the latest information. Prof. Bioletti writes:

"The summer pruning of bearing vines is a more or less complicated subject which it is hard to treat within the limits of a letter. Certain kinds of summer pruning, such as the removal of suckers from the main trunk and below ground are necessary in all cases. The kind of summer pruning which is usually, if not always, injurious is the severe cutting back of the growing canes from the head of the vine. The only case where this is by any possibility useful is where the winds are so strong that unless we cut off the quarter or half of the cane the wind will take the whole of it off. The removal of any considerable quantity of leaves is always weakening to the vine and therefore diminishes its possibilities of bearing. However, some vines grow so vigorously that they fall to set their blossoms. This seems to be a general rule in plant growth. If such is the case moderate summer pruning consisting of removal of the extreme tips of the shoots before blossoming sometimes results in increased bearing. In Bulletins 241 and 246 you will find this question of summer pruning discussed from the theoretical standpoint quite fully. In Bulletin 296 you will find an account of some practical tests of the effect of various degrees of summer pruning under special conditions."

The bulletins referred to may be had by writing State Experiment Station, University of California, Berkeley.

Corn Ear Worm

Will you please tell me the best time during the growing period to spray field corn with arsenate of lead? Would spray applied to quite young plants have prevented worms eating into the undeveloped flower now?—Subscriber, Ramona.

The best time depends entirely upon the condition of the crop, the first application of lead to be when the silk begins showing fully. This treatment is repeated every few days. It is comparatively inexpensive and most beneficial.

Millet

Is millet a profitable crop to grow in California? Especially is it desirable for young chicks or for poultry? —Subscriber.

This question was referred to Prof. J. E. Dougherty of the University Farm, Davis. Professor Dougherty writes:

Since millet is a very hard seed containing a very tough, fibrous seed coat and since it is also a very expensive feed which does not possess any special feeding value warranting its use at the price at which it sells, we do not feel that millet has any place in the chick ration. Other more common poultry grains are equally good and often much better from the standpoint of nutrition and cost much less.

(See answer to same question in last week's issue).

Fungus Affecting Squash

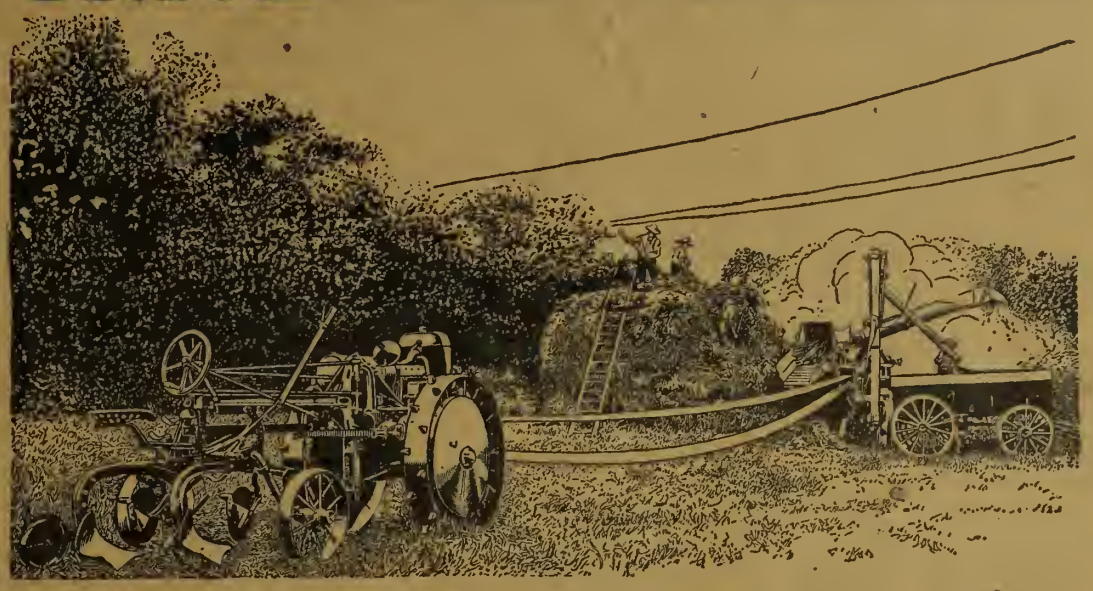
A Burbank subscriber is having trouble with his Hubbard squash vines. He says he has 7½ acres and every day sees a great number of them droop and die. These hot days it seems but a few minutes after they first show signs of wilting until they are a crumpled, wilted heap. Some of the roots are badly decayed and a ball made from the earth near these roots showed growth of white fungus. He often, but not always, finds this near the plant.

This problem was submitted to Prof. H. S. Fawcett of the Riverside experiment station and he writes:

The specimen came in yesterday

Continued on Page 23

MOLINE UNIVERSAL TRACTOR



Saves 1⅓ Men and 5 Horses Per Farm

Through the most comprehensive tractor survey yet attempted, we have found by figures from Moline-Universal Tractor owners—not by guess work—that the Moline-Universal actually saves an average of one and one-third men and five horses per farm.

Over 200 farmers in 37 states from Main to California and North Dakota to Texas were closely questioned, and their farms ranged in size from 40 to 800 acres. Every one of the Moline-Universal owners whose data forms a basis for these conclusions was selected at random from our list of owners, so that these results are average—not exceptional.

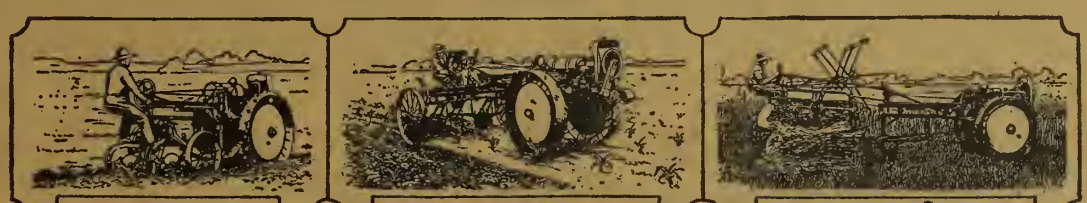
That the Moline is really a Universal Tractor and fits any size farm is proven by the fact that the farms reporting ranged in size as follows: 8%, 100 acres and under; 37%, 100 acres to 200 acres; 21%, from 200 to 300 acres; 13%, from 300 to 400 acres, and 19% above 400 acres. In their report 76% agreed that they could use the Moline-Universal wherever they used horses, and 83% said they could do better work—and thereby make more money.

Owners are positive in their statement that the Moline-Universal is a good investment, and 73% of the Moline owners state that they wouldn't farm again without the Moline-Universal Tractor, while the rest say that they would dislike to go back to horses.

In reply to the question, "Can you operate and maintain the Moline-Universal Tractor for what it would cost you to keep three or four horses?" Ninety-two per cent replied "yes." Many reported they could do so for less.

Space does not permit a complete report, but surely these figures must convince farmers and business men who believe in facts instead of theory that the Moline System of Power Farming is the most economical and efficient, and this is the reason why thousands of Moline Power Farmers are making more money with less hard work. Complete report of this tractor investigation will be gladly furnished on request.

Moline Plow Company, Moline, Illinois



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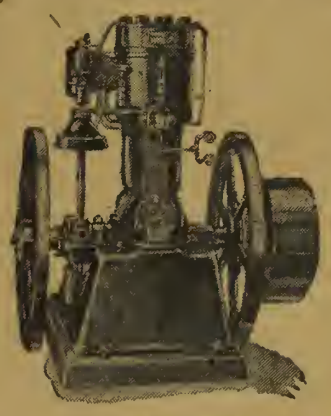

Catalogue on Request

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LOS ANGELES

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ACME Feed Cutters

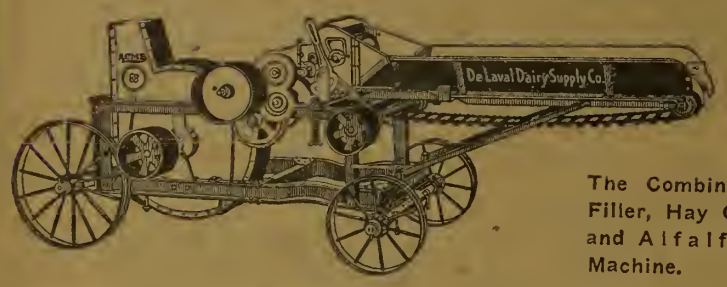
RELIABILITY

THE name "Acme" on a feed cutter is a guarantee of its reliability, for we have made it our creed to offer dairymen machinery which embodies only the soundest engineering practice, the best materials and the best workmanship.

The Light-Running Acme

has proven its superiority to thousands of dairymen in the five essential requirements of a reliable feed cutter and these are:

1.—Quality Cutting 2.—Convenience
3.—Durability 4.—Safety
5.—Light Power Requirements



The Combined Silo Filler, Hay Chopper and Alfalfa Meal Machine.

——Catalog Mailed Upon Request——

De Laval Dairy Supply Co.

61 Beale Street San Francisco

Selecting a Breed and Herd Materia

WE quote the following from a letter just received:

"I have in mind starting a small herd of beef cattle. Because of limited capital I must necessarily begin in a small way. The question that confronts me is what breed to select. Every man I ask has a different opinion. From whom am I to get the essential knowledge of breeds that is important?"

The question asked almost answers itself, yet is one that comes to us as often as any. Every beginner naturally wants the "best" breed—but when there is no "best" breed what is the answer to it?

The very fact that there exists a number of breeds of horses, beef cattle, dairy cattle, sheep and swine, and that each breed has its enthusiastic supporters should be sufficient evidence that no single breed is best in the sense that the beginner seeks to find.

The various breeds have been developed from a common ancestry, largely as a result of local condition, and have been developed with the idea of producing a type of animal that would prove most efficient under those conditions. As the breeds have progressed and gained a wider field, meeting each other under the same conditions there has naturally been a narrowing of the points of variance until now there is not a wide difference in any of the leading breeds. Of course the difference is still marked to a certain extent. Each breed can usually boast of some one or more superior qualities over the others, but no breed has all the good qualities to the exclusion of its contemporaries. One might just as well set out to find the "best" wagon or mower or binder or tractor—or religion or political party! As long as men are put up on the present plan there will continue a difference of opinion as to what constitutes merit.

Our advice to one planning to enter the pure-bred livestock business is to keep an open mind as long as possible—one will lose it soon enough once he decides on a breed—but if he has formed a special prejudice fo a particular breed, that is the breed to handle.

The writer feels that a sound policy for the novice to pursue is about a follows:

Recognize the fact that there is no one best breed—that all are good Consult experienced men in the locality in which it is proposed to operate. If it is found that the majority of cattle, sheep or hogs represent one breed over another it is safe to assume that there is a reason for such a condition and the chances are that reason is that experience has demonstrated the efficiency of that breed under the local conditions. Such being the case the wise thing to do would be to handle that breed and not permit personal prejudices to sway one too far. On the other hand, if one plans a breeding establishment in a new field, his first efforts should be to survey his possible outlet and determine which breed appeared to bo in the greatest demand and why that demand existed.

It is not good business to let one's personal prejudice get the better of his judgment. If there appears a marked demand for a certain breed and that breed is not your favorite—but your open mind permits you to recognize its many good qualities—breed the kind that you can sell to best advantage. At the same time bear in mind that your local conditions—the type of farm, etc.—should be considered.

The really important question to consider in starting a herd or flock is not so much the question of breed as the matter of selecting good individuals within the breed. How this can best be done is a problem the solution of which rests principally on the individual and can be gained by the beginner only through careful study and observation. To become familiar with breed type is not a matter easy of acquisition, neither is a knowledge of bloodlines.

There has been so much misinformation circulated regarding the possibilities of agriculture and livestock production that many men have formed the idea that the game is easy—that all one needs is a little hastily acquired knowledge—picked up from casual conversation or from books and papers. What the Cultivator continually seeks to impress on those interested in starting in the livestock business is that the business of producing livestock is in no way different to most other businesses; that the same fundamental principles that govern other lines of business operate in the livestock game—and no definite formula for success can be given. Heaven knows that we would be glad to give such a formula if we had one, but the fact remains that it cannot be done—notwithstanding that some make an attempt.

What the beginner wants is specific directions and when he is answered in generalities he is disappointed—yet he would hardly expect to get definite directions as to how to become a successful banker, lawyer, doctor, or what not—and expect to succeed.

Once the breed is decided upon the beginner should concern himself with becoming familiar with the modern type and the history of the breed Many of the breeds are subjects of special history, the others can be found, more or less, extensively discussed in general livestock books. A study of the history of a breed will serve to arm the beginner with information that is quite indispensable if he is to progress in the business Such study will enable one to better judge the value of a pedigree—and ability to distinguish between a good and bad pedigree will be of the highest value when making selections of breeding stock. Another means of becoming acquainted with breed history, past and current, is through the breed journals published in the interest of a particular breed. Most of the important breeds support a breed organ. Another means open to the beginner is consultation with established and reliable breeders. Most breeders are only too glad to advise the new man—especially if he will come to them and frankly ask their

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Do you know how much of the high priced feeds you buy are lost by not being digested? You can stop this "feed leak" and get more pork and more milk by using

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There are no substitutes for the best grains and meals. High grade materials will always produce the best results. All Quick Fat feeds are of the highest quality of pure materials—no filler or mill wastes, and are absolutely guaranteed.

QUICK FAT
Complete Hog Feed
The highest possible quality.
Nothing but the pure grains, meals and buttermilk, combined with Quick Fat.
No filler or mill wastes.
It goes farther and gives greater efficiency.
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Why not try a few bags?

They have the highest degree of digestibility. One trial will prove this to you. As the Japanese say, "One seeing is worth one hundred hearings." See for yourself.

QUICK FAT
Alfalfa Meal and Molasses
The highest possible quality.
Only No. 1 alfalfa, free from foxtail and other impurities, combined with Quick Fat.
Also furnished without molasses.
Has greater digestability and higher feeding or nutritive value.
Why not try a few bags?

Try a few bags of Complete Hog Feed or Alfalfa and Molasses. If your dealer does not carry it as yet, write direct to the factory for prices and full information.

Manufactured and Guaranteed by **I. S. CHAPMAN & CO., Inc.** Chapman Building San Bernardino, Cal.

advice. Of course, it goes without saying that livestock journals should be studied, likewise it will be found advantageous to secure sale catalogs and reports and show reports. By careful study of such papers and reports a working knowledge can be secured of the bloodlines held in highest regard by the purchasing public and of the bloodlines that appear to be responsible for the largest number of winning animals.

Another way to acquire breed knowledge is to study the literature issued from time to time by the different record associations. Such literature sets forth the story of the breed's development and the claims made for the breed—some of which should be assimilated with the proverbial grain of salt.

No man can hope to become a successful breeder of any kind of livestock until he develops an ability to recognize merit in breeding animals. In other words a breeder must be a judge. It matters little how well grounded a man may be in breed history unless he can apply that knowledge in a practical way he can not go far in the business. A mere knowledge of prejudices is not sufficient. The ability to judge livestock is not given to all. Some men and women are born livestock judges, some develop the faculty and others never acquire it. The writer is not one who believes it possible to make every man a judge, but he does believe that the average man interested in livestock can become fairly proficient through study and observation. The various agricultural colleges offer highly satisfactory courses that ground one in the fundamental principles of judging, but such training is not possible for the average man. This being the case, counseling with recognized judges, attending shows and fairs, study of illustrated livestock journals, supplemented with careful study of the principles of judging as given in a number of text books, will enable one to develop. This fact should be borne in mind, however, it is not possible to gain judicial ability by confining one's study to any one book or set of books. It should also be remembered that livestock judging is not an exact science—even the best judges do not always agree. Neither can one acquire such knowledge in a brief time.

One of the most certain methods of gaining a conception of the accepted type is by attending the leading livestock shows and fairs. These shows set the standard for all breeds and afford the best opportunity for comparing the merits of the different breeds. At the same time the beginner can make the acquaintance of the leading breeders. The chance to visit the best collections of a breed should not be overlooked. A day spent in the barns and pastures of recognized establishments can be made highly profitable. In this connection it is well to caution the prospective breeder against being too diffident in admitting his lack of knowledge when visiting a breeder of experience. The average breeder can be trusted to give sound advice to the new man and most of them are only too anxious to help if their counsel is sought in a frank way. We mention the above because it has been observed that very often a beginner endeavors to impress upon a more experienced man that he really knows considerable.

The writer has not sought to discourage the beginner from entering the livestock business, it is a wide and growing field in which there is room for all, but he has sought to point out a few of the primary fundamentals with the hope that an appreciation of them will guide the new man around some of the mistakes so often made, and make plain that there is no one universal best breed and to suggest that the big problem is not so much the selection of a breed as the selection of desirable individuals for breeding material.

Live Stock News Notes

SALE CALENDAR

Shorthorn Cattle

July 10, W. M. Carruthers, Sacramento.
August 2, Butte City Ranch, Butte City.
October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

August 20. Fresno County Poland-China Breeders' Association, Fresno.
September 17, John M. Bernstein and W. L. Haag & Son, Hanford.
October 7, Bassett, Ross and Crawshaw, Hanford.
October 18, Trewhitt, Vaughan and Nehls, Hanford.
October 29. Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine

August 2, Butte City Ranch, Butte City.

Duroc-Jersey Swine

July 16, Tulare County Duroc-Jersey Breeders' Association, Tulare.

Hampshire Swine

August 6, Francis T. Underhill, Santa Barbara.

Shropshire Sheep

August 2, Butte City Ranch, Butte City.

New Berkshire Record

In a consignment sale of Berkshires held at Lowell, Massachusetts, the boar, Baron's Successor, consigned by Hood Farm, was sold to L. E. Ortiz for $6000—the highest price ever paid for a Berkshire boar at auction.

Record Ayrshire Sale

Not to be outdone by other breeds in the game of record smashing, the Ayrshire established a new record when 44 head sold in a consignment sale at Springfield, Massachusetts, for an average of $1630. Lotus Jean Armour, a five year old cow, topped the sale and sold for the record price for the breed, $8100. Highland Polly fetched $7500.

E. B. McFarland, proprietor of the Steybrae herd at San Mateo, selected Maple Leaf Lilly, for which he paid $825. McFarland also secured the cow Otterkill Betsey in the New England sale at Springfield.

Change Breed Name

At a recent meeting held in Chicago the members of the Polled Durham Breeders' Association voted to change the official name of the breed from "Polled Durhams" to "Polled Shorthorns," and the name of the association will be "The American Polled Shorthorn Breeders' Association."

Polled Shorthorns have been developed within the Shorthorn breed and when the breed was established the term "Durham," by which old time Shorthorns were commonly known, was adopted.

Why Keep the Other Eight Head?

If the calves from four pure bred Shorthorn cows will sell for as much as the calves from 12 good grade cows what is the object of keeping the other eight grade cows? Feed is high and so is labor. It costs something now to carry an animal through the year. Whether beef is selling unusually high or lower than the average it is a safe proposition that the calves from registered cows will, one year with another, bring in as much to the owner as the 12 calves from grade cows. That means that the pure bred man will feed four cows and their calves as against the grade man feeding 12 cows and their calves. As the calves would ordinarily be marketed at from 12 to 18 months, it is easy to arrive at the comparative cost of maintenance. It will pay to work toward the pure bred standard. And remember this, no matter how long you breed grades or how well they are graded up they will always be grades—and sell at grade values. You will get paid for whatever improvement you make, but the short cut is with the pure bred registered animal.

Interest in Duroc-Jersey Sale

The Duroc-Jersey breeders of Tulare County are well pleased at the interest being displayed in their coming sale which will be held July 16. That the demand for good Duroc-Jerseys has been steadily increasing in California is attested by the fact that practically all the breeders are sold down to pigs of spring farrow. Allen Thompson, president of the organiza-

Continued on Page 14

Summer Advantages of the DE LAVAL

The superiority of the De Laval Cream Separator is more apparent and is more appreciated during the summer months than at almost any other time of the year.

Farmers appreciate the De Laval during the busy summer season because of its large capacity and the fact that it is easy to turn and easy to clean.

With a De Laval, the milk is taken care of in the shortest time and with the least effort—both important in hot weather when a number of other things have to be done.

Quick handling of milk and cream in hot weather maintains the highest quality of both, and often means the difference between profit and loss.

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If you don't know the De Laval agent in your community, write to the nearest De Laval office.

De Laval Dairy Supply Co.

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ALPHA GASOLINE ENGINES
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Auctioneers

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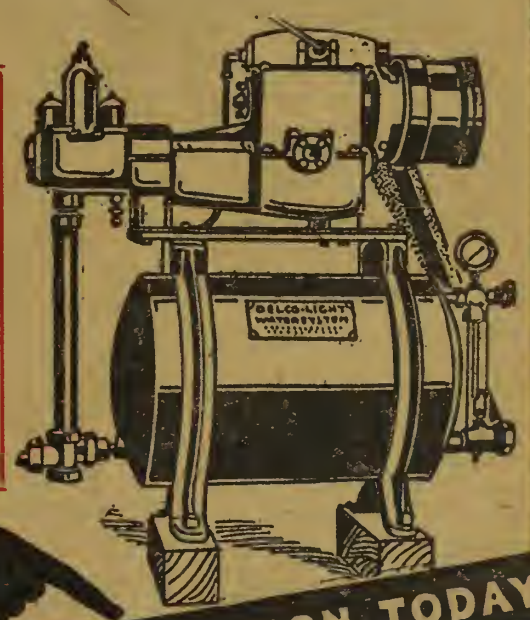

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Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

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For 30 years I have been devoting my entire time to pure bred beef cattle. I know the kind of cattle California needs and where and how to buy. I make regular trips to the great producing centers and will buy on order. Best of references. Satisfaction assured. Correspondence invited.

R. M. DUNLAP, Hotel Land. Sacramento, Cal.

LIVE STOCK NEWS NOTES

Continued from Page 11

tion, and one of the oldest breeders in the state, will consign 15 sows and gilts bred to his two herd boars, Joe's Orion Cherry King 5th and Lord Orion Cherry King. Mr. Thompson states that had he not been reserving the above animals for this sale, they would have been sold long ago, as buyers visit his ranch nearly every day. A number of breeders have already signified their intention of attending the sale to assist the breeders of Tulare County in boosting their favorite breed. The sale will be held in the new sale pavilion. Col. George Bell will be the auctioneer.

Central Milk Producers Financing

The Milk Producers of Central California are floating an issue of $180,000 first mortgage, 7 per cent serial gold notes dated July 1, 1919. This is the second of a series of bond issues by the association. The above association is a unit of the Associated Dairymen of California and has plants at Oakland, Stockton and Modesto. The association plans to extend its operations.

Will Show Durocs

W. M. Way & Son, who, for a number of years, have been breeding Duroc-Jerseys on their ranch near Modesto, are developing several young boars, which they expect to show at Sacramento together with older animals. Mr. Way states that these boars will have to show against animals several months older, but he expects them to give a good account.

Believes in Better Hogs

Walter C. Ficklin of Fresno has two ranches, one in the foothills just east of the city and the other a few miles north. On the east ranch the hogs raised will be for pork purposes only, while on the northern ranch will be located the breeding herd of big-type Poland-Chinas. Ficklin will have four to six head in the August sale of the Fresno County Poland-China Breeder's Association. He was recently elected secretary and treasurer of this organization and is one of the most enthusiastic boosters for better hogs in the community and believes that California ranchers can not afford to raise any but the best hogs.

Buckland and Son to Show Polands

A. Buckland & Son will have in the Fresno County Poland-China breeders' sale August 20, 15 sows or gilts bred to their two herd sires, California Jumbo Buster by Buster Buster and Missouri Blue Valley King by King Big Bone. These two boars will be seen in all the fall shows as the Bucklands believe in showing the public the kind of hogs they raise.

Buys Carload of Eastern Polands

Chas. Gatewood of Fresno has just returned from the East where he went to purchase a car of Poland-Chinas, part of which will be sold in his mid-winter sale. Included in the lot purchased is a young boar by Long Prospect, the sire of the grand champion sow at the Nebraska state fair that also defeated the sow that was made grand champion at the National Swine Show. The boar was purchased from O. E. Wade. Rising City, Nebraska.

Gatewood's Poland Boar, Fresno Boy

Fred Gatewood, the Poland-China breeder of Fresno, has in his young boar, Fresno Boy by Orange Boy, a boar which he believes is going to be of much benefit to the breed in California. He has 22 fall gilts that will be bred to this boar and sold in the mid-winter sale he and his father, Charles Gatewood, will hold in January or February. Gatewood is a direct or of the recently formed Fresno County Breeders' Association and is also superintendent of swine of the Fresno fair. He states the Poland-China futurity to be held at Fresno closed with 15 entries and the Duroc-Jersey futurity with 17 entries.

Grapewild Berkshires

Charles Maurer, in charge of live stock at Grapewild Farm, the Escalon property of A. B. Humphrey, will be at the shows this year with full herds of Berkshires and Guernseys. Maurer has two fall boars by Majestic King 6th; grand champion of 1917 and out of Island Artful Belle 6th, which he considers the best prospects bred on Grapewild Farm in many a day. They are both being reserved for the present, notwithstanding flattering offers for either or both. A new dairy barn, 80 by 124 feet, sufficient for 120 cows, with bull pens, calf pens and stalls for test cows is now under construction. Five cows are now on yearly

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test. It is planned to add others as soon as they freshen. Six Guernsey bulls have recently been sold, one going to British Columbia.

Finlay to Handle Anderson Berkshires

Jack Finlay, formerly herdsman of the swine department at the University Farm and who for the past two years has been located in Arizona, has recently returned to the Sacramento Valley and is in charge of the Frank B. Anderson herd of Berkshires, just north of Sacramento. Finlay is regarded as one of the most expert swine herdsmen in the West and it is expected that he will make a record in the Anderson herd. Before going to the university farm he was connected with the Jack London Ranch at Glen Ellen.

Severe Visiting Poland Breeders

A. D. Severe of Dows, Iowa, one of the most successful Poland-China breeders in the Middle West and who has been responsible for many of the leading boars of recent years, is visiting California breeders. Severe is now using The Yank, a son of The Yankee, and therefore a half brother to The Yankee Jr., the good young boar now being used by John Bernstein of Hanford. In the Haag & Bernstein sale to be held at Hanford, September 17, a number of sows and gilts bred to The Yankee Jr., will be sold.

California Cattle on K. C. Market

California cattle still continue to arrive on the Kansas City market in trainload shipments. Lewis & Creel, extensive ranchers at Calipatria, made a sale of 525 head of horned steers. The price ranged from $12.50 to $13.00. "That was our first sale on the Kansas City market," said T. J. Lewis, senior member of the firm, who accompanied the shipment. "The increased shipments of cattle and sheep from our state to Kansas City can be explained in the fact that we are raising more stock producing a greater amount of feed each year. The Coast territory no longer can consume the sheep and cattle raised in territory tributary to those points."

Glide Gets an Imported Bull

Thornton S. Glide, Davis, owner of the Hillcrest herd of Shorthorns, one of the pioneer collections of this state, was a buyer at the great Carpenter and Ross sale at Chicago. Mr. Glide secured the imported red junior yearling bull, Scottish Lord. This bull was bred by Robert Anderson, Aberdeenshire, Scotland, and was sired by Lord of the Ring, a Duthie-bred bull. His dam, Bright Bess of Collynie, also bred by Duthie, was purchased by the Dibble estate, Santa Barbara.

Dibble Estate Buys Imported Shorthorns.

T. Wilson Dibble, San Francisco, reports that John Troup, manager of the Dibble estate's herd of Shorthorns, attended the record-breaking Carpenter and Ross sale held at Chicago June 24 and 25, and selected an imported bull and two imported females. The bull is a roan junior yearling, Grand Gallant. He was bred by G. E. Kerr, Dollar, Scotland. His sire is Sanquhar Grand Gallant and his dam is Imp. Rosamond, a Red Lady, sired by Prime Favorite. Grand Gallant is brother to a bull sold last year for $12,000. One of the cows selected by Troup, Imp. Bright Bess of Collynie, a Marr Bessie, sired by the Duthie-bred bull, Knight of Collynie, is the dam of the bull purchased in the same sale by Thornton S. Glide of Davis. She sold with a red bull calf at foot sired by Maxwalton Minstrel.

The Dibble herd will be out in strength at all of the fall shows.

73 Shorthorns Average $2180

In a sale of Shorthorns held by Bellows Bros. at Marysville, Missouri, June 19 73 head sold for an average of $2180. The first 40 head to sell averaged $2940.

The top bull, Standard Supreme, was purchased by Charles R. Barr of Illinois for $15,600. The top female was Roan Princess, which was purchased by E. Ogden & Son of Missouri for $7000.

New Holstein Record

In the first annual guaranty sale held by Minnesota Holstein breeders at Moorhead, Minnesota, June 12, 76 head were sold for $219,675, an average of $2890, which exceeds the former record for the breed by $460.

The bull, Sir Pieterje Ormsby Mercedes 41st, was purchased by Gaston Pabst of Wisconsin and E. C. Schroeder of Minnesota for $65,000.

New Duroc Breeders

T. J. Gist & Sons of the Holberk Stock Farm, Tulare, recently purchased two fine registered Duroc-Jersey sows from H. E. Cornwell and five gilts from J. P. Daggs. They now have ten registered females that they are going to use for a breeding herd.

Holsteins on Test

T. J. Gist & Sons recently made two very good records on their Holsteins. The cow Astrologess Bonnie Maid has to her credit 22.60 pounds of butter in seven days and Moorland Contenta Jetze made 20.15 pounds of butter in seven days as a three year old.

Why Keep the Other Eight Head?

If calves at 12 months from good grade cows bring $50 each the returns from 12 cows would be $600.

Four registered Shorthorns cows would produce calves worth $150 each at the same age or $600 for the four.

The cost of keep would be three times as much with the grades.

Why then keep the eight extra grade cows? The answer is don't do it.

Put in a few registered Shorthorn females. Their calves will pay the bill.

American Shorthorn Breeders' Association
13 Dexter Park Ave., Chicago, Ill.
Ask for literature.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
El Monte, Cal.

Long Jumbo and Yate's Big Orphan

have sired some wonderfully fine pigs. Big type Poland-Chinas by these two boars for sale at a reasonable price. Write immediately for full description. Fully guaranteed to satisfy.

R. J. Yates, Orland, Cal.

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State Grand Champion 1918

Introduce his blood into your herd through weaners from his litters.

We guarantee you absolute satisfaction or all money refunded.

James Mills Orchard Corp.,
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by placing your order for a young Berkshire boar from the famous Anchorage Farm herd. Star Leader and several of his sons have been mated with our large type Berkshire sows. Star Leader is famous wherever good Berkshires are known.

One of these young boars will not only add size and vigor but will add the quick maturing qualities demanded by pork producers.

Write immediately for full particulars and breeding and secure your future herd boar. Priced within reason.

Anchorage Farm Orland, Calif.

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

Closing Out Sale Poland Chinas

SEVEN BROOD SOWS WITH LITTERS AND TWO YEAR OLD REGISTERED BOAR, SMOOTH JUMBO WONDER.

Owing to other interests I have decided to close out my entire herd of Registered Poland-Chinas, including my herd boar, Smooth Jumbo Wonder, sired by Mouws Jumbo Wonder—$2600 refused for him. Each of the seven sows have nice litters or are bred. Splendid opportunity to obtain a profitable herd or breeding stock. These hogs must be seen to be appreciated.

Chas. A. Rives 10th and Law Streets Burbank, Calif.

It's a Source of Satisfaction to Know Where to Find the Right Kind of Hogs When You Want to Buy

King Jones Over

A son of the great King Jones. Dam by Long King out of a Big Bob sow. He possesses all the qualities of the modern Poland-China, weighs 600 pounds at 14 months, stretchy, deep, well hammed and right up on his toes.

He leads the best herd of strictly big type sows in California.

Some extra good fall boars for sale now. Cholera immune.

McCarty & Starkweather
P.O. Box 2250, San Francisco
Ranch, Paradise Road, Modesto

Look to the Future

Many good sons of King's Big Bone Leader have gone to head good herds. If you want big type Poland-Chinas come where they are bred. Wakeen Herd of Champions.

Les McCracken Ripon, Calif.
Bred Sow Sale in October

Lark Meadow Ranch

Berkshires are bred on this ranch that spell profit for the purchaser. Big bone, strong backs and right type.

Geo. A. Stingle El Monte, Calif.

From California's leading herd of DUROC-JERSEYS

You can NOW secure young Durocs of correct type and breeding. Fifteen sows and gilts from this farm go in the Tulare sale July 16th. They are the profitable kind to buy.

Allen Thompson Tulare, Cal.

Greenwood DurocS

It is possible to secure as good but none better.—We not only breed them right but grow them properly. It will be well worth while to write Greenwood Farm for the kind of Duroc-Jerseys you want.

H. C. Witherow, Mgr. Live Oaks, Sutter Co., Calif.

Save Your Hogs

Raise Your Hogs and Cattle at a Profit

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A general conditioner, a worm expeller and a disease preventive.

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Owned by W. M. Carruthers, Live Oaks, Calif.

Second Public Sale

45 SCOTCH SHORTHORNS 45

Thursday, July 10, 1919

State Fair Grounds
Sacramento, California

Hallwood Villager 495521

There are 42 females in this splendid offering, conceded to be the outstanding sale offering of the west to date. A list of all the good ones is a list of the catalog, but in this limited space the following may be mentioned:

BROADHOOKS SULTAN 2ND, a show heifer, by Augusta Baron and out of a daughter of Whitehall Sultan—selling with heifer calf at foot.

LADY GRACE, by the great Ringmaster and out of a daughter of March Knight—selling with an extra good bull calf at foot by Count Glory and she is bred to Hallwood Villager.

LANCASTER SNOWBALL, by Lancaster Rosedale and out of Alexandrina Lady—selling with heifer calf at foot and bred back to Hallwood Villager.

STAMP'S VICTORIA 2ND, by Majestic Viscount and out of Ravenswood Victoria—selling with bull calf at foot by Golden Viscount.

RED QUEEN 4TH, by Viscount's Stamp and out of a daughter of Butterfly Viceroy—selling with bull calf at foot by Lavender Stamp 2nd.

BRED HEIFERS

LADY RUBERTA, a show heifer, by Ruberta's Goods and out of a daughter of Diamond Rex—bred to Count Glory, three times grand champion bull at California State Fair.

RAVENSWOOD LADY 3D, by Majestic Viscount and out of Lady Ardmore—bred to Lord Julian

MAYFIELD VICTORIA 2ND, by Count Glory and out of a Victoria dam—bred to Hallwood Villager.

MAYFIELD HURST 2ND, by Hallwood Sultan and out of a daughter of Wallhurst Goods—bred to Hallwood Villager.

RED MORNING GLORY, by Proud Monarch and out of a granddaughter of Choice Goods—bred to Village Chieftain.

AVONDALE'S GIPSY, by Avondale's Heir and out of Gipsy Queen—bred to Village Chieftain.

The above is a fair sample of the quality of the offering throughout, which includes twelve cows with calves at foot, a large number of bred heifers, and a smaller number of open heifers of the choicest breeding.

THE BULLS

HALLWOOD VILLAGER, a bull that would be an attraction in any sale ring of the highest class Shorthorns, will be a star attraction in this sale. He is rated by many disinterested authorities as one of the very greatest young Shorthorn bulls in the west, qualified in every way to head the best herd of females in the west, and he is conceded to be worth a small fortune to the breeder fortunate enough to secure him. He is sired by Village Flash, one of the best sons of Villager, and is out of a Lavender dam sired by Star's Champion, son of Star of the North.

MAJESTIC VISCOUNT 2ND, a splendid red bull, smooth and mellow, a meaty individual, and with the breeding and type that stamp him as a high class herd bull. He is by Wood Dale Stamp, whose sire was The Choice of All, and whose dam was Imp. Clara 58th. His dam is Fancy of Ravenswood 3d, by Golden Goods and out of a daughter of Lavender Viscount.

VICTOR LAD, a smooth, thick, red yearling by Maxwalton Rosedale, he by Avondale out of Imp. Rosewood Pride. His dam is Victoria, of the famous Cruickshank Victoria family.

This brief outline of some of the animals in the sale gives only a glimpse at the real quality represented, for the individuals and their pedigrees must be seen to be fully appreciated.

Every animal sold as a single lot is tuberculin tested and guaranteed to be a breeder; every young animal permanently immunized against blackleg by Purity Blackleg Aggressin made by the Kansas process.

Sale Opens Promptly at 1 P.M.

Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Jr., Pres. C. L. Hughes, Sales Manager
Sacramento, California

Auctioneers: Reppert, Milne

Jersey Club's Annual Meeting

The fifty-first annual meeting of the American Jersey Cattle Club was held in New York on June 4.

A year of progress was reported in every department. The registration and transfer of pure-bred Jerseys has been extremely heavy during the past year and indicates the rapid advancement of interest in Jerseys. The Register of Merit now includes some 12,000 cows with yearly records, which is almost as many year's tests as those of all other breeds combined. Three new records were made in the past year and the coveted thousand pounds of fat mark was passed twice.

Provision was made at the annual meeting for an extension of the progressive policies in force to keep up the rapid advancement of interest in pure-bred Jersey stock. The club has increased its appropriations for fair premiums and Register of Merit prizes, as well as having created a fund for calf-club work.

An appropriation was made to take care of the expense involved by the proposed economy test that is to take place in Texas, beginning October 15, at the Texas State Fair grounds. This test is the outcome of a challenge by Mr Ed C. Lasater, the owner of Falfurrias Jersey Ranch, Texas, with its 5000 Jerseys, to the Holstein breeders of Texas to hold a year's test of the two breeds for determining which can produce all dairy products most economically. It will be remembered that the Jerseys won the three previous great tests for economic production at St. Louis, Chicago and Ohio, and the feeling at the club meeting was that a test of this kind in Texas would be one of the best methods of promoting the breed in the South.

The reelection of Mr. M. D. Munn of St. Paul, Minnesota, as president was unanimous, and Mr. E. A. Darling of Vermont was made vice-president. Mr. Geo. T. Chaffee remains as treasurer and Mr. R. M. Gow as secretary. The new directors are Mr. Wm. Ross Proctor, New York; Mr. E. A. Darling, Vermont; Mr. A. F. Platter, Texas; and Mr. Hugh G. Van Pelt, Iowa

$39,000,000 Live Stock Turnover

F. P. Allen of the bureau of markets, Los Angeles, has issued a series of tables showing the actual live stock turnover in Southern California during the year from July 1, 1918, to June 30, 1919, inclusive.

The number of head received and slaughtered at the several Los Angeles plants and the average price per head appear in the following table:

	Cattle	Calves	Hogs	Sheep & Lambs
July to December 1, 1918	79,232	18,048	81,678	121,903
January, 1919	14,566	2,488	19,921	26,904
February, 1919	10,550	2,142	19,794	21,454
March, 1919	10,131	2,474	15,777	23,255
April, 1919	10,477	3,142	15,300	26,208
May, 1919	13,305	3,218	15,441	30,992
June, 1919	12,308	2,469	14,205	27,158
Total kill	150,569	33,981	182,116	277,874
Estimated price average per head	$100.00	$12.00	$35.00	$10.00

Taking the estimated value per head, as above, the total value of the kill follows:

Total Estimated Value of Kill	
Cattle	$15,056,900
Calves	417,772
Hogs	6,374,060
Sheep and lambs	2,778,740
Total Kill	$24,627,472

The estimated value of other stock, including dairy cattle, feeders and shipments to Eastern markets during the year are:

Total Estimated Value Other Stock	
Dairy	$ 3,000,000
Feeders	8,078,434
Shipments to Eastern markets	3,500,000
Total	$14,578,434

The estimated total value of the turnover for the year is $39,205,906.

Turning Feed Into Money

In our Central California news notes we recently referred to the Tulare center hog auction, wherein it is stated: "The feature of the sale was the close of the boy's pig club contest inaugurated by the bureau. The prize pig cost its boy owner $31 and was sold for $55, net profit of $24!"

A subscriber wrote in wishing to know the method of feeding. We asked County Farm Adviser Connor for information, and he turned our letter over to the prize winner, Harry Martin, who writes:

"My pig was a Duroc-Jersey gilt and weighed 97 pounds at the start of the contest. I bought her of my father, paying him 15 cents per pound, or $14.55. I fed her ground milo, ground Indian corn, rolled barley, Suremilk and buttermilk. I fed the grain in a self feeder and gave her all the buttermilk she wanted to drink. I cannot furnish an itemized account of this because it is in the pig club book and the farm adviser has it. The total cost of the feed and buttermilk was $16.41 and the oost of the pig was $14.55, making a total of $30.96.

"I had her pen under a big oak tree and gave her the best of care. I oiled her a number of times and brushed her often. I am sure from the way my pig looked on the day of the contest that I was well repaid for the extra care I gave her. I am now feeding another Duroc-Jersey female pig as an experiment. She now weighs 65 pounds and is ten weeks old. She is from the same strain as the contest pig, and at the rate she is going now she will be the equal of if not better than the contest pig."

A VISIT TO THE BLACKHAWK SHORTHORNS

By W. S. Guilford

In company with Hon. E. H. Grubb, I had the pleasure of seeing the Shorthorn cattle recently purchased in the East by William Ward and E. Lovell of the Blackhawk Ranch Diablo.

Taken as a whole they constitute one of the best collections brought to this state in recent years.

For a herd bull they have secured Roan Radium, a son of Radium, who is by Double Dale. He is a proven sire and his calves are some of the best I have seen. Two outstanding ones are Blackhawk Radium, a rich red youngster, out of a Red Lady dam, and the white Blackhawk Favorite. Roan Radium calves are thick, deep and mellow and have particularly pleasing rear construction, being very square and carrying their width down into their quarters..

Some of the best and most popular Scotch families are represented among the females—Cruickshank Violet Buds and Victorias. There are a number of choice daughters and granddaughters of Villager; a daughter of Gainford Champion, and a granddaughter of Whitehall Sultan. Individuality as well as pedigree was insisted upon and they are an especially useful lot—big and roomy, with

plenty of substance and ample evidence of being good milkers.

Blackhawk Ranch consists of several thousand acres of good rolling grazing and farming land at the foot of Mt. Diablo, in Contra Costa County, 20 miles from Oakland.

This place is already famous for the stud of Shire horses. With the natural conditions, feed, climate and water, and under the management of Easton and Ward and Manager Lovell, this is destined to be one of California's greatest Shorthorn establishments.

HORSES DESERVE PROTECTION FROM FLIES

STABLE flies are a source of keen annoyance to work animals during the heat of summer. Every owner who has the welfare of the dumb beasts at heart should strive to alleviate as far as possible the discomforts to which the horses are exposed.

The most logical method of abating the fly nuisance is to eliminate all breeding place, such as manure piles. The bureau of entomology advises that manure be kept in fly-tight pits or bins until such time as it can be hauled to the fields. Pits should be conveniently located so the manure can be easily thrown in at the time of cleaning and so constructed that it can be readily removed. It is essential that flies be prevented from reaching the manure, but, as some of them will, even though great care is exercised, it is advisable to place a flytrap on the pit.

The coal-tar sprays used in combating the fly evil in the dairy stable are also efficient in driving the winged pests away from the horses. Among the best of these is a solution of 100 parts of fish oil, 50 parts of oil of tar, and one part of crude carbolic acid. It may be prepared at home at a cost of about 35 cents a gallon. This spray, as well as kerosene emulsion and other fly repellants containing coal-tar products, fish oil, resin, and oil of tar, are best applied with an inexpensive spray pump. It is preferable to give the horses a hasty spraying early each morning before they go to work. This brings best results from the use of the fly eradicator.

Sponge Baths After Work.

For the general comfort of the work animals when they come from the field at night it is recommended that after the harness has been removed each animal be given a sponge bath with a solution of cool, salt water. In case there are any work galls or shoulder sores, these injuries should be treated with white lotion, which is one of the best healing and soothing preparations of its kind for use in warm weather. White lotion is composed of a mixture of six drams of zinc sulphate (white vitrol), one ounce of lead acetate (sugar of lead), and one pint of water. It is efficient in curing wounds, sores, summer galls, and fistula, and should be applied three times daily for best results.

The prevalent sentiment among horsemen is that it is better to house and feed the work horse during the summer than to attempt to run the animal on grass with a scant supply of grain and hay. Grass is not a desirable material to serve as the basis of the work horse ration. The practice of turning work animals out on Sundays to eat grass, to which they are unaccustomed, is a prolific source of colic and other digestive disorders. Generally the animals would be better off in a cool, darkened stable, where they could be carried on half rations of grain during idleness.

Night Grazing Harmful.

Where work horses which are fed a full allowance of grain are turned out to graze each night they usually are in poor condition for work next day, as the extra feed they have consumed merely tends to increase the tax on their digestive capacity. However, where the stables are hot and ill ventilated it is preferable to expose the horses to digestive troubles on the pastures rather than to attempt to carry them in the barns.

The feet of the work animals should be examined frequently during the summer, in order that accumulations of dirt may be removed. A few moments devoted to scraping out the hoofs each morning and evening will add to the comfort of the beasts, as often such foreign materials as nails or stones lodge in the wall or sole of the foot or are collected in the clefts of the frog or between the bars and the frog. If the hoofs are excessively dry or brittle, they should be softened with some good oil or hoof ointment, and if they are ragged or tend to split, they should be rasped on the edges and trimmed until smooth.

It is advisable to clip horses when the weather warms up in the spring and heavy work begins. When clipped, they work much better, and they do not become chilled after work from having thoroughly soaked the heavy coat of winter hair with perspiration. Horses that are clipped as soon as heavy spring work begins should be blanketed at night.

HOG CHOLERA LOSSES ON DECLINE

Since 1913, when the United States department of agriculture began work to control hog cholera, the dreaded disease has become less and less destructive each year. A force averaging 165 federal veterinarians has been maintained, working in cooperation with state authorities in charge of quarantine and other regulatory measures necessary for the success of control work. During the fiscal year 1918 more than 5,500,000 hogs were inoculated with anti hog cholera serum, and more than 2200 farms, found to be infected with cholera, were cleaned and disinfected under supervision of the department veterinarians.

Altogether representatives of the department visited more than 15,000 farms to investigate reported outbreaks, to apply preventive measures, and to clean and disinfect premises. How great a menace hog cholera has been to the nation's swine industry may be judged from the accepted estimate that 90 per cent of hogs lost from all ailments die from cholera. In 1918 the death rate of swine from disease was placed at 42.1 per thousand. Thus the loss was slightly above four per cent for the United States, the lowest on record, according to the department's figures.

The Honcut-Yuha and the Cordue irrigation districts in Yuba County have filed petitions for increased water supply.

Attend This Splendid Sale

60 Bred Duroc-Jersey Sows and Gilts 60

This is the largest and most important offering of Duroc-Jersey Swine at Public Sale ever held in California—

Wednesday July 16, 1919

New Sale Pavilion, Tulare, California

Every sow and gilt in the sale bred to a high-class boar.

Every animal guaranteed and bred for early fall litter.

This is your opportunity.

Investing in pure-bred DUROC-JERSEY hogs is practical and safe and returns large profits on the initial cost. DUROC-JERSEYS grow big and grow quick. The sows lead all breeds in the world in the number of pigs farrowed.

To the Breeder—The Farmer—The Beginner

You will find in this sale sows and gilts qualified to go into any herd—you will find them ready to go on any farm and make money for their owner. You will find here animals of real foundation qualities for the establishing of new herds.

Of the Greatest Importance

is the quality of animals offered so this special feature has been adopted.

SPECIAL FEATURE:

The Duroc-Jersey breeders of Tulare County in order to establish and maintain the highest standard of excellence in their offerings have adopted rules and regulations for conducting their sales.

A committee has visited the herds of the various breeders and selected only such animals as were deemed worthy a place in this sale.

The sale animals have been selected from the herds of the following well known and established breeders: Allen Thompson, Tulare; Alex Whaley, Tulare; W. J. Higdon, Tulare; Henry Cummins, Goshen; J. P. Walker, Visalia; Joe Chenowth, Visalia; W. J. Fulgham & Sons, Visalia; W. J. Stewart, Visalia; S. A. Williamson, Visalia; R. E. Clifford, Strathmore; C. E. Ellis, Tulare; R. C. Sturgeon, Tulare.

These breeders are putting into this sale some of their very best sows and regardless of the bid will be sold to the highest bidder. No by bidding or reserve bids. The animal is yours if your bid is the highest.

The Greatest Blood the breed contains will be in this sale

The Critics, The Crimson Wonders, The Defenders, Golden Models, Orion Cherry King—Famous wherever Duroc-Jerseys are known. Don't let this—your opportunity—pass. Remember every sow or gilt is bred to a good, high-class boar.

Secure your copy of the sale catalog at once by writing R. C. Sturgeon, Secretary, Tulare, California, that you may judge the quality of this, California's greatest sale of Duroc-Jerseys. Then make a careful note of the day and date.

WEDNESDAY, JULY 16, 1919

and arrange to come to Tulare County, California's greatest Duroc-Jersey county where these great **Durocs will be sold.**

Free lunch and cold drinks at noon. Sale will start promptly at 10:00 A. M.

Geo. W. Bell, Auctioneer **Allen Thompson, Pres.**

Come and bring your friends and neighbors

Tulare County Duroc-Jersey Breeders Association

Tulare, California

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 33,000 readers, weekly.
Liner rates: Single insertion 3c per word; 35c per issue minimum charge.

TREES

For Sale — Budding Cloth 50c yard; also leading varieties citrus nursery stock. Selected and pedigreed buds. Order quick for early delivery. Cyrus W. Wilhite, Citrus Nurseries, Glendora, California, Box 154.

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

400 Late Valencia, ½ inch to ⅝ inch, one year old buds. Edw. H. Rust, 1625 Bank St., So. Pasadena, California.

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale: inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY, 137 N. Fair Oaks Ave., Pasadena, California.

MISCELLANEOUS

Before Selling or Buying land procure a soil analysis from a competent expert. If the report is good you can sell for better prices; if bad the buyer can save and pass it up. One party, after getting my report sold his grove for $6000 more than he had asked for it and could not sell. R. R. Snowden, Agricultural Chemist, 320 Stimson Bldg., Los Angeles. Phone Pico 843.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

WANTED

A London Firm with Branch Office Paris, having large connection in condensed milk seeks sole agency for England and France of first class condensed milk factory, both sweetened and unsweetened. First class references given and required. Apply with full particulars to Box 799, Care Hooper & Batty, Ltd., 15 Walbrook, London, E. C. 4, England.

Want to Buy 10 to 40 Acres Near the mountains; running water and cheap commercial electricity. Price of land must be reasonable. DR. McHUGH, 311½ S. Main street, Aberdeen, S. D.

Caretaker, 35 acres, 4 yr. Valencias. Will deed interest in or part of. $2500 required. H. F. C., R. D. 4, Anaheim.

Wanted to hear from owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minn.

Feeder Hogs Wanted. R. B. & N. Ranch, Waukena, Tulare Co., California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Box 501, Fowler, California. Write for circular, prices on seed and plants, Sudan, Dwarf Milo Maize, Honey Sorghum, Amber Cane.

RABBITS

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock, Paul Kruger, Watsonville, California.

FERTILIZER

EARL A. HOLCOMB
SOIL LIFE
Fertilizer and materials mixed to balance every soil. Bureau of testing and advice free on all horticultural and agricultural subjects. 1022 Washington Bldg., Los Angeles. Phone 62907, res. 16116.

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101, Watsonville.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

Send For Free Booklet—"All About Patents and Their Cost." Shepherd & Campbell, Patent Attorneys, 734 L 8th St., Washington, D. C.

EDUCATIONAL

BEST OF BUSINESS TRAINING
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for
Private Secretaries.
600 Sutter St., San Francisco.
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It's Easy to Prepare For a Bookkeeping position while earning. Write for Booklet X 21. It's free. Pacific Extension University, Spokane, Washington

MULES

For Sale — Twenty five young mules, one and two years old. Chas. Hubbard, Riverdale, California.

MACHINERY

SPECIAL BARGAINS
GALV. SURFACE IRRIGATING PIPE
4-in., $16.50; 6-in., $24.50; 7-in., $31.90; 9-in., $38; 10-in., $43. 6 hp. Lambert gas engine, $115; fine 8-in. double acting cylinder new, $150; 4-in. hor. cent. pump, $69; 5-in., $88; 6-in., $125; No. 3 Ames double acting plunger pump, $275; pipe and rods extra.
WINDMILLS-TANKS-STEEL TOWERS
8-ft. mills $29 up; 10-ft., $39 up; 12-ft., $65 up; 16-ft., $135.
New, Used Redwood Tanks Guaranteed.
1000 gal., $19.50; 2000, $28.50; 3000, $35; 5000, $48; 25,000, $125; 15,000, $95.
NEW, USED GALVANIZED TANKS.
Used 1000 gal., $28; 3000, $55; new 1000 galv., $42.50; 2000, $56.
SHALLOW SQUARE & OBLONG TANKS
RANCH MACHINERY.
10-ft. grain drill, $95; 4 row beet drills, $35 to $45; 3 and 4 gang disc plows, $95 to $125; bean, beet cultivators, $35; potato planters, $75; cider mill, $17.50; cable. Nearly new Bean spray outfit cost $75 for $35. Many other bargains. Trade tools you don't need for material you do or pay with Liberty Bonds. Also want to buy. Material guaranteed as represented or money refunded. DEMMITT CO., 120 No. Main, upstairs, Los Angeles.

Corn Harvester — One man, one horse one-row, self-gathering. Equal to a corn binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kansas.

CATTLE

50 REGISTERED SHORTHORN CATTLE
125 REGISTERED SHROPSHIRE SHEEP
45 REGISTERED BERKSHIRE HOGS.
10 SHETLAND PONIES.

AT PUBLIC AUCTION
SATURDAY, AUGUST 2, 1919

BUTTE CITY RANCH
Butte City, Glenn Co., California

This is a splendid offering from the herds and flocks of the noted Butte City Ranch, and buyers will find an extra good selection of registered animals of most approved breeding, excellent type, and good physical condition. Just the sort of animals to use for foundation stock. Catalog free on request to sale management—CALIFORNIA BREEDERS' SALES AND PEDIGREE CO., 211-212 Ochsner Bldg., Sacramento, California.

BUTTE CITY RANCH
SHORTHORN CATTLE, SHROPSHIRE SHEEP, BERKSHIRE HOGS, SHETLAND PONIES. Stock for sale at all times. Second Farm Sale—all breeds—August 2, 1919. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show Herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Elkhorn Farm Ayrshires — Choice registered young bulls at reasonable prices. J. H. Meyer, 440 Montgomery Street, San Francisco, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Ayshires—Registered Yearling Rob Roy bull. Farmer's price. Redwoods Ayrshire Farm, La Honda.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.
The Yellow Front. Established 1892
112-118 S. Los Angeles St. Los Angeles.

Sell Cheap One Owens 16x20 double cylinder bean thresher used only on 100 acre crop. Prentice Ranch, Escondido, California.

JACKS AND JENNETS

For Sale or will exchange for land fine bunch black registered Jacks and Jennets. No better bunch to be found in California. A. L. Allen, Perris, California.

FARM LOANS

PAY OFF THAT MORTGAGE.
PLENTY OF MONEY WITHOUT COMMISSION.
Loans made for 5 years at 6½ per cent. Pay off all or part at any time—will loan to build, house, put down well, or take up present encumbrance—make new arrangements while available. Write today for details. James Brown, 423 Hollingsworth Bldg., Los Angeles.

GOATS

For Sale—A few extra fine registered Toggenburg buck kids. Color and markings perfect. C. U. Widmer, Upland, California.

HOGS

CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rockwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, Calif.

POLAND-CHINA BARGAINS

BRED SOWS GILTS BOARS
In order to reduce our herd and to make room for young stuff we find it necessary to offer for immediate sale a choice lot of Poland-China sows, gilts, and boars. The offering represents as good blood lines as we could buy and has been nicely grown out. All are cholera immune. Prospective buyers should not overlook this opportunity. You will be surprised at the extremely reasonable prices we are quoting. Scrub hogs are not profitable. Our registered hogs are money makers. Write now for prices. Act quick. These hogs must be sold. AMERICAN HOG CO., 920-922 CROCKER BLDG., SAN FRANCISCO.

BERKSHIRES BERKSHIRES

ANCHORAGE QUALITY

We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

TWO SOWS AND A BOAR
$100 the trio.
Two sow pigs from ten raised, sired by Baron Duke 201st, 780-pound $1100 Grand National Champion, from Rival B. Princess, a prize winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion Boar from Symboleer Belle, and of Superbus blood lines; a boar from a litter of ten raised, big, long typy, stretchy pigs. Sandercock Land Co., In charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, California.

Billiken Chester Whites. Not many left now; one 1917 fall boar; one 1918 fall boar; both cholera immune. All pigs farrowed to date are booked for sale excepting 10 boar pigs. Have 10 sows yet to farrow during May, June and July; will book orders from these litters, delivery to be made when weaned. C. B. Cunningham, Mills, California.

Grape Wild Farm Berkshires—Guernseys —spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

For Sale—Registered Duroc-Jersey pigs, McKee Bros., Pilot Defender blood, owned by C. T. Thompson, Bishop, farrowed April 3rd, 1919. Very fine. For particulars and breeding, write: W. E. Detrick, Bishop, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best In the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

For Sale—Berkshire Sow Pigs and boar pigs from the best and most popular strain. Also a few choice open gilts. Lark Meadow Ranch, Geo. A. Stingle, El Monte, California.

Pathfinder and King's Col. Stock, Immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Have Sold All the Pigs advertised recently. Will have fine pigs from spring litters for sale in June. Fine Shropshire ram lambs, pure bred, for sale. J. J. Prendergast, Redlands, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

For Sale—Registered Duroc-Jersey Weanlings every month in the year. $15 each; 3 for $40. Satisfaction guaranteed. Red Rock Ranch, Glen Ellen, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Duroc-Jersey Swine For Sale, best blood lines. Bred sows and gilts, service boars. Jersey Queen Farm, San Jose, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Callstoga, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLETS CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

HOGS

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724, Sacramento, California.

POULTRY

Baby Chicks For Sale—250,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock. 25, $3.50; 50, $7.00; 100, $12.50. Special prices, 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition. No money in advance; pay on delivery. Shipped safely anywhere West of Rockies. Finest hatchery in the world. Established 1898. Must Hatch Incubator Company, 438 Seventh Street, Petaluma, California.

White Leghorns are the most profitable breed of poultry. If you are in the business for profit you will eventually have them. Early broilers; early payers; early PROFITS. We sell only WHITE LEGHORN BABY CHIX from heavy laying HOGAINZED hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

It's like groping in the dark to attempt raising poultry successfully without some knowledge of the business. Poultry for Profit tells you how to house, feed and raise chickens, ducks and turkeys successfully in California. It contains 225 pages with 18 pages of illustrations and bound in cloth $1.00 postpaid. Cultivator Publishing Co., 115 N. Broadway, Los Angeles, California.

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
It's our business to improve egg production for you. We have the stock planned for your success. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trapnested S. C. White Leghorns every day in the year since 1912. Box B 337, Inglewood, California.

Thoroughbred Barred P. Rocks, egg record 1917, 190 eggs per hen; 1918, 210 eggs per hen. Hatching eggs, $2.50 per 15 eggs. Chicks 30c each; 7 pullets May hatch, laid 12 dozen December, 10 dozen January. Call mornings or phone 5599. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

S. C. White Leghorn Chicks by the 100 or 1000 from Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet, 1st cockerel at Pacific Coast Land Show. Order your chicks for June 10th delivery. A. O. & P. M. Forster, 2916 Otis Street, Berkeley, California.

Baby Chicks From My Thoroughbred, heavy-laying strain of S. C. White Leghorns. Am booking orders now for July delivery at $12.00 per 100, $110.00 per 1000. Prices for August and September delivery on application. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

Baby Chicks, Special Prices—Reds, Rocks, Anconas, $15.00 per 100. McFarland strain White Leghorns, $12.00 per 100. Hatchings Saturday and Wednesday. A. G. Rowe, Inglewood, California.

Baby Chicks—Our large, bred to lay S. C. White Leghorn hens will produce the pullets that will bring in the dollars this winter. Tupman Poultry Farm, Ceres, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

Rhode Island Red Eggs for hatching. Phone 5R4. Mrs. Garden, Route 4, Box 235, Stockton, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

ENGINES

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

Gas Engine 6o H. P. Commercial also 8 inch horizontal pump used one day. Sell at bargain. Prentice Ranch, Escondido, California.

For Sale—20 Horse Gasoline Engine (Olds), perfect condition, with belt and pump; cheap for cash. H. M. King, Anaheim.

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 South Los Angeles Street, Los Angeles.

FARM LANDS FOR SALE

For Sale—To close estate, 11 acres fine alfalfa. Bid $28,000 offered. Open to higher bidder. See ranch on Central Avenue, 1½ miles from Burbank. Wm. A. Skinner, Admx., Magnolia Avenue, Burbank, J. C. Craig, Attorney for estate, 510 Exchange Bldg., Los Angeles.

$10 to $25 An Acre, Good Land, 160 acres and up, some improved, oak timber, watered by streams and springs, fine climate. W. W. Baldy, Raymond, California, Madera County.

For Sale — Imperial Valley's finest fruit and alfalfa farm for sale at a bargain. 160 acres. Earliest grapes and apricots in the United States. C. A. Myers, 1119 Haas Building, Los Angeles.

880 Acres mountain stock ranch, well watered and partially fenced. Government land adjoining which can be homesteaded. C. P. Gould, Southerland Apts., 334 East Ocean Avenue, Long Beach, California.

FARM LANDS FOR SALE

$35,000—61 acres located a short distance from Mountain View in a good location. There are 41 acres in alfalfa and 20 acres in tomatoes with a small family orchard. Improvements consist of a fine modern residence of 7 rooms, barn and a complete set of outbuildings. There is a first-class pumping plant on the property which furnishes an abundance of water for irrigation the year round. The place is fenced and cross fenced and divided off into several fields. Can be bought on terms.

$500 Per Acre—40 acres all in bearing alfalfa located in the rich Mountain View district, and divided into two fields, irrigation from pumping plant and artesian well. No buildings. Terms of payment can be arranged.

DAIRY AND ALFALFA LAND

$205 Per Acre, for 113 acres rich vegetable, dairy or alfalfa land; located near Mountain View, in a very good district; improvements consist of a 5-room ranch house, 3 barns, pumping plant and two flowing artesian wells. The property is fenced and cross fenced and divided off into six different fields; a remarkably cheap place, one-third cash required.

WILLIAM P. WRIGHT
Mountain View, Santa Clara Co., California.

300 Million Acres of "Free" Land in U. S. "The New Homeseeker" a 104 page book, WITH MAPS and ILLUSTRATIONS, showing millions of acres of vacant public homesteads, timber, mines or grazing lands. Founded on historical facts. DOES NOT MISLEAD. Read warnings "official," climinates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico, Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico. Describes water, soil and climatic conditions, all the principal U. S. land laws. A marvelous publication, just off the press. Call or mail us $2. Address "THE HOMESEEKER," 3rd floor Grant Bldg., Los Angeles, California.

For Sale—20 Acres Tulare County 10 acres 4-year-old late Valencias; 8 acres 1-year-old Washington navels; 2 acres left for building site and garden. Over 2000 feet cement pipe line with turnout at each tree row; 6 h.p. gas engine, 3-inch pump, making an up-to-date irrigation system. Small house, large garage and workshop, blacksmith outfit and all tools necessary for farm; tractor, plow and implements all go with ranch at $12,000.00. This place lies against the foothills, overlooking the entire valley. One of the beauty spots of California. Terms. ½ cash, balance to suit. H. H. ESHELMAN, Owner, P. O. Box 45, Soldier's Home, California.

344 ACRE STATE ROAD
MIDDLE WEST FARM, $5000

Splendid 10-room residence, steam heat, improvements, house alone estimated worth $7000, large barns, etc., near hustling R. R. town and only 8 miles large city. Productive loam tillage, stream-watered 50-cow pasture, wood, timber, apple orchard. Borders beautiful river, motor bus passes door. To settle now, low price $5000 gets all, only $1500 down, easy terms. Details page 78 Catalog Bargains 19 States, copy free. STROUT FARM AGENCY, 831 A. G. N. Y. Life Bldg., Kansas City.

400 Acres, run down ranch but a good one if developed. Price will astonish you. All fenced, 125 acres farming land, balance pasture, and timber land, old house, old barn, good water, well at house, and good spring at upper end of ranch, running sufficient water for all stock purposes. Quantities of wood. This a pick up in the way of ranches. S. P. R. R. Co. drilling oil well within 10 miles of this property. C. P. Gould, Southerland Apts., 334 East Ocean Ave., Long Beach, California.

Gilt-Edge Bearing Avocado Orchard of 2½ acres, adjacent to North Whittier Heights. Three-year trees, best winter varieties, Fuerte and Challenge. Frostless location, abundance artesian water, near two boulevards. An ideal home site, affording a commanding view of valley and mountains. Price reasonable, terms if desired. Address owner, A. B. Williams, Citizens Trust and Savings Bank, Los Angeles.

For Sale—The Prettiest 20 acre San Fernando Valley walnut grove you can imagine. All interset with Elberta peaches, interplanted in beans. Concrete irrigation system all installed. Right close to school, stores and the best buy you will see offered for some time. Only $12,000 with terms. H. L. ALLARD, 410 Security Bldg., Los Angelcs. Broadway 1696.

For sale Stock Ranch—4000 acres near San Bernardino, California. Land is level and excellent for alfalfa and stock. Several artesian wells. Price $300,000 including fine improvements and some stock now on ranch. Owner will consider some city property as part payment. Easy terms on balance. F. P. Turner, 119 East Colorado Street, Pasadena, California.

CITRUS LAND FOR SALE

You can buy citrus orchards at Escondido as well located, as productive, for one-half to two-thirds you must pay elsewhere. Why pay more? Walnut-land at $200 per acre. All kind of properties for sale. MOTTO: ALWAYS FOR LESS. Escondido Valley is the famous Sun Kist Vale. Theron J. Smith, Real Estate, Escondido, California.

Mountain Ranch—334 Acres, 90 acres under cultivation, 30 acres Bearing Orchard, balance in Timber, Oak and Pine. Free Water, deep, rich soil, eight-room house, 100 tons hay, barn and out buildings. Will subdivide. Price $7500. Terms. Address, Paradise Ranchita, P. O. Box 123, Paradise, Butte County, California.

For Sale—Forty Acres bearing apricots and peaches, adjoining city of Hemet. This is first class stuff, highly improved, piped and water stocked. Present crop estimated over $10,000. Price, including crop, implements, trays, etc., $1100 per acre. Easy terms. H. M. King, Anaheim, California. Phone 324W.

To Be Sold at Once—This 14-acre grove of full bearing Valencias, located right at Anaheim city limits, with 6-room bungalow; private pumping plant, piping, gas, etc., $2300.00 per acre, easy terms. Is certainly a bargain, having every advantage, and underpriced. Apply to H. M. King, Anaheim.

SHEEP

Sheep For Sale—500 ewes with lambs by side. Have rented my ranch and want to sell. A good buy for a small place. John M. Cox, R. F. D. No. 1, Box 160, Brawley, California.

DOGS

Collie Dogs For Herding, cattle, sheep and turkeys. John G. Mee, breeder of Bronze turkeys and Embden geese. St. Helena, California.

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Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the suiface.

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10-in. and 12-In.
Low Capacity Pumps
Particularly Recommended For
Orchard Service
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Ask for Folder No. 30.

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Try COULSON'S EGG FOOD
FOR GREATER EGG PRODUCTION
FULL PARTICULARS IN FREE BOOK
"CHICKENS FROM SHELL TO MARKET"
Coulson Co.
PETALUMA, CAL

Figures That Tell the Truth

By Jean A. Koethen

HOW many poultry people, outside a very few of the largest commercial producers, know what it costs to produce a dozen eggs? How many know how many eggs a hen can reasonably be expected to lay in a year, how many in the month of March, how many in December? How many know the average price they ought to receive for their eggs in order to break even or a little better, what it costs to feed a hen for a month, how much feed she will consume in that time, how much more it costs to produce a dozen eggs in October than in April?

These are the sort of questions producers and manufacturers in every other line of business feel obliged to answer before they put a price on the article they produce. It is only agriculturists in general and poultry farmers in particular who are satisfied to put what comes in into one pocket and what goes out into another and trust to luck for the proper balance, but they are not quite as well satisfied as they used to be.

To say that there has been an awakening among agricultural producers the past two or three years is stating the case very mildly. The producer of food has suddenly come to realize his immense importance in the world and is demanding that the world pay him, as it pays other producers, a comfortable living. Too long has an unthinking public paid what it pleased for eggs, and an unmethodical poultryman accepted less than his produce cost. Perhaps if he had known exactly what a dozen eggs did cost he would not have been quite so willing to sell at a loss. At any rate, he did not know, and it was only when he was forced to study cost of production or go under that he began to face the simple, basic facts which underlie business success.

It was because I had asked these questions a good many times without receiving an answer that I was delighted to see on the wall of the Poultry Producers' office in Los Angeles a statistical chart "analyzing and comparing known factors and assumed grand average factors" relating to the commercial egg industry in Southern California. Such figures as those on this chart are necessarily only averages. The personal factor does not enter into them. But they have the great advantage of being worked out from observations made, not on a single flock, but on several hundred thousand hens, and while they will not fit every flock exactly, they will fit it approximately. Figures are dry things at the best, and they never tell quite the whole truth, but they do give a solid foundation on which to build, and dry as they are, I believe we may study them with great profit.

Cost of a Dozen Eggs

What does it cost to produce a dozen eggs? Not as much in April as in November, we should all answer offhand. Not because a hen eats less in April, but because three hens are laying in April for one that lays in November, and they must all be fed alike whether they lay or not. The cost of a dozen eggs is a factor that shifts from year to year and from month to month.

The figures on this chart, which was prepared by F. D. Cornell, cover the year from January, 1915, to December, 1918. In January, 1915, it cost 36 cents to produce a dozen eggs; in December of the same year it cost 79.4 cents. In 1916 cost of production was a little less the first three months than in January, February and March of 1915, but during the fall it ran higher, reaching a climax at 96 cents in November. In 1917 feed prices took a sudden jump and the cost of a dozen eggs ranged from 40 cents in January down to 22 cents in March and then steadily up to $1.04 in November. A comparison of the cost of production for the different months of 1918 with the prices eggs were bringing in the Los Angeles market will be of interest:

Cost of Dozen Eggs and Price Received

	Cost	Sale Price
January	46.4	54
February	36.2	42.5
March	27	38.58
April	24.78	38
May	26.4	38.14
June	32.4	38.9
July	33.36	45.55
August	42.5	50.91
September	55 94	57.9
October	85.56	68.52
November	101.04	74.48
December	57.12	71.88

Fortunately the market value of eggs was considerably higher in 1918 than in any previous year, and this year for the first time the producer made a net gain instead of a net loss. In 1915 the average market price of eggs was 28.97 cents; in 1916, 31.20 cents; in 1917, 35 cents, and in 1918 it ran up to the previously unheard-of average of 51.61 cents. If cost of production was high, the average market value was so much better that producers were immensely encouraged. Nevertheless, unheard-of as that average was, it was not quite high enough to produce the ten cents a dozen profit which seems reasonable under the circumstances.

Ten cents a dozen profit on the eggs he produces would mean an average profit of about 20 per cent to the producer, which is little enough compared with the profits received in mercantile pursuits. Now last year in order to make this ten cents a dozen, the price should have averaged 53.74 cents, instead of the actual average of 51.61 cents. In 1917 the average of the Los Angeles market was 35.06 cents, while the necessary average to produce ten cents profit was 46.3 cents. In 1915 and 1916 the difference between what the poultryman should have received and what he did receive was about the same. This year it may be that organization and a strong demand will bring the price up to where it belongs.

(Continued next week.

POULTRYMAN'S CALENDAR—JULY, THE FIRST CULLING MONTH

While the color test for high production cannot be applied till later, many poor producers can be culled out in July.

Cull out the hens that are already molting and those that have ceased production without any visible reason.

Cull out the yearlings that have made a poor trapnest record.

Cull out the backward pullets and send them to market with the cockerels.

Cull out all sickly looking hens and those that sit in a corner, those that go early to roost and are out late in the morning.

Cull out the older hens unless you are sure they were profitable last year and have some reason for expecting continued profit.

Cull out all the male birds but those you must keep. They will be only boarders for six months.

Get rid of everything that is of doubtful value, for feed is money.

POULTRY PRODUCERS OF CENTRAL CALIFORNIA CHOOSE NEW MANAGER

The poultry producers of Central California announce the appointment of Charles E. House as sales manager for the association. It is stated that the growth of the business both in amount and in detail has made this assistance to the management necessary, and that Mr. House has a thorough knowledge of the egg business based on wide experience with some of the best firms in the business.

Puckeriness isn't tea-taste; it's tannin-taste. Tannin is what they tan leather with.

You don't want that? Then pay enough per pound for your tea to get the real tea-flavor—⅓ cent per cup.

Schilling Tea is the fine practical economical tea of this country.

There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

I HAVE BEEN SELECTED BY THE LEAGUE OF HOUSEWIVES AS THE "HOUSEHOLD SENTINEL" I AM KELLOGG'S ANT PASTE I MAKE ANTS DISAPPEAR

25¢ AT ALL DRUGGISTS

REMEMBER THE HORSE-SHOE TREAD

PACIFIC RUBBER CO LOS ANGELES

When Writing Advertisers, Mention The Cultivator.

Household Department

DOWN TO HIS JOB

When Robinson Crusoe was wrecked all alone,
On an island far out in the sea,
He didn't sit down on the sands with a groan
And murmur, "Poor, unlucky me!"
He started to work right away with a will,
And builded the first bungalow;
And he fashioned some tools and so managed to till
Some ground that a garden might grow.

Whatever he needed he made for himself
From things that were lying at hand—
Umbrellas or shoes or a head bumping shelf
For the winter preserves he had canned.
Some people, thus stranded, would lie down and sob,
And presently perish, no doubt.
'Twas the way Mr. Crusoe got down to his job
That made him worth writing about.
—New York Times.

SINGING HELPS THE WORK ALONG

OF course, the poets and writers of light opera are all wrong when they try to make out that farming is a business wherein the jovial harvesters join hands with the merry villagers and dance around a Maypole singing roundelays. They are taking too literally Shakespeare's observation that "All the world's a stage." There is something about routing out the cows in the morning before sunup, and something about piloting a plow through heavy soil and salty sweat, that does not conduce to song.

But there are farm songs, and farming songs. The country heard a lot of them last fall when volunteers went out from the cities to help meet the situation created by heavy yields and few harvesters. Most of that singing was done on the way to and from the fields, hut it was pretty good singing, anyway. And there are songs heard mostly at farm bureau meetings and the like. All that is necessary to prove that farmers can sing when they want to is to hear a dozen or a hundred of them join in this, using the tune of "Old Black Joe":

Gone are the days when my farm returned no pay,
Gone are the folks who used to call me "Jay",
Gone are my debts for the better crops I grow,
I hear my neighbors voices calling, "Farm Bureau."

Then listen to this deep-throated chorus:

I'm coming, I'm coming, for my hank is full of dough,
I hear my neighhors' voices calling, "Farm Bureau."

Youth, however, is the springtime of life, and springtime is the season when the human family, and the birds and the locusts and the organ grinders, seem most disposed to make a more or less harmonious noise. Therefore, it is among the farm youth in the springtime of life that you will find the most singing of and at their daily tasks. The boys' and girls' cluhs, organized under the direction of the United States department of agriculturc and the state agricultural colleges, have more songs than you can shake a stick at. And how they can sing 'em!

Here Come the Club Members.

Imagine that you are sitting in the shade of an old apple tree in the green fields of Virginia or Maryland, my Maryland, or some place like that. Down the road comes a bunch of garden cluh boys and girls, with spades and rakes on their shoulders and the light of achievement in their eyes. They are singing, and the strains are the same as in that "Over There" song that went from Broadway to Chateau-Thierry and hack again. Listen:

Johnnie, get your hoe, get your hoe, get your hoe;
Mary, dig your row, dig your row, dig your row.
Down to business, girls and boys,
Learn to know the gardener's joys.
Uncle Sam's in need—pull the weed, plant a seed,
While the sunheams lurk, do not shirk, get to work.
All the lads must spade the ground;
All the girls must hustle 'round!

All together in the chorus:

Over there, over there;
Send a word, send a word, over there,
That the lads are hoeing, the girls are sowing,
The crops are growing everywhere.
Each a garden must prepare;
Do your hit, so that all of us can share
With the boys, with the hoys
Who will not come hack 'till its over, over there!

Their fresh young voices—ah, if all vegetahles were as fresh—die away in the distance. But from over the hill another group of hoys approaches. You know they are pig cluh boys, for to the tune of "Row, Row, Row Your Boat" they are singing—

Grow, grow, grow a pig
Fatter every day.
Merrily, merrily, cheerily, cheerily;
Half our work is play.

And here come some rosy-cheeked girls, all dressed up in white aprons and snowy caps, and everything—they catch what the boys are singing, and they reply:

Can, can, all you can;
Can and put it away.
Merrily, merrily, cheerily, cheerily;
Half our work is play.

Close hehind then are some sewing club girls and now they are singing:

Sew, sew, sew a seam;
Sew the time away.
Merrily, merrily, cheerily, cheerily;
Half our work is play.

And over in that field, can those children be the Little Bo-Peeps and Little Boy Blues of to-day?

They're Real Children.

No; nothing Mother Goose-like ahout them; nothing but the sheep—and their song:

Little Bo-Peep,
Come raise some sheep;
And you do it, too,
Little Boy Blue.

So it goes, with you in the shade of the old apple tree, listening to the club hoys and the cluh girls as they tell in song the merits of their respective avocations. And then, just like in a show, they all troop hack again, and, like the grand chorus, in an opera, to a tune you recognize, this arises:

There were cluh hoys on the hillside,
There were cluh boys on the plain,
And the country found them ready
At the call for meat and grain.
Let none forget their service
As the cluh hoys pass along,
For, although the war is over,
They are singing still this song.

The chorus comes like a cataract:

Keep the home cow milking,
And the cluh corn silking;
Tell the idle hoys and girls
To work for Home.
There's a cluh pig growing,
While the grain we're sowing—
Boost the cluh work night and day
Till we "Live at Home."

WHAT TO DO WITH GRAPES

The preserving of grapes will not he a prohlem for some time yet, hut time flies, you know, so save these recipes for use when the grapes are ready, for they won't wait any better than other fruits. They demand attention in their own good time, not yours.

Grape Jelly

The grapes should not he too ripe; they ought to look only half colored. Pick off the stems and put them in a porcelain lined kettle, harely cover with water, and let them simmer until until they are tender and falling to pieces. Strain through a colander and then put the juice through a flannel hag which has heen wrung out in hot watcr;. press them only lightly. Measure this juice, and to each pint allow one pound of sugar. Put the juice on the fire in a clean kettle and boil 20 minutes, skimming occasionally; meanwhile have the sugar heating in the oven. When the time is up, throw in the sugar and stir until this is dissolved; then let it boil up for 20 minutes and it will be done. If the grapes are fully ripe and sugary, it need boil up only once, and it will jelly on the cup as you dip it out. If you wish to have the jelly extra clear and beautiful, you can have ready a flannel bag and strain it through that directly into the glasses.

Grape Juice

Select fine grapes, not over ripe, stem them and put them into a kettle with water just covcring the bottom to prevent burning. Bring them slowly to the boiling point, stirring

VAILE-KIMES WATER SUPPLY SYSTEMS

When you buy a water supply system, don't buy a cheap assembled makeshift. A V&K Water Supply System will pay for itself in a short time. A cheap system is a constant expense, a constant bother and disappointment and, in the end, is much more expensive than a V&K would be.

MAKE YOUR HOME MODERN

You should have a first class water supply system. It will make your home modern. It will make it a fine place for you and your family to live. It will save you hours of time and will add years to your life, and the lives of your wife and children. Health and happiness come with it.

Write now for the V&K book that tells all about water supply systems. It will help you in choosing one for your home and your work.

Sign and mail the coupon.

THE VAILE-KIMES CO.
Dayton, Ohio

SEND FOR THE BOOK

The Vaile-Kimes Company,
Dept R-2 Dayton, O.
Gentlemen:—
Please send me without obligation a copy of your book, "The Modern Way."

Name.....
Address.....

Save 1-2 on Fuel

CHEAPEST HEAT YOU CAN BUY

The Sievert Oil Burner burns distillate costing only 7½ cents per gallon in cook stoves, heaters, furnaces, pasteurizers, boilers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes, address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

BIG CUT IN ENGINE PRICES
KEROSENE — GASOLINE

2 to 30 H-P.
Immediate Shipment

Stationary, Portable or Saw-Rig—all at greatly reduced prices. Best Engine—longest record—strongest guarantee. Choose your own terms. No cut in quality, but a big cut in price for quick action. Write for new cut-price catalog—FREE, postpaid—ED. H. WITTE, Pres.

WITTE ENGINE WORKS
3107 Oakland Avenue, Kansas City, Mo.
3107 Empire Building, Pittsburgh, Pa.

DAISY FLY KILLER PLACED ANYWHERE ATTRACTS AND KILLS ALL FLIES. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 5 by EXPRESS, prepaid, $1.25.

HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

$35 to $165

2 and 4-wheeled AUTO WRECKERS
1450 Central Ave, Los Angeles

occasionally. As soon as they begin to bubble, take them off, put them into a cheesecloth bag and hang this up overnight with a clean kettle below to catch the juice. In the morning squeeze the bag a very little with the hands and strain the juice through a flannel bag. Sweeten to taste, put on the fire and slowly bring the juice to a boil, skimming frequently. As soon as it is perfectly clear, put it into sterilized bottles with clean, long corks and seal with wax.

Spiced Grapes

(Especially nice with meats.) Press the grapes from their skins and put the grapes through a colander to remove the seeds; then mix the pulps and skins and measure, taking five pounds of fruit and four of sugar, with a tablespoon of powdered cinnamon, a teaspoon of powdered cloves and a pint of vinegar. Boil slowly for three hours, put in sterilized glasses and cover with paraffin.

Grape Conserve

Prepare five pounds of grapes as before, taking off the skins, removing the stones and mixing pulp and skins together. Then add an equal amount of sugar and the pulp of five oranges and two pounds of seeded raisins. Mix all thoroughly.

FIG RECIPES

The most complete treatment of the preparation of figs we have seen is in a little book of 80 pages issued by the J. C. Forkner Fig Gardens. Figs fresh, figs dried, figs canned, preserved or prepared in any other way are treated in this booklet. We believe it will be sent to readers without cost if the Cultivator is mentioned.

ON HER BEAM ENDS

When the war put its tremendous demand on American shipping there were a great many freighters in service on the Great Lakes that were well suited to carry supplies across the Atlantic. Some of them, however, seemed to be permanently cut off from salt water because they were too long to pass through the locks of the Welland Canal. But American ingenuity was equal to the test. Working under the direction of F. A. Eustis, the engineers of the shipping board cut the vessels in two and floated them, one-half at a time through the locks of the waterway.

The huge freighter, Charles R. Van Hise, presented an even more difficult problem, for she was not only much too long to pass through the locks but also six feet too wide. But again the engineers did not fail. They resolved to turn the two halves of the Van Hise on their sides; it would be a tight squeeze, for the clearance would be only eight inches. Their method of rolling the nine-thousand-ton vessel on her side was as simple as it was effective. According to the Scientific American, they built a series of big tanks on what was intended to become the under side of each half of the ship and pumped them full of water. The calculations were well made, and the capacity of the tanks proved sufficient to capsize the sections, which rolled gently over on their sides just five hours after the pumps were started. After the passage, the sections were rolled back by attaching similar tanks to appropriate points along the exposed keel. —Youth's Companion.

SAVE MUCH FOOD IN CLUBS

Clubs for colored girls have been organized in all Southern states by the department of agriculture and the state colleges. In these clubs there were 50,995 girls last year. The colored club members have the same four year course which is given the white girls, and are taught gardening, canning, preserving, poultry work, sewing, breadmaking, cooking, and the making of special products. In the 15 Southern states the colored girls in 1918 put up from their own garden plots canned products worth $70,933.80 and dried 49,134 pounds of vegetables and 424,168 pounds of fruit, valued at $94,941.40. Besides the products grown by themselves they conserved $46,100.45 worth of fruit and fruit products. The value of all the food products they conserved in 1918 was $241,401.85.

TWENTY YEARS AGO

Nobody swatted a fly.
Nobody had appendicitis.
Nobody wore white shoes.
Everybody spit on the blacking.
Cream was five cents a pint.
Cantaloupes were muskmelons.
Milkshake was a favorite drink.
Advertisers did not tell the truth.
You never heard of a "tin Lizzie."
Doctors wanted to see your tongue.
The hired girl drew one fifty a week.
Farmers drove to town for their mail.
Nobody "listened in" on a telephone.
Everybody didn't tip nobody.
Folks said pneumatic tires were a joke.
A solemn agreement did not become a scrap of paper.
Mother spent part of the morning cleaning the lamp chimneys.
Nobody ate dinner in Newfoundland and breakfast next morning in Ireland.
Nobody cared for the price of gasoline.
The butcher "threw in" a chunk of liver.
Strawstacks were burned instead of baled.
Jules Verne was the only convert to the submarine.
You stuck tubes in your ears to hear a phonograph and it cost a dime.
You could drop a nickel in the slot and see a movie "as through a picket fence—darkly."
Some in the back country occasionally snuffed the candle.
We sang "Captain Jinks of the Horse Marines" and "Will You Love Me, Mollie Darling?"
Them wuz the days.

Mud stains that will not vanish with a usual washing should be washed in cold water then soaked for five minutes in oxalic acid solution. This is the solution we keep on hand for removing fruit stains from our hands. Get the crystals from the druggist and add the water yourself. Guard it carefully.

The curtains that are old or thin should be folded carefully before putting to soak, and kept folded throughout the washing and starching. Also, instead of stretching, fold, exactly in the middle, over a sheet on the line and carefully pull the scallops into place.

Pastry flour has a higher percentage of starch than common flour. If you have not the pastry flour and your recipe calls for it, one-third constarch and two-thirds ordinary flour will make it all right.

Genuine kindheartedness and helpfulness needs no self advertising.

Tractor Use, Profit, and Safety

TRUE progress is always slow. The change to mechanical power for farm work has been twelve years in the making, but today there are few American farmers who have not given serious thought to the question of tractorizing their farms.

For the benefit of those who may not yet be convinced that the tractor is a useful, profitable farm power machine, we present again a few of the opinions of farmers who are using the International Kerosene Tractor. Some of these are about essential features, and some mention only conveniences, but taking them altogether, almost any farmer will feel, after reading them, that the International 8-16 is a tractor worth considering.

"My International supplies a power flexible enough to handle the large amount of seedbed, harvest and other work without delay."

"It can be used for continuous work if emergency demands it."

"It produces power at much lower cost than horses, and it can be used for both drawbar and belt work."

"I like the steady way it works. Without seeming to hurry, it gets through a surprising amount of hard work."

"It does a lot of good work at a cost so low I could hardly believe it. You did a wonderful thing for Eastern farmers when you made this tractor to run on kerosene."

"It is not bothered by flies, nor by bumble bees. It works steadily on the hottest days."

"Requires very little care. When the day's work is done, I run the tractor tail first into an inexpensive shed. In the morning, I fill the fuel tank and the oiler, look into the radiator, and am ready for another day's work."

These opinions are typical. They prove at least that the International 8-16 is a useful, profitable tractor. Now consider just one other thought for a minute.

This tractor is the outgrowth of twelve years of active tractor experience by a company that has sold all kinds of farm machines for many years. The beginning of this business goes back to 1831—almost 88 years ago. Does it not seem reasonable that with this experience we should offer you a tractor that you could use with profit, especially when we expect to come back some day and sell you more of the machines listed in this advertisement?

If you are now convinced that the International 8-16 is a useful, profitable tractor on some farms, and that you don't have to be an expert to buy one safely, write us to find out what this tractor will do for you, on your farm. A post card will bring you full information.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders Push Binders
Headers Rice Binders
Harvester-Threshers
Reapers Shockers
Threshers

Tillage Implements
Disk Harrows Cultivators
Tractor Harrows
Spring-Tooth Harrows
Peg-Tooth Harrows
Orchard Harrows

Planting & Seeding Machines
Corn Planters Corn Drills
Grain Drills
Broadcast Seeders
Alfalfa & Grass Seed Drills
Fertilizer & Lime Sowers

Haying Machines
Mowers Tedders
Side Delivery Rakes
Loaders (All Types)
Rakes
Combination Side Rakes and Tedders
Sweep Rakes Stackers
Combination Sweep Rakes and Stackers
Baling Presses
Bunchers

Belt Machines
Ensilage Cutters
Huskers and Shredders
Corn Shellers Threshers
Hay Presses
Stone Burr Mills

Belt Machines—Cont.
Cream Separators
Feed Grinders

Power Machines
Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines
Planters Drills
Cultivators
Motor Cultivators
Binders Pickers
Ensilage Cutters
Shellers
Huskers and Shredders

Dairy Equipment
Cream Separators (Hand)
Cream Separators (Belted)
Kerosene Engines
Gasoline Engines
Motor Trucks

Other Farm Equipment
Manure Spreaders
Straw Spreading Attach.
Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
Tractor Hitches
Binder Twine

International Harvester Company of America
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Agents for Full International Lines

118-120 N. Los Angeles St.
Los Angeles, Cal.

Heider

11 Years Actual Field Work

For eleven years America's leading power farmers have used the Heider in every kind of tractor work. Heider principles have been tested by time and found to be absolutely correct.

No Gears to Strip

With the Heider Drive the power is taken directly from the flywheel by two large metal discs at either side—one to go ahead, the other for reverse. No jerking, no vibration, no gears to strip. Tractor always in "mesh." Seven speeds forward and reverse, all with one motor speed and one lever for traction or belt.

MODEL D 9-16
With Rock Island No. 9 Power Lift Plow Attached. One-Man Outfit.

15 to 20% Fewer Parts

The fewer the parts through which the power has to travel, the more power delivered at drawbar or belt. Heider Tractor's simple construction does away with 15 to 20 per cent of parts. It does away with clutch, transmission gears and bevel gears. This leaves the maximum power for pulling plows and harrows, for hauling loads, for every farm job—with less fuel and less upkeep expense.

Two sizes, 12-20 and 9-16. Send for catalog of Heider Tractors and Rock Island Tractor Tools; the famous Rock Island Tractor Plows, 2, 3, or 4 C T X bottoms, and the Rock Island one-man Tractor Disc.

ROCK ISLAND NO. 38
One-Man Tractor Disc Harrow. Operated from Tractor Cab.

E. P. Bosbyshell Co.
125 N. Los Angeles St., Los Angeles, Cal.
Manufactured by
Rock Island Plow Co., Rock Island, Ill.

Model C
12-20 H. P.

Tractor *and* Truck

For the Price of One

The Wheat Tractor

The WHEAT TRACTOR handles three 14-inch plow bottoms under all normal conditions. It will furnish power for any hay baler or silo filler, also plenty of power for a medium sized grain separator, with weigher, wind stacker and self feeder. As it is equipped with a governor like a stationary engine, the WHEAT TRACTOR will furnish steady power for pumping water, running an ensilage cutter or doing any similar farm work.

With the WHEAT TRACTOR'S interchangeable road wheel attachment it can be converted in less than an hour into a road truck with rubber tired wheels and will do anything that a 3500 pound truck will do with trailers.

Write for descriptive printed matter. Some good territory still open for dealers.

The Hession Sales Corporation

California Distributors
235 South Los Angeles St. Los Angeles

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency." Tells You Why.
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WE WANT

Hay, Grain, Potatoes
Cheese, Butter, Eggs
Poultry, Wool, Beans, Honey
and other Farm Produce
Let Us Handle Your Shipments
Quick Sales Prompt Remittance

W. C. Price & Co. 244 Clay St., San Francisco

When writing advertisers, mention The Cultivator.

Los Angeles Markets

Los Angeles, July 2, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price, 55 lb.; prices to retail merchants in 1-lb. squares, 55@56.

EGGS

Fresh extras, Produce Exchange closing price 51 doz., price to retail merchants, 54 doz.; case count, Produce Exchange closing price, 49 doz.; price to retail merchants, 51 doz.; pullets, Produce Exchange closing price, 44 doz.; price to retail merchants, 46.

POULTRY

Prices to producers: Hens, 25@33; broilers, 25@28; fryers, 32; roasters, 35; old roosters, 14; capons, 42; ducks, 23; ducklings, 25@27; geese, 25; turkeys, 34@40; squabs, 45.

Belgian hares, 14.

POTATOES AND ONIONS

Potatoes: Market steady. Stockton, Burbanks, sacked per 100 lbs., 2.25@2.50. Idaho, Russets, resorted 2.25@2.50. New stock, homegrown White Rose, 70@85 per lug box. Sacked per 100 lbs., No. 1 grade 2.25@2.40; No. 2 grade 1.75@2.00.

Carlots: Hauling moderate, market dull, little change in prices. Demand and movement slow. Carloads f. o. b. usual terms: White Rose, 1.60@1.75, decking and icing extra.

Onions: Demand and movement moderate. Homegrown, green onions, 35 per doz. small bunches. Crystal Wax, 1.50@1.75 per lug box. Stockton, yellow varieties 5.00-5.50 per cwt.; Red Wethersfield mostly 5.50. Italian Reds, mostly 4.50.

July 1, by Los Angeles wholesalers in

VEGETABLES

These are the actual prices obtained June 24, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Asparagus: Northern, green, local fancy, 14@15; fancy, 10@11.

Beans: Kentucky Wonder, best, 4@6.

Beets, doz., bunches, 40.

Carrots, doz., 35@40.

Cucumbers, Signal Hill, flat cr., 60@70.

Celery: Local, best, 1.00 per doz. bunches. Poorer low as 50. Crates, best, 4.50@5.00.

Corn, sweet, doz., 1.25.

Eggplant, local lb., 8@9.

Lettuce: Sales to retailers, best lettuce in cabbage crates, 75@85.

Parsley, doz., 15.

Radishes: Round Red 15@20 per dozen bunches. Long White, 30@35 per dozen bunches. Long Red 20 per dozen bunches.

Rhubarb: Local Giant Cherry, 1.25@1.50 per packed box. Strawberry, fancy 1.00@1.35 apple box.

Spinach, doz., 20.

Squash: Local summer, lug 60@75.

Tomatoes: Coachella and Imperial Valleys, 4 basket crates, fancy, best, 1.75@2.00; poorer stock 1.00 up. Cold storage 1.00@1.50. Local, best 1.75; poorer 1.10@1.25.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained July 1, by Los Angeles wholesalers in restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: New crop, Watsonville, White Astrachans, 3.50@3.75 per wrapped box.

Apricots: Bul, 5@6; lug 1.25@1.50.

Blackberries: Cr., 2.75@3.00.

Cantaloupes: Demand and movement good. Jumbos, green meats mostly 3.00. Standards wrapped and unwrapped, best, 2.65@2.75. Ponys, best 2.25@2.50. Flats 1.00@1.10. Poorer stock considerably less. Honey Dews, standard crates 1.50@1.75.

Cherries: Beaumont and northern district Royal Annes, best, 15@16; poor low as 10. Black Republicans, poor quality and condition 12@15. Windsors, poor quality and condition, 12@13.

Figs, per 10 lb bx, 1.75@2.00.

Gooseberries, 11@12 lb.

Grapes: Imperial and Coachella Valley Thompson Seedless 10@12 lb; Sweetwaters 8@10 lb.

Loganberries: 3.50@4.00 per cr. of 30 baskets.

Raspberries, cr., 3.00@3.50.

Peaches: Demand and movement good. Locals various varieties 6@8 lb.; lug boxes, 1.50@1.75. Sacramento district Red Birds mostly 3.00 per lug.

Pineapple, lb., 13@15.

Plums: Demand and movement good. Climax 4½@5½ lb. Santa Rosas, 8@9 lb; Simoni, 8@9 lb.

Strawberries, cr., 2.50@4.25.

Watermelons; Imp., lb., 2@2¼.

Brawley: Haulings increasing. Quality and condition good. Carloads f. o. b. usual terms. Excell, bulk per ton 19.00@20.00; Angelenos, 18.00@19.00.

Lemons: Fancy packed, 6.00@6.50; local pack, 4.00@5.00; loose, some tree ripe, 3.00@4.00.

Oranges: Valencias, medium fancy, 4.75@5.00; local pack, 2.50@4.00.

Grapefruit: Local fancy, 2.50@4.00 bx.; poorer, 1.50.

GRAIN

Prices on local Grain Exchange, carlots:

Egyptian corn, 3.10.

Milo maize, 2.85@2.86¼.

Barley, 3.00.

Corn, sacked No. 2 Yellow, 3.40; No. 3 Yellow, 3.33¾.

Wheat, 40.00@42.00.

San Francisco Markets

San Francisco, July 1, 1919.

BUTTER

Dairy Exchange quotations, lb.:

Extras	53
Prime Firsts	53
Extras	53½
Pullets	44½

POULTRY

Hens, 28@32; roosters young, 36@43, old, 20@23½; broilers, 31@33; fryers, 30@35; squabs, 2.50@4.00 doz.; ducks and and geese, 25@28.

Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Western Meat Company prices:

Cattle — Grass steers, No. 1, weighing 1000 to 1200 lbs., 10½@10¾; do, 1200 to 1400, 10½@10¾; do, second quality, 9@9¼; do, thin, 5@7.

Cows and Heifers—No. 1, 8@8¼; second quality, 7@7½; common to thin, 4@5½.

Calves—Light weight, 12@12½; medium, 11@11½; heavy, 8@9.

Lambs—Yearlings, 10@10½; milk, 13@13½.

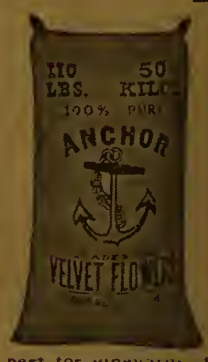
Sheep—Wethers, 9¾@10; ewes, 7½@8.

Hogs—Hard, grain-fed, 100 to 150 lbs., 18; do, 150 to 250 lbs., 18½; do, 250 to 300 lbs., 18; do, 300 to 400 lbs., 17½.

POTATOES

Supplies liberal. Old — demand and movement slow, market steady, little change in prices. Quality and condition wide range. Sales to jobbers: California,

Sulphur



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

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For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR 100 per cent pure. This has increased various crops up to 500 per cent.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc.

And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 DEGREES BE., Sulphur Paste, Nicotine, Blackleaf 40, etc, Fungicides and Insecticides.

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Please state for what purpose you use the sulphur, quantity needed, and date of shipment preferred. Telephone Kearny 871.

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Analysis: Nitrogen 5.00%; Phosphoric Acid 7.00%; Potash 1.00%

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Analysis: Nitrogen 3.00%; Phosphoric Acid 7.00%; Potash 1.00%

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Southern California Fertilizer Co., Inc.

511 Kerckhoff Bldg., Los Angeles
Broadway 1381 Telephone Home 60329

Oregon and Idaho, long whites and round whites 2.00@2.25. New — demand and movement moderate. Quality and condition wide range, market steady, little change in prices. Street sales: Garnets and whites, best 3@3¼.

ONIONS

Onions: Per ctl.: Reds, 3.85@4.00, at dock; yellow, 3.50@4.00; Bermudas, Crystal wax, 3.75@4.00; yellow, 3.50@3.75; green, 2.00 box.

VEGETABLES

Wholesale selling price:
Artichokes, doz., 15@40.
Asparagus, lb., 6@11.
Beans, String, 8@11; Wax, 7@10; Pole, 7@9; Limas, 10@12½.
Cabbage, doz., 50@1.00.
Celery, cr. of 5 doz., 3.50.
Cucumbers: Large box, 2.50@3.25; flats, 1.25@1.50; Los Angeles, lug, 2.50@3.75.
Corn, doz., 30@40.
Eggplant, southern, fy., 6@12½.
Lettuce: Cr., 50@1.25.
Okra, green, lb., 6@8.
Peppers, Bell, lb., 5@10; Chili, 7@11.
Peas, lb., 7@10.
Rhubarb, Strawberry, bx., 1.25@1.75; Mammoth, 1.75@2.25.
Spinach, 75@1.25.
Squash: Summer, cr., 40@75; Italian, box, 75.
Tomatoes, Mexican, crate, 1.50@2.00; Imperial, 75@1.00; Merced, 75@1.00.

CITRUS

Wholesale selling price:
Per bx: Lemons, 5.00@7.00; lemonettes, 3.50; grapefruit, 2.50@5.00; oranges, 3.50@5.00.

FRESH FRUITS

Wholesale selling price:
Apples: Newton Pippins, 2.25@3.00; Red Astrachans bx., 1.25@1.75; Gravensteins, 3.00; Crabapples, 20 lb. bx., 75.
Apricots: Winters, 85@1.00; loose 5@7, Royal, 6.
Bananas, 6@7½.
Blackberries, crest, 10.00@12.50.
Cantaloupes: Supplies moderate. Four California arrived. Demand and movement good, some soft, market firm, prices higher. Street sales—green meats, wrapped and unwrapped, stands. 3.00@3.25, ponys 2.50@2.75, flats 1.00@1.25, soft stock lower.
Cherries, 1.00@1.25 per tray and drawer; Anne, 8@13.
Currants, chest, 10.00@13.00.
Figs, 75@1.00 bx.; Brunswick, 75@1.00; whites, 75@1.00, 30 lb. bx.
Grapes—Thompson seedless, 2.50@3.00 per box of 25 lbs.: Malaga, 2.00@2.50 L. A. lug.
Gooseberries, ch., 9.00; lb., 6@8.
Loganberries, ch., 6.00@10.00.
Loquats, 6@8.
Peaches: Sacramento, 50@65 cr.; bx., 40@1.00.
Pears, lb., 5.
Plums: Cherry, 85@1.00; Clyman, 1.00@1.50; Simoni, 1.00@1.50; Santa Rosa, 2.00@2.25.
Pineapples, doz., 2.00@5.00.
Raspberries, cr., Los Angeles, 2.00@2.50; chest, 10.00@15.00.
Strawberries: Chest, 12.00@16.00.
Watermelons, lb., 2@2½.

DRIED FRUITS

Price to growers:
Apples: 14@16.
Apricots: Opening prices on 1919 dried apricots to the trade:
Sunsweet Quality: Ch., 25; extra ch., 26; fy., 27; extra fy., 29; fy. Moorparks, 29; extra fy., Moorparks, 32.
Growers Brand Quality: Ch., 24½; extra ch., 25½; fy., 26½.
First Quality: Standards, 19; slabs, 21. Other grades on sample.
Peaches: Packers' quotations, basis price: Standard yellow, 16; Muir, 16¼; ch. yellow, 16½; Muir, 16¾; extra fy. yellow, 17, Muir 17½; fy. yellow, 18¼; Muir, 18¾; extra fy. yellow, 19½; Muir, 20½.
Pears, 16@18.
Figs: Calimyrnas, 18@20; Mission, 11@13; Adriatic, 12@15.
Prunes: Packers' quotations basis price: 30-40s, 19; 40-50s, 17; 50-60s, 14½; 60-70s, 13½; 70-80s, 13; 80-90s, 12¾; 90-100s, 12½; 100-120s, and 120s up, no price quoted.

HAY

We quote today wholesale prices in carload lots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5 wire bales)	17.50@18.00
No. 1 Wheat or Wheat and Oat hay	15.00@17.00
No. 2 Wheat or Wheat and Oat hay	12.00@14.00
Choice Tame Oat hay	15.00@17.00
Other Tame Oat hay	12.00@14.00
Wild Oat hay	10.00@12.00
Barley hay	11.00@13.00
Alfalfa hay	14.00@16.00
Stock Hay	9.00@11.00
No. 1 Barley straw, bale	50@80

Citrus Markets

Los Angeles, July 2, 1919.

Large supplies of cantaloupes in the Eastern market combined with each day's increasing receipts of fresh deciduous fruits have slowed up the market for Valencias to the extent that several packing houses have closed and will hold back shipments from California till the Eastern market picks up. It is expected that the Fourth of July demand for oranges will take care of the supply on hand in the East and clear the way for new shipments. Reports of June drop throughout the state indicate a rather light crop of Navels next season.

The lemon market also is slow.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California: oranges 26,519 cars, lemons 7282, total 83,801. To same date last season: oranges 11,655, lemons 4003, total 15,658. Central California this season: oranges 4415, lemons 354, total 4769. Last season to same date; oranges 2535, lemons 115, total 2650. Northern California; oranges 244, lemons 2; last year same date, oranges 203.

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If it hasn't this Red Woven Label
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The Suit
Remember, all Athletic Underwear is not B.V.D.
THE B. V. D. COMPANY,
NEW YORK.

AT THE AUCTIONS

July 1

New York: 43 cars Val., 6 lem, 4 mixed. Val. 1.75-6.70, lem. 3.40-6.10, Mikes. 6.15, Bloods. 2.75, grapefruit 2.50-4.10.

Pittsburg: Val. 2.30-5.80, lem. 2.10-5.20.

Philadelphia: 22 or., 2 lem. Val. 2.10-5.20, Sweets. 2.20, lem. 3.75-5.25.

St. Louis: 3 or., 2 lem Val. 3.05-4.60, Sweets. 1.10-1.30, lem. 2.90-4.05.

Boston: 15 cars Val., 5 lem. Val. 3.20-5.00, lem. 3.00-5.65, grapefruit 2.45.

QUESTIONS AND ANSWERS

Continued from Page 9

and I have just made an examination this morning and find that the fungus Fusarium is abundant on the specimen. In general appearance it looks like the same trouble that is known to occur on watermelons, known as watermelon wilt. If this be the case there is nothing, so far as I know, to be done to save the vines. The fungus lives over in the soil from the previous crop and the disease usually gets worse and worse if the same crop is continuously planted upon it. So far as I know the only prevention is the practice of crop rotation and melons of any kind should not be planted upon it until the fungus is largely diminished. In the southeastern part of the United States they have found that it takes at least four years and sometimes more to get rid of the fungus in the soil. Whether or not it will take this long in California, I do not know. I shall make a further examination of this specimen and if I find anything different, will report to you later. I am not absolutely sure from this one specimen that the trouble is all due to the same thing as the watermelon wilt, although it looks as if this might be the case.

HONEY PRICES NAMED

The California Honey Producers' Cooperative Exchange has named a price of 11 cents a pound on new crop light amber extracted alfalfa honey at wholesale. The new price is 4½ cents a pound under the 1918 quotation. About 75 per cent of the state's bees are said to be owned by members of the Exchange.

Held by a Grip of Steel!

Where is the weakest point in every ladder—it's the point where each step is fastened to the stile but that's where the

SECURITY KANT-WOBBLE LADDER

is strongest! Each step-end is held to stile by a light steel cuff-bracket which forever eliminates all wobble, and makes the SECURITY strongest where other ladders are WEAKEST!

See your dealer's name in Cultivator of May 31, page 749. If your town is not listed there we will ship to you freight prepaid on approval two or more ladders at following prices: 8-ft., $5.00; 10-ft., $6.00; 12-ft., $7.20.

Pay after you examine and approve shipment.

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ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼ per cent. Made in U. S. A. Arcadian is the great American Ammoniate.

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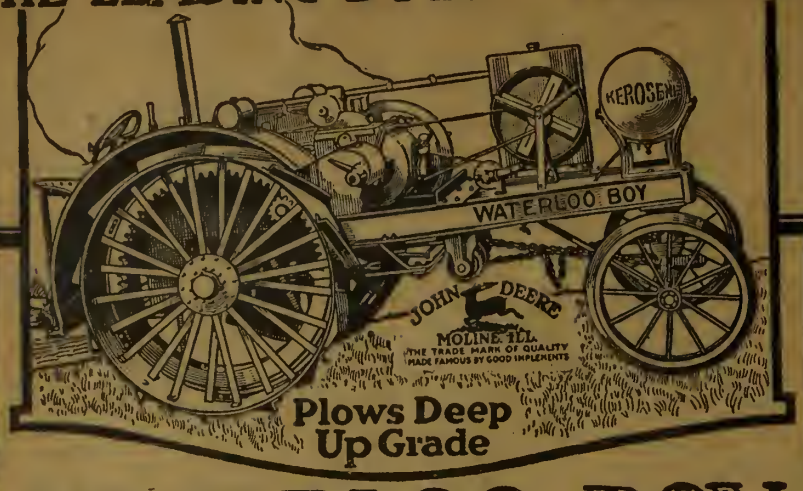

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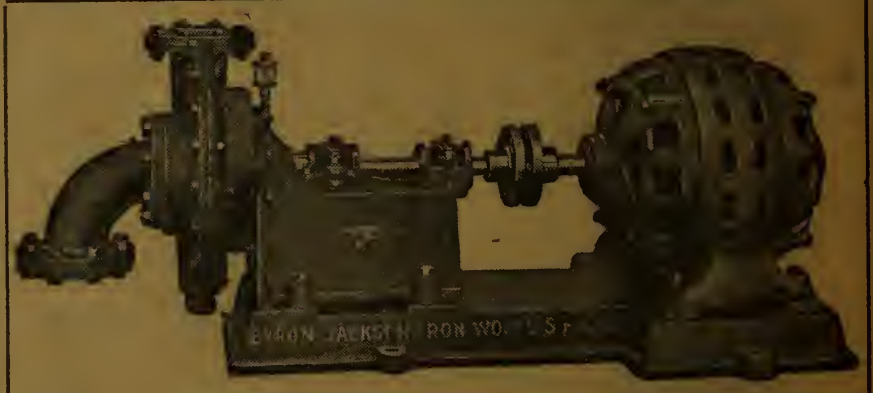

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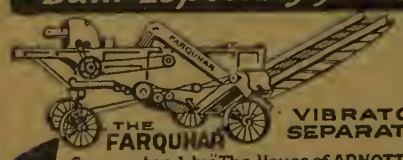

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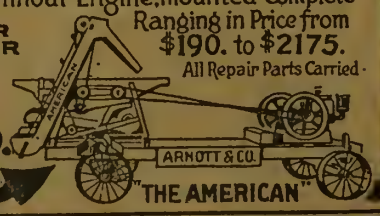

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — July 12, 1919 — No. 2

Drying Peaches on the Ranch

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

Vol. LIII No. 2

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday, July 12, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Apricot drying is ending and soon peaches will be covering the trays in many sections of northern California. California has 124,000 acres in peaches and dries over 30,000 tons; its canneries have an output of over 5,000,000 cases. The value of the peach industry of the state was in 1918 over $16,000,000, and from present indications that valuation will be more than doubled this year. Great is the California peach.

This view was taken in Tulare County which advertises itself as the equal in area of the state of Maine.

ROADS IN CITIES

With all of our campaigns for better roads in California there is one feature which has not been worked out as it should be, and that is the condition of the roads within the city limits. Occasionally at the limits of the cities the sign is erected "This is ..... Speed limit 20 miles per hour." There is no occasion for this announcement, for the condition of the road proclaims the city and limits the speed. Instantly we begin bumping the bumps and our heads hit the top of the auto. This type of street construction may not be followed all the way through the city, but compared to the roads outside the limits they are often most indifferent in quality.

This condition is not referred to to bring discredit to any town, for the same thing is true in nearly all cities in the state. City and town streets are not equal to those outside. We know of several cases where the incorporation of towns has been delayed and where sections have been annexed to cities at a date later than desired simply to secure completion of state highway building.

It is certainly unfortunate that our towns and cities are so indifferent to the necessity of good roads. Farmers may well insist that merchants who wish their trade see to it that the outside good roads system is connected up with their business district by better street improvements.

"GOING BY THE BARN"

In "doing" the state recently for the purpose of giving a fund of information to an Easterner who is "selling" California, we were asked a most pertinent question by a little miss who has driven through the farming section of Illinois and was for the first time getting a look at California. Remark was made as to the thriving appearance, or otherwise, of certain ranch and orchard homes, and the little lady inquired: "Do you go by the barn in California?" We were somewhat at loss as to the meaning of "going by the barn", and the mother explained that the expression is common in the Middle West where the barn is considered a better indication of the wealth of the farmer than is his house.

While it is probable that in California we do not "go by the barn" so much as other sections, for California climate does not call for Eastern equipment, at the same time the farm buildings, or, more, the surroundings of the farm buildings, are a wonderfully accurate indication of the real thrift of our producers. Too often the cast-off implements, instead of being thrown into the junk pile, or still better, disposed of as junk, are allowed to rot or bleach and litter up the ground which should be of some use. Values in California, taxes in California, implements in California, all are too high priced to justify the neglect indicated by the surroundings of farm buildings. Many a separator or drill or even tractor has been given additional years of life by protection from the weather. The good old days of leaving the combined harvester where the last job ended are past, but there is room for improvement. If this statement is questioned we would suggest a drive up and down the state, either coast or valley, sizing up the farms. It's fairly safe to "go by the barn."

SUN-MAID CITY

A Sun-Maid guide recently took us in hand and gave us a view of one of the buildings of Sun-Maid City, a couple of miles from the business center of Fresno. It certainly is some city. It is worthy of a visit from every raisin grower in California. It is most convincing of the magnitude of the industry and of the business methods which prevail and which are making such a magnificent success of California raisin vineyards. There is no more striking illustration of the value of cooperation than in Sun-Maid City.

We have no information as to the thousands of square feet of floor space, of the height of the buildings or the cost of the structures, but we carried away a vivid picture of great reinforced concrete buildings, perfectly lighted, with every possible mechanical contrivance which makes for efficiency, operated by an organization so efficient that every movement seems to fit into the action of a perfect machine.

We may refer to just one or two items of efficiency in this process of packing raisins. As they are delivered at the door from the car which has brought them from the vineyard they are dumped from the sweatboxes into automatic conveyors which take them to the seeders; from the seeders other conveyors take them to the benches where women pack them in cartons. They are weighed with exactness, placed in boxes, checked, weighed and inspected, cover nailed on, branded, loaded in car, with hardly a stop in the entire process, and merely a few minutes is required in passing through from one side of the great city to the other.

Features in the city are the rest rooms, recreation rooms, hospital or clinic with constant attendance of physicians and nurses. Even the slightest injuries are given free treatment. At the time of our inspection a lady from one of the packing benches was having bandaged a wrist overstrained by constant use in passing cartons.

Sun-Maid City is truly named, for California's sunshine and California's vineyards stored the sugar which makes possible the industry of 150,000 acres in raisin grapes which will this year produce well up towards 200,000 tons of a value at which we are only guessing, but, say, 25 or 30 millions of dollars.

AUTO GRAPHS

Los Angeles to Sacramento in an auto is a lot more fun and one learns more a-lookin' than he can from a car window.

* * *

A car window these busy days, likewise warm days, takes the trip from one end of Caclifornia to the other, especially on the "Valley Line', by night.

* * *

The busy man entrains at San Francisco or Sacramento in the evening and arrives at Los Angeles —or vice versa—early next morning. does business all day, home next night, having slept through the longest state in the Union and learned nothing — nearly nothing — of busy apricot orchards, self binders, mowers, combineds, fields irrigated and made ready for milo, almonds, grapes, peaches, all fruits, a-growing —producers feeding the world. It's more informing to "do" this state up one side and down the other in an auto. Let gas do it.

* * *

Just a word before speaking of the interesting things seen from the auto. This word has to do with the business side of the California Cultivator.

* * *

Besides the home office which gives employment to nearly a score of busy folks, there is a branch in San Francisco under the direction of M. C. Holman, another in Sacramento where R. P. Royce, live stock editor, grinds out his copy of interest to the live stock people. In this he is assisted by C. L. Hughes. Another branch is located at Chicago, in the Steger Building. This is in charge of Tom D. Costello and a corps of nearly a dozen efficient workers. Mr. Costello occupies his time in "selling" California as represented by the California Cultivator to advisers of the Middle West. The Eastern portion of the United States is covered by S. E. Leith with headquarters in the city of New York. This is mentioned merely to give an idea to the Cultivator's increasing family of the real magnitude of the organization necessary to produce the paper, to give the news and cultural information required for the nearly 40,000 papers which are printed every week.

* * *

Now, as I said, Mr. Costello has been talking and has been "selling" California from the Chicago or Middle West office. He has done this most successfully for a number of years and is now in California learning more of this state and its resources that he may carry back to Chicago information as to the opportunity which Eastern dealers and manufacturers are missing who are not offering their wares to California buyers. Mr. Costello has already decided: "This is some state. I am astounded at the number of things you produce here, at your perfect climate, your wonderful roads, but, more than all, the awful bigness of things. This sure is some state with its thousand miles of good roads stretching in almost a continuous line from one corner at the Colorado River and Mexican boundary to the northern line at Shasta.

One gets this sense of bigness more by auto than by train, hence "Auto Graphs."

* * *

A gray morning, streets of Los Angeles left behind, San Fernando Valley, sunshine breaking through the fog, past the world's greatest olive grove, reservoirs holding the waters of Mt. Whitney 250 miles away, the "riffles" where the waters are purified by air and sunshine before being turned into the distributing system of a great city, Soledad, Mint and Bouquet Canyons are all past, and old Jeff, or, more respectfully, the Jeffrey automobile with F. H. Thomas, manager of the Cultivator Publishing Company at the wheel, settles down on the $25,000 per mile concrete Ridge Road with a contended m—m—m—as soft as the purr of a kitten and as musical—almost—as the meadow lark. If I could write poetry my first should be "The Song of the Auto." The artistry of the mechanic who tunes the machinery under the hood is worthy a real poet.

* * *

Strange, the mixture of almond orchards and Joshua trees in the Antelope Valley which is really a part of the Mojave Desert. The almonds are not as healthy nor as prosperous looking as they should be, that is, there are many dead trees and open spaces where trees were, but those still alive are filled with nuts. We were in the Antelope because of necessary detour while part of the Ridge Road is paving.

* * *

Those Joshua trees, or yuccas, 15 to 20 feet high, weird and strange, absolutely useless to the human race excepting as odd things to look at until the Yankee learned to put the great rough trunks into the lathe and turn out a veneer from which is made tree protectors for the orchardist and splints for the use of surgeons in the hospitals of all lands.

* * *

Elizabeth Lake, Crane Lake, Ridge Road, Tejon Pass, long sweeping curves making a drop of over 3,000 feet to the head of the straightaway concrete highway into the San Joaquin Valley. Sixty-three miles with scarcely a turn and without a bump.

* * *

It is yet early in the season and still some vineyards and orchards not irrigated are showing the need of water. The year's rains were wonderfully distributed and crops are giving wonderful return, still the fact remains but a small amount of water went to the lower depths of the soil and only most careful conservation will see deep rooting trees safely through the season.

* * *

More Graphs next week—C. B. M

Citrus Culture---Irrigation, Cultivation, Fertilization

By Ernest Braunton

FEW questions enter into the irrigation of citrus orchards, but these are important ones; only two in number, when, and how. The when deals with the number of waterings, how far apart, in time, etc.; the how relates to methods. No other questions are of much importance. In dealing with the "when" the nature of the soil must be considered, also the age of the orchard. The first year after planting is the most important one and it is considered good practice to water them once a month until rains come, no matter what the nature of the soil. It is better this first year to give too much rather than too little water. After the first year it is safe to state, for general rules, that every orchard needs three or four irrigations, either number covering the same period of time, approximately 24 weeks.

On light soils give four irrigations six weeks apart and on heavy soils three irrigations eight weeks apart. This is offered where water is plenty, work well done, and the subsequent cultivations thorough and sufficient. Some orchardists' water supply is based on a specific amount available only on a certain day or days each month. If one has no storage reservoir and is compelled to use his water direct from the ditch he must irrigate when he can. This does not compel the best practice and should not be accepted if it can be avoided. Soil and climate are ruling factors in irrigation and all districts cannot follow the advice herein offered. In the hottest parts of interior valleys, in the lightest soils, no orchard could go unwatered for six weeks without serious harm resulting. However, it might be remarked that such lands are not best for citrus crops.

The amount of water necessary should be gauged by soil tests and not by gallons or inches. In ordinary soils a soil-tube test should show that water had reached five feet below the surface. In heavy soils water will sometimes have to run continuously for three days and nights to saturate the soil down five feet. No other than the furrow method will fill the soil, and in such soils several furrows will shorten the time, and this is just as true in light soils. Never less than four furrows should be used between the rows, and in many cases six would yield better results, for in very porous soils the drop of the water is greater than the lateral percolation, and many furrows must be used or the basin or check basin methods used. Only comparatively level land of a light character should use the back-furrow or ridge system, by which all the land is flooded, for water should not long stand about citrus trees. In rainless autumns it may be necessary to give an extra irrigation, falling well into December, but ordinarily no water would be needed during what we term the winter months.

Cultivation

The basis of orchard cultivation is plowing, and this is generally done but once a year, to turn under the cover crop which all orchards should grow. From that time, throughout the summer, cultivation only follows irrigation, and the practice differs greatly. Cultivation should follow irrigation as closely as possible without packing the soil. It should fall apart or pulverize easily or the work should be left for another day or two. Where the drying process is slow it is well to run over the orchard with a harrow when the surface begins to bake or crust, and a day or a few days later the real cultivation may be given. Some light sandy soils are ready for cultivation 24 hours after the water ceases to run. The minimum of work and the maximum of results are usually obtained on a light friable loam. The cultivator does not have in mind the killing of weeds as is so often the case in stirring the soil, but the soil is to be aerated while seeking the main object—a dust mulch to conserve the soil moisture. To accomplish this, pulverization is necessary and the finer this process goes the better the results obtained in saving water. For this reason all the organic matter is necessary that the owner can get into the soil. Too much cannot be given California soils.

If the upper soil can be deeply and finely pulverized the orchard will need far less water than if otherwise treated. An abundance of humus in the soil not only simplifies and reduces the amount of work, and also of needed water, but it keeps the soil more equable and lower in temperature during summer, a very important factor in the control of the June drop. This soil mulch should be not less than four inches deep, while one of six inches would be much better. It is possible to gain this in a very light sandy soil with a single cultivation after each irrigation, but in some soils it is a problem, and good caretakers frequently cultivate a half-dozen times between irrigations. The less one cultivates after each watering the more often will the water have to be applied. Harrows, disks, spike-tooth and other cultivators are some of the equipment used, and the tractor is rapidly replacing the horse in furnishing the necessary power. We hear far less of plow-sole and packing the soil where the tractors have been longest in use. A few growers have stopped stirring the soil entirely and are using straw mulches instead, but the writer believes the latter practice will be abandoned except in a few cases where unusual and unfavorable conditions prevail. The straw and other mulch material should be composted and, as soon as it partially decays, haul it upon the soil and cultivate it in. This indeed will prove the "happy medium." In cultivation the aim should be to begin lightly and go deeper with each operation. In this way the soil moisture is best conserved.

Fertilization

Fertilization of the soil should begin as soon as the orchard is planted, for it is easier to uphold soil fertility than it is to upbuild it when once depleted. The question of fertilizers is one upon which practical orchardists and soil chemists disagree, and clash as well, each in his own class. So that the question is an open field for discussion and each writer or speaker must be held to account for his own statements. So here goes for "dis chile". To provide plant food is not the only purpose of application of fertilizers. The physical condition of the soil must be improved, and anything that will improve the physical condition of the soil, aside from sand, lime, etc., also contains plant food. It may be better to put it another way. The best way to improve the physical texture of the soil is by the introduction of organic matter, and all organic matter contains plant food. Bear in mind that, in virgin soil at least, physical condition is of more importance than the amount of plant food present, for without proper physical condition plant food is not available to the plants. In California a good supply of humus is of all things the one most needed, and we have soils that for years need no other treatment, for the humus-making material carries a sufficient amount of plant food with it, and sufficiently balanced to need no supplementary elements.

Of all forms of fertilizers known none is so valuable or sufficient as stable manure, and in some soils no additional plant food is necessary to produce heavy crops of high grade oranges over a considerable period of years. How long this succession of good crops will continue is hard to say, but we have orchards where nothing else has been used. These are necessarily small tracts, for a large supply of stable manure is no longer available and some is shipped long distances. (While the writer was a park commissioner of Los Angeles we sold hundreds of tons that were hauled by auto trucks as far away as Redlands.) Stable manure is also most lasting of all fertilizers. After using it for a long term of years and discontinuing its use the resultant and subsequent crops will be better over a longer period of years than is the case with any other material used. One local orchard was very heavily treated with stable manure one year and for eight years thereafter was given none, but each year a cover crop of vetch was grown and turned under. This orchard has continued to improve each year and the owner is eagerly watching to note a depletion of crops not general in his neighborhood.

This treatment may not bring similar results on other kinds of soils, for our friend, R. R. Snowden, cites a case in the Cultivator of November 9, 1918, where stable manure (fresh) had an adverse influence, resulting in poor crops. But stable manure is always good for a general application and the case cited by Mr. Snowden is a most unusual one, for soil conditions as a rule are favorable to the nitrification of organic nitrogen. If not, as he says: "Nitrates must be added." But still use the stable manure. Lacking, as we do, a sufficient supply of this valuable material, it is unquestionable that we should grow and turn under green cover crops. All must do so, for we cannot grow oranges or lemons without a good supply of humus. In young orchards this will keep up the supply, for the trees are small, the crops heavy, and cover nearly the whole area. In old orchards, where the trees nearly touch each other, the crops will be insufficient, but even there we should grow all that the meager supply of light will allow. As every grower will have to study the specific needs of his soil, it is perhaps best that an article intended for the guidance of beginners should not enter more deeply into this truly complex question. All authorities will agree that the advice so far given is of the best. In closing, let it be understood that it is necessary to use some commercial fertilizers in nearly all soils to supplement either stable manure or cover crops or the best possible results will not be obtained.

Saving Labor in Growing Beets

MANY farmers are solving the labor problem by using larger implements and more horses. Such practices have enabled sugar beet growers greatly to reduce their expenses for man labor and increase their operations. The normal man labor required in growing sugar beets will vary from 80 to 135 hours or more an acre.

Under average conditions, where more horses and larger implements are used the man labor on machine operations will be reduced approximately 25 per cent.

A direct comparison of plowing crews in Michigan and Ohio, where conditions under which the work is done are uniform, shows that approximately one hour an acre less of man labor is necessary to operate a plow drawn by three horses than by two. With the larger outfit, as also when a tractor is used, a float or plank can be attached to the plow, and thus the breaking of a cloddy surface can be done with little additional effort or cost. In disking it was found that a four-horse outfit saves one-quarter of an hour of man labor an hour over the two-horse equipment.

Saving In Sugar Beets

Cultivation of sugar beets furnishes a striking contrast in crew efficiency. In Michigan and Ohio it was found that 1.9 man hours an acre were required to cultivate once over with a one row implement, 1.6 man hours with a two row cultivator, and only .9 of a man hour for a four row cultivator—a distinct saving in man labor by using the four row machine. As many fields require attention before it is possible for the grower to get the work accomplished, any saving of labor and time is an advantage to the growing crop and affords more man labor for crops competing with the sugar beet in the distribution of labor.

Under average conditions a crew of one man and two horses working continuously will lift approximately one and one-half acres of beets a day. A crew of one man and four horses will probably increase this area to two acres, or possible two and one-half acres a day under favorable conditions. The performance of the lifting implement can be improved still further with the addition of more horse power. If, by using an extra horse on the lifter, this work can be performed in a shorter period, more time will be available for hauling the beets to the factory or loading station.

Harvesters Mean Further Economy

An appreciable saving in farm labor will undoubtedly be accomplished through the development of mechanical harvesters. The hand labor on sugar beets, comprising such operations as blocking, thinning, hoeing, pulling, topping and loading, constitutes from 52 to 75 per cent of the total man labor in growing the crop. The pulling, topping and loading, when combined, make up 24 to 42 per cent of the work. Estimates made by several growers show a variation of 24 to 30 hours in the labor requirement for the hand work in harvesting. It is very apparent, says the bulletin, that this amount can be reduced to a few hours an acre with the introduction of the mechanical harvester. This will in turn release man labor for other important work during the fall months.

Agricultural News Notes of the Pacific Coast

Northern California

The grasshopper pest in the Sacramento Valley is under control.

The grasshopper pest is reported under control in Sutter County.

Modoc County reports offers for wool having declined to 45 cents.

Serious grain fires are reported in nearly every section of the state.

Threshing has started in the grain fields of Grass Valley, Nevada County.

Sacramento and Yolo Counties are making shipments of Bartlett pears.

Grasshoppers in Glenn County have been doing damage to growing rice.

Several apricot growers are trying out the plan of drying the fruit whole.

The Livermore Stockmens Association held its annual rodeo July 4, 5, and 6.

The Chico district of Butte County will have a bumper almond crop this season.

Forty carloads of garlic will be shipped from the Alameda district this season.

The Alameda Sugar Company has 5,100 acres of sugar beets growiing in Yolo County.

Carload shipments of garlic will be made from the San Francisco district the middle of the month.

15,000 people attended the picnic of the Fourteen Counties Association at Nelson Grove near Woodland.

It is rumored that the Sperry Company will take over the flour mill at Chico and fit it for handling rice.

A total of $45,000 in cash prizes is offered for exhibits at the state fair. The dates are August 30-September 9.

A poultry raiser of Hyampom, Trinity County, is making a success of shipping chickens by parcels post to San Francisco, 310 miles.

Wild mustard has been declared a pest in the grain fields of Big Valley, Lassen County. Many fields have been spoiled by its spread.

A buttermilk condensing plant is being installed at Benicia. The buttermilk is condensed to about the consitency of butter and sold for poultry feed.

The Glenn Olive farm center of Yuba County held a big rabbit drive on June 29. The drive was under direction of rodent control experts employed by the state.

A survey of the smut situation in the wheat fields of Yuba County is being made by C. V. Wilcox of the cereal disease department of the University of California.

By federal regulation going into effect July 1, no cattle affected by tuberculosis can be shipped from one state to another if the animals are to be used for breeding or dairying purposes.

Owners of combined harvesters, headers, stationary threshing machines or hay presses are required to have fire extinguishers on their machines by the provisions of a new law just signed by Governor Stephens.

Heads of the various agricultural bureaus to be consolidated in the state department of agriculture held their first conference in Sacramento June 20. One matter of interest discussed was the consolidating of agricultural exhibits at the state fair.

Central California

One hundred twenty-five thousand sacks of grain is the estimate from the east side.

Wheat growers of the Porterville district report little market in sight for the big wheat crop.

The Stanislaus County farm bureau has decided to discontinue local meetings through July and August.

Members of the Tulare County Canning Peach Association are happy over contracts for clings at $92.50 per ton.

Petitions are being circulated for the formation of the Merced irrigation district to cover approximately 176,000 acres.

A new peach handling plant is to be built at Hanford by the California Peach Growers' Inc., at a cost of $61,000.

Minimum wage for women in canneries has been placed at $13.50 per week for a working week of six eight-hour days.

The farm adviser of Madera County is compiling a list of pure-bred stock breeders of the county; hogs, cattle, horses, poultry, etc.

At the hog auction held at Tulare June 25 by the California Farm Bureau Marketing Association the top price was $18 for a lot of 68 hogs averaging 215 pounds.

The Kings County farm bureau is considering the proposition made by O. V. Cobb of the Valley Fruit Growers' Association to establish at Hanford a model laborers' camp.

Horticultural Commissioner Rutherford of Stanislaus County says the cantaloupe acreage of the Tuslock section is one-third larger than normal. The shipping season has opened. Great care will be taken to see that no green fruit are shipped.

Porterville canneries have already booked orders for the shipment of 110,000 cases of peaches and apricots as soon as they can be packed. The sales committee of the Tulare County Canning Peach Association has announced the closing of a contract with a California canner on the basis of $92.50 per ton for clings and $55 per ton for frees. The estimated pool of the association this season will amount to about 6000 tons.

The first of the season's barley crop began to arrive in Tulare last week, between two and three weeks earlier than in previous seasons, and with the barley showing cleaner than in most previous years. The same is true of the wheat which has been coming in from the Tulare lake regions in the western edge of the county, where a record-breaking crop has been harvested. The lake just now is entirely dry and the entire wheat bottom has been one vast wheat field this season.

The tomato cannery of the California Italian Products Company at Tulare has been leased to the California Cooperative Canneries, which will use the plant this year up to the time of the tomato season for the manufacture of apricot butter and for canning peaches. The new lessees have purchased the pool of the Tulare County Peach Growers' Association, a total of 80,000 tons, at a price of $92.50 per ton. Of the peaches 3000 tons will be canned at Tulare, the balance going to the cannery of the organization at San Jose.

Southern California

The cantaloupe shipping season in Imperial Valley is coming to a close

The first full carload of grapes for the season was shipped from El Centro June 25.

Walnut growers at Saticoy, Ventura County, report aphis knocked out by the hot weather.

Word is received of the death of Fred W. Knight, for eight years manager of the Tustin Lemon Association.

The California Prune and Apricot Growers Association is campaigning for increased membership and acreage.

The heaviest shipments of cantaloupes are over from Imperial Valley; watermelon shipments continue to increase.

Riverside County's olive crop will this year amount to 800 tons, according to estimates of Horticultural Commissioner Sharp.

Live stock organizations of the Imperial Valley met in El Centro, July 2 to lay plans for a live stock fair to be held in the fall.

Walnut growers of Chino are planning to form an organization to affiliate with the California Walnut Growers' Association.

At a meeting held in Fillmore, June 27, apricot growers of Ventura County decided on a wage scale for this season's apricot drying work.

Many orange packing houses in Southern California closed during the latter part of June to let the Eastern markets catch up with the supply of fruit on hand.

A mass meeting of bean growers of Ventura County was held at Oxnard Saturday afternoon, June 28 The meeting was addressed by Wiley Giffen, president of the California Associated Raisin Growers.

Four carloads of lima beans were sold the last week of June at nine cents. These sales were made by the lima bean pool. It is now believed that the pool will net bean growers about seven cents per pound.

The annual report of the Coachella Valley Date Association shows fresh dates sold from their packing house at Indio for an average price of 37.98 cents per pound. In addition a ton and a half of minced dates were put on the market.

Grain growers will be allowed 4½ cents per bushel for bags this year, instead of 9 cents, the amount fixed by the government last year as the allowance to the shippers for the cost of bags. The reason for cutting down the allowance is a proportionate drop in the cost of bags in the market.

H. H. Warner, director of membership work of the California Walnut Growers Association, and Roswell Cochran of the advertising department, have been looking over crop conditions in Ventura County. Mr. Warner was formerly in charge of the Los Angeles office of the U. S. bureau of crop estimates.

At the annual meeting and picnic of the San Bernardino County farm bureau held at Devore last Saturday the following officers were elected: President, R. B. Peters, Devore; vice president, Harrison Kerrick, Grand Terrace; directors-at-large, for west end, W. W. Coke, Redlands; H. A. Cherrier, desert; George Siemon, Hinkley, San Bernardino section; Mrs. S. U. Stewart, Del Rosa.

The Coast and General

A large shipment of Japanese peanuts was received recently in San Francisco.

Governor Campbell has appointed Earl M. Matteson of Benson state bee inspectoor.

Farmers of Lane County, Ore., who lost their bean crops in the late frosts are considering planting broccoli.

The light automobile truck has become a factor in marketing strawberries in the Hood River section of Oregon.

It is proposed to hold a corn show in connection with the Northern Arizona fair to be held at Prescott in October.

Boys' and girls' agricultural clubs of Spokane County, Washington, are planning a county-wide picnic some time this month.

Arizona has just turned over to the trustees of the various school districts the sum of $449,557.80. This is $6.10 for each child of school age.

Dr. H. H. Blome, formerly head of the Northern Arizona State Normal school, has been appointed new director of vocational education for Arizona.

A bill has been introduced in the house authorizing the appropriation of $20,000 for the establishment of a poultry experiment farm near Glendale, Arizona.

Salt River Valley, Arizona, truck growers have grown this year some yellow tomatoes. Previously it was supposed that the yellow tomato would not mature in this climate.

Wyone Taylor, a 14-year-old girl of Pima, Arizona, is the winner of the state championship for the Girls' Canners Club work. She has put up 250 jars of fruit and vegetables, each one representing a separate product.

A farmer in Yavapai County, Arizona, in cooperation with the United States biological survey and the county agricultural agent, poisoned the prairie dogs on his farm and has produced a crop of beans and corn worth $2500. Previous to poisoning the rodents it was impossible to raise any crop.

Bids for the Tempe Mesa highway have been received by the state engineer of Arizona. The lowest bid runs about $30,000 a mile for a 20-foot concrete road. The Tempe-Phoenix concrete highway is now open to the public, and is without question one of the very best pieces of road in the state of Arizona.

Forage on the Arizona ranges is still in good condition, although there has been no rain since May. Pastures on some of the higher elevations have begun to deteriorate. Throughout most of the range country cattle are in good condition. In part of Santa Cruz and Graham Counties stock and range are reported as only fair.

Cattle men of Cochise, Pima and Santa Cruz Counties, members of the Southwestern Cattle Growers' Association, at a meeting held at Nogales, June 18, protested against the plan of the supervisor of the Coronado national forest to round up all the cattle in the forest for a government count. The cattle men claim that a serious loss would be sustained if a round-up is carried out at this time.

Irrigation and the Alkali Problem

By W. P. Kelley

In delivering the following address some months ago at the San Bernardino Citrus Institute Prof. Kelly expressed the hope that it would not be considered as an attempt to throw a scare into California culturists or to advance pessimistic ideas, but simply the presentation of a few facts as to conditions which might obtain in some sections of California and upon which the grower should be informed in order to protect his land so far as possible from the catastrophe of having alkali carried onto it, especially lands which may have a certain per cent of alkali content. This address caused much comment, and we are glad to pass it on to readers of the Cultivator.

IT IS my purpose to discuss two phases of the alkali problem as related to irrigation. They are: Seepage and irrigation run off; composition of irrigation water. I shall tacitly assume throughout this discussion that the accumulation of alkali is a thing to be avoided wherever possible, that alkali wherever present in any considerable amount is not only undesirable but that an increasing content of alkali is likely to become a serious factor in the production of almost all kinds of crops. While this paper has been prepared with citrus culture especially in mind, much of what I shall say applies to irrigated agriculture in general and to a large number of irrigated crops.

That citrus trees are among the especially sensitive plants to alkali is commonly admitted; investigations published some 20 years ago leave little room to doubt it and experience and investigations more recently abundantly confirm this view. Different varieties of citrus show varying degrees of tolerance to alkali. In general, lemons are considerably more sensitive than oranges and in some instances it appears that Navels are more sensitive than Valencias. In our investigations on soils in Southern California this subject has forced itself upon my attention and has come to be one of the prominent subjects of investigation.

The effects of alkali manifest themselves in various ways, but I shall not attempt to discuss the detailed relationships between citrus culture and alkali. The subject is a large one and presents many angles. As in the case with other crops, it is enmeshed in consierable complexity, and the specific effects produced by alkali on citrus trees when grown under different soil and climate conditions are frequently quite variable.

At present I shall mainly consider the actual accumulation of alkali. I cannot refrain from stating, however, that it is not necessary for alkali to accumulate to a point where excessive concentration in the usual sense has taken place before definitely injurious effects are produced. In our studies on the subject it has been found necessary to study the effects of the different alkalies on the soil itself. The results are throwing a flood of light on the idiosyncrasies of alkali. Already it has been found that unfavorable physical and chemical effects are frequently produced in the soil long before an injurious concentration has accumulated.

Alkali in its literal sense is nothing more nor less than the easily soluble materials that are formed as the result of the decomposition and weathering of rocks and soils. Where the rainfall is sufficient, the penetration of water deep enough and the drainage adequate the soluble materials are leached away periodically and alkali does not accumulate. The water passes out into the country drainage, carrying the soluble materials with it, consequently there is no accumulation of alkali. But the case is very different over a large part of the Southwest. Here little or none of the rainfall actually penetrates sufficiently deep into cultivated soils to leach soluble materials deep enough for them to pass on into the continually moving currents.

During previous eras, or whenever the soil and sub-soil materials were actively laid down, and especially since the time of their deposition, soluble materials have accumulated to a greater or less extent over very large portions of the present agricultural lands of the semi-arid region. Fortunately the main portion of the present citrus area does not contain excessive amounts of alkali at present, nevertheless this problem is sufficiently closely related to every acre of citrus land in California to justify careful consideration at the hands of citrus growers.

The phase of this question that probably first suggests itself to the minds of farmers relates to the translocation of alkali from one area to another through the slow and more or less intermittent process of leaching effected by irrigation water. Large areas of land receiving only light rainfall and which for thousands of years, perhaps, have lain in a semi-arid condition have now been brought under cultivation through the beneficence of irrigation.

Unless special precautions are observed with such land the irrigation run-off finds its way to lower levels and in any event a slow movement of moisture in the sub-soil takes place following irrigations, always towards the lower levels. This moisture dissolves and carries along with it small amounts of the soluble materials with which it comes in contact. In many cases this process goes on so slowly as to escape detection. Unfortunately in many other cases its progress has not been marked with especial slowness. The result of this process is that the lower lands later become more or less water logged, where through evaporation the concentration of alkali gradually increases till the upper portions of the soil become heavily charged with alkali.

Examples illustrating this process are well known and altogether too common in practically every large irrigated section of the West. Indeed it is not necessary to go beyond the limits of the present citrus area to find illustrations of this very process in operation at the present time. Fortunately the area of citrus lands as yet affected by a high water table is not especially large, but after all the tendency for alkali to accumulate in the low places is sufficient in itself to warrant attention. As a matter of fact any piece of land wherever it may be located in an irrigated country under which and onto which either irrigation run-off or seepage water is passing and from which there is not adequate means for this water to pass on and drain away, is in danger of ultimately becoming an alkali bed. The amounts of soluble materials gathered up by slowly moving water as it seeps through soil and sub-soil of the very best quality is sufficiently great, if allowed to evaporate in confined areas long enough, to become a problem in itself.

A phase of this matter commonly overlooked is the fact that the soil, and especially the sub-soil on the mesas, frequently contains small amounts of alkali, although the concentration may not be prohibitive so long as it remains in its original distribution. Nevertheless the mesas frequently contain greater amounts of alkali than much of the soil lying lower down in the valleys. When water is applied to these higher lands the slow downward leaching process begins. Irrigation run-off and seepage slowly find their way down hill, carrying more or less of the soluble materials dissolved on the way. These ultimately accumulate in the lower lands and there may later become a serious alkali problem.

While I do not wish to enter upon an extended discussion of the matter at present I wish to state in passing that practical citrus growers and irrigators in general will do both themselves and posterity a lasting benefit if they pay strict heed to the movement of irrigation water from the higher to the lower levels both on their own and nearby lands. Greater damage has been done in certain sections of the West through neglect in this matter than through almost any single factor with which I am acquainted and an ounce of prevention is worth 1000 pounds of cure.

Over-irrigation, in a word, is one of the greatest evils, because it not only prevents the greatest economic use of water as such, but also carries in its train the strong probability of an alkali problem, either for the farmer himself, his neighbor or for posterity. Even with the very greatest care in the use of water it has not yet always been possible to avoid this slow seepage process.

Good and really effective drainage is an indispensable adjunct to permanent irrigated agriculture and over large tracts of land natural drainage will not accomplish the purpose. In my opinion a broad drainage policy must ultimately be adopted if the continued well-being of the soil is to be maintained. It is not pleasant to contemplate, yet the facts are clear to my mind that the only possible outcome for the insufficient drainage that now exists over large bodies of the present irrigated lands is a baffling alkali problem. A rising water table, or even a stationary water table within a few feet of the surface, stands as a constant threat to the future value of a piece of land. As a matter of public policy it should, in my opinion, be an offense before the law for one man deliberately to conduct his drainage onto his neighbor's land. The only real solution lies in conducting the drainage into a channel that will act as a positive purveyor to the sea either directly or indirectly. Hundreds of thousands of acres in California have already been seriously injured by neglect in this very matter.

(Continued next week)

A One-Armed Gardener

By M. E. Bemis

When we see blind men that make a living in spite of their handicaps and men without legs who outdistance many who are physically 100 per cent efficient, it has a tendency to put some of us to shame. George Artis, a gardener of the Salt River Valley of Arizona, has only one hand, but he doesn't let a little thing like that interfere with his job. Last year he decided to follow the style of many farmers in that section and raise a little cotton. The variety grown is the Egyptian Long Staple which has been developed in Arizona and is known technically as American Egyptian.

Artis has only three acres; part of that is in a fruit orchard and part under lath for growing early vegetables, both spring and fall. So he had only an acre and three fourths for cotton. This he dug up by hand and, mind you, with one hand at that. He planted by hand and cultivated with only a hand hoe wielded by this same right hand. When picking time came he gathered it all with one hand, and his crop amounted to 1,150 pounds of lint, or more than two bales on the one and three-fourths acres, which netted him $610.40.

Single Handed Farming

George Artis. His left hand is not in his pocket. It isn't, but in spite of the handicap he does all the work on his little three acre farm. This shows his lath house where he grows early winter vegetables.

The picture shows Artis standing beside his lath house which, as may be seen serves to shade the young plants from the hot summer sun and permits starting the tender fall vegetables a little earlier than if grown under the direct rays of the intense Arizona sunshine.

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Purity 99.35% Germination 90.20%
Found free from the following noxious weed seeds:
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Why run the risk of getting a bumper crop of weeds? Why gamble with low-germination seed?

Every experienced orchardist knows the value of Melilotus Indica as a cover crop—no need to dwell on that fact. All you need to know is that you are getting the **best seed** your money can buy.

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The Wheat Tractor

The 12-24 WHEAT TRACTOR handles 3 14-inch plow bottoms under all normal conditions. It will furnish power for any hay baler or silo filler, also plenty of power for a medium sized grain separator, with weigher, wind stacker and self feeder. As it is equipped with a governor like a stationary engine, the WHEAT TRACTOR will furnish steady power for pumping water, running an ensilage cutter or doing any similar farm work.

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Date Palms in the San Joaquin

A NOTEWORTHY experiment and one whose success will add materially to the fine record already borne by the San Joaquin Valley because of its agricultural and horticultural productiveness, is the culture of the date palm for commercial purposes. This experiment is being fostered by W. R. Nutting of Fresno, a man of progressive ideas and one who has done much toward building up the fruit industry of the San Joaquin Valley. The finding of specimens of Phoenix Dactylifera, the fruit bearing variety of palm, scattered here and there in the valley, planted for the most part solely for ornamental purposes, served as the inspiration for this project.

Five-Year-Old Date

As to producing dates in the San Joaquin Valley this illustration speaks for itself.

Date palm culture has many attractive features; immense yield per acre, small cost of cultivation, freedom from disease, long productive life (from 75 to 100 years), the fact that the date is 50 percent and more sugar and so preserves itself and does not have to be processed in order to be marketable, and further, that it is one of the very few plants that will thrive in soil permeated by alkali.

Mr. Nutting's idea is to establish experimental gardens to be cared for scientifically and, in addition, to plant date palm parks in all the cities of the San Joaquin Valley, or plant in the parks already established, instead of the ornamental palms. Such trees with their clusters of beautiful ripening fruit would be doubly ornamental.

With the exception of a few dates produced in Arizona and Southern California practically all the dates found in our markets are imported from northern Africa and Persian Gulf ports, so that the date industry would have market advantages over other fruits. The present annual consumption of dates in this country has been conservatively estimated at 32,000,000 pounds or about five ounces to the person. The fruit, through experiments on seedlings, has proved valuable as a forage crop, being especially good for fattening porkers. So should the fruit for any reason prove unfit for human consumption or be unmarketable, the owner could utilize it to advantage as a forage crop.

The date palm will grow in most any kind of soil, though a sandy loam seems best suited to it. The transplanting of the seedlings or planting of offshoots in the valley should be made in April and May. The plant blooms in the spring, usually anywhere from March first to the latter part of May. The fruit matures in the fall and early winter. It withstands a great deal of moisture. They "like to have their heads in the sun and their feet in the water." In the valley of the Nile in northern Africa date palms have been known to stand in water for several months when the river has overflowed, and without

Fruiting Date at Selma, San Joaquin Valley

This tree bears edible dates. It is many years old; the date of planting is not known.

apparent injury to the tree. Also it requires but little cultivation. It is subject to injury from frost when young, but it will stand quite a low temperature without serious injury. The fruit does not mature at the same time, but often extending over a period of two or three months. This fact misleads many people into thinking that the fruit does not thoroughly mature.

Speaking of this project Mr. Nutting had this to say: "I do not expect that the culture of dates as I hope to see it established in the San Joaquin Valley can be made a highly paying industry at once. To establish it on a sound basis will require an immense amount of cooperative, preliminary effort, but it can in time be made a most valuable industry in the valley and so of benefit to the entire state."

ARCADIAN
Sulphate of Ammonia

Men who applied ARCADIAN Sulphate of Ammonia to their grain are beginning to reap the profits.

ARCADIAN Sulphate of Ammonia is for sale by: CALIFORNIA: San Francisco: Hawaiian Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Pacific Guano & Fertilizer Co., Western Meat Co., California Fertilizer Works, Los Angeles: Pacific Guano & Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Agricultural Chemical Works, Hauser Packing Co. OREGON: North Portland; Union Meat Co.

For information as to application, write

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CITRUS TREES
Lemons----Oranges----Grapefruit

I have on hand for immediate delivery:
25,000 Eureka Lemons.
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All carefully selected buds from record producing trees. Unexcelled root system. One inch and up.

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Are especially Grown for Planters desiring the Best. If better trees could be grown we would grow them. May we have your order?
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FRUIT TREE LEAF-ROLLER ATTACKS WALNUTS

The state horticultural commission is giving publicity to a note recently received from E. O. Essig at Oxnard. This further bears on the penchant for walnuts of insects closely identified with the apple, notwithstanding the dissimilarity in the two botanical species as regards both leaf content and character of fruit. Mr. Essig writes:

"On June 9, 1919, A. A. Brock, county horticultural commissioner of Ventura County, brought to my office a number of half-grown walnuts showing the work of an insect larva which greatly resembled the work of the larva of the codling moth on the young English walnuts. With these walnuts Mr. Brock brought also two living larvae which were taken feeding upon them.

"At first thought on finding the work it was supposed that the codling moth was the culprit, but upon examination of the larvae this idea was at once abandoned. A microscopic examination, such as was possible without proper facilities, revealed the insect in question to be a leaf-roller and apparently the fruit tree leaf-roller, Archips argyrospila Walker, which has a wide distribution in California.

"The damage, which was considerable, occurred in a walnut orchard near Santa Paula. Inasmuch as this insect has not been previously noted as attacking this particular host and as there is so much interest in the codling moth attacking walnuts, it was thought best by Mr. Brock and myself to send a short note for publication."

AVOCADO PROGRAM FOR 1919-20

There are no more enthusiastic horticulturists in California than the avocado growers. As an instance, Pres. Sallmon of the California Avocado Association is asking directors and members to consider the following proposed program for next year's work and make sugestions for its betterment.

Some of the things to be aimed at: Increase membership to 300. Study marketing problems; Steps to assist members in sale of fruit, steps toward elimination of marketing unfit fruit, study how to pack for shipment, standardize sale prices of varieties. Continue study of varieties. Cooperation of Rockefeller Institute in investigating uses of avocado for medicinal purposes.

Extend the educational campaign; leaflet on "Avocado as Food," leaflet on "How to select a good avocado and prepare for table," prepared articles in press, reprint "The Avocado from Seedtime to Harvest." Directors' Field Day for visits to groves.

Exhibit of fruit at best season.

Encourage keeping of individual tree records.

Steps toward securing qualified man for sub-tropical fruit investigation.

The next semi-annual meeting will be held at Santa Barbara, October 24 and 25.

SCALY BARK AND FUMIGATION

Demonstrations on scaly bark control were staged last Saturday by the Orange County farm bureau at S. S. Twombly's grove in Fullerton. The demonstration was conducted by Prof. Fawcett of the Riverside experiment station. Prof. Fawcett also discussed control methods in the afternoon of the same day at the Tustin schoolhouse. In the evening Prof. Quayle took up discussion of fumigation with liquid gas, also at the Tustin schoolhouse.

GOOD ORANGES DUMPED

From Freeport, Pennsylvania, comes a newspaper story that a carload of good oranges was dumped at a siding, sprayed with oil and covered with dirt so as to make them unsalvageable—all this in order to maintain prices. The dealer to whom they were assigned by the California shipper claims they were condemned by city and government authorities.

8 ft. $5.00
10 ft. $6.00
12 ft. $7.20

Will ship to you Freight Prepaid. Pay after you examine and approve.

Are You a Cave Man?

—of course not—then why use the Cave Man's tools? Do you know that until the

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was patented there had been practically no real improvement over the ladder the cave-man used in the stone age.

Security Ladders are built with a patented steel cuff-bracket machine-wrapped around stile at each step-end, making possible the slim, lithe construction that combines strength with lightness, and does away with the wobble.

Order direct, if your dealer is not among the 65 listed in Cultivator of May 31 on Page 749.

J. B. Patterson, Mfr.
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Safe From June Drop

Now Make Your Valuable Orange Crop Safe From Black and Citricola Scale

Your valuable orange crop is safe from June Drop now—why not make it safe from Black and Citricola Scale?

The cost is very low for the protection afforded—from 2 cents per tree two years old to 15 cents per tree for the material on trees up to twenty years old.

Black Scale hatches from May to November. Owing to the uneven hatch the best eradicator is a material that is on the tree when the hatch comes out. The scale cannot avoid Tizit Spray if properly put on. Tizit will stay there on the job ready to kill until washed off or rendered ineffective by the fall rains.

And it cleans the trees of dead scale that perchance is often left. Tizit is a Killer of Scale and a Cleaner of Fruit. Trees function properly when Tizit is applied.

It is NOT an oil base spray. There is positively nothing in its contents but that is beneficial to tree and soil. Groves in Los Angeles County sprayed with Tizit every year for the past 5 years are yielding more and better fruit topping the market, and the trees are the best testimonials we have.

TIZIT SPRAY costs less and works longer. It is the best and most economical Black and Citricola scale eradicator you can buy.

Let us send you the names and locations of regular users of Tizit Spray in your section so you can see the results of from one to five years regular use.

Our citriculturist, Mr. Wyllie, is at your disposal.

The Tizit Spray Mfg. Co.
1344 Willow St. Los Angeles

Also may be ordered through our local agents, or The Fruit Growers Supply Co., or Mutual Supply Co.

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10 FOOT 6 INCHES LONG — DOUBLE LOCK SEAM — ONE PIECE BODY
MANUFACTURERS OF
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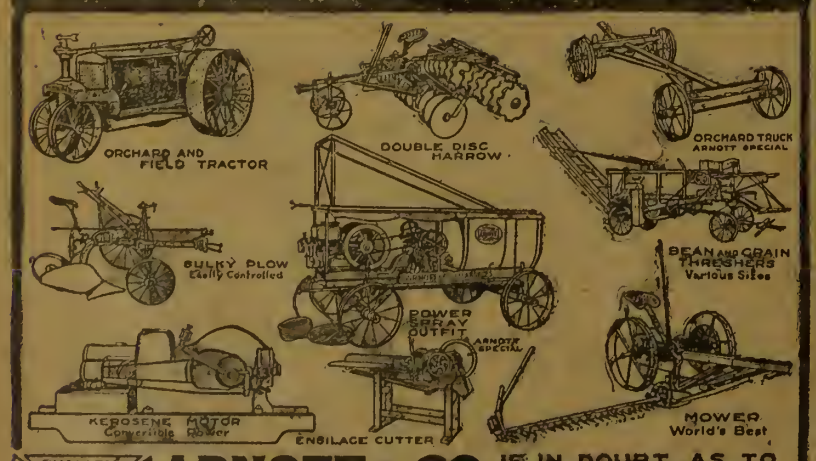

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Agriculture's Opportunity

From Address by Dean H. E. Van Norman to University Farm School Graduating Class

MONEY is a necessity as things are today. No one gets along without it. The city man secures neither food nor clothing, houses nor recreation without money. From automobiles to fresh eggs, street cars to pew rent, it is a money transaction. With the farmer it is only less so in proportion as he produces his own eggs, milk, meat, vegetables, fruit, and as he owns his own transportation system. His income is in irregular and usually scattered amounts.

It is small wonder that the young man who arrives in this world without money, or clothes even, should be eager to complete the period of his dependency on others; that he should weigh the details of his college course in terms of its seeming money-making power; or that he should be impatient to "get a job" and want to get a job that pays, especially if he is ambitious to own a ranch and has no hope of falling heir to the lifetime accumulation of parents or others.

It is small wonder that money looms big at your age—money maybe to pay college debts, money for necessities, money for fun, money to start your own business, money to establish your own home, and yet in spite of its importance and necessity we are told that nearly 90 per cent of all men die dependent on other than themselves for their bread and butter. Thus we admit the vital necessity of money and that you have been giving the major portion of your time and thought here at the University Farm to those things expected to increase your earning power—your money-making ability.

But my parting thought, as you sit with nervous fingers waiting for the parchment that is the symbol of one task done and of your readness for a new one, is the hope that your earning power in money matters is larger than your normal necessities; that each of you may not only make a good living and a reserve for the rainy day, but that you each have a surplus of energy, time, ability and thought to give to your state, your community, your neighbor and your family.

* * *

Have we in agriculture a code of ethics? Or can we evolve one, which, if lived up to, will dignify our life work as a profession rather than merely a money-making business? I sincerely believe that agriculture offers us that opportunity and I venture to suggest as a start for our code of ethics for the profession of agriculture:

First, that the land we cultivate and the flocks we feed shall be more fertile and more productive because they have been ours, aside from any wealth they may have given us.

Second, that we give freely to our neighbor of the fruits of our experience and observation. Agriculture is not a secret to be locked up from our competitors.

Third, that, as the products of agriculture are vital and essential to the life of society, so is the constructive thought and effort of the man or the land necessary to the solution of great problems confronting this nation. And so, the gift of ourselves to the community is as vital as the product of our lands.

Children are under-nourished, ill and dying in our great cities from inability to buy the milk and other foods from our farms. Not because the farmer receives too much for his part in producing them, but because our system of handling and distributing does not fully meet the day's needs. Strikes and social unrest menace the peace of our country because of a similar failure of our system to satisfactorily distribute the wealth of the nation. Somewhere between the radical view of the Bolshevist, who would destroy all and start over, and our present system that permits the accumulation of fabulous fortunes on one hand while the rank and file of the employes strike—yes, fight—for a little more than the bare existence of themselves and families, there is, there must be a happy medium, where the laborer receives an adequate reward for his manual effort without injustice to those whose money and directing brains make possible a successful and combined plan of all.

* * *

The rich lands of our nation tend to go to the ownership of men of wealth and the labor on them to be performed by the itinerant workman and the tenant, each making a mere living, contributing little or nothing to the social betterment of the community, in the life of which he takes little part. If this condition is to be correctly adjusted, you, as citizens, successful each in his own line, each in proportion to his measure of ability, influenced only slightly by the accident of circumstances, must by virture of self-interest and pride in the profession of agriculture, give all your thought and time and strength to these problems in whatever community you find yourselves.

The farm bureau meeting, the good roads, the school, the church, political and social life, all need your participation. It is not enough to vote, to pay taxes or pew rent, but you must think out loud in meeting to the end that the ultimate thought of your community shall be that which is best for all. In no other branch of effort does the so-called private citizen count for so much in our great democracy as does the successful land owning and occupying farmer who rears a family and takes his full share in the active life and discussion of the problems of his community.

This is the opportunity which the profession of agriculture opens to you, the opportunity to be more than a money maker, to be an influential citizen.

IMPORTED HONEY

The imported honey which arrives on the New York market comes from the West Indies and Central America, most of the shipments from the West Indies and from the islands of Cuba, Porto Rico and Jamaica. Shipments from these islands are made in barrels, tierces and cans. Only a few five gallon cans are received, the majority of the imports are in barrels. The cans used in these Central American shipments differ from ours, however, in being for the most part miscellaneous five gallon oil and gasoline cans which have been shipped into the country. These cans are supposed to be thoroughly cleaned before being refilled with honey, but on account of the rather crude methods used in Central America the cleaning process is not always thorough. For this reason, it is at times almost impossible to dispose of honey which has been shipped in these cans. Furthermore, the shippers often make use of the same old crates in which the cans came to them, to ship back the honey. This does not add to the market value of the honey. These cans are undoubtedly pressed into service because of the apparent scarcity and rather high price of barrels in Central America.

GLENN COUNTY FARM BUREAU

All meetings at 8 p. m. unless otherwise stated:

July 14, Codora; July 16, Calay; 18, Plaza Farm Center; 21, Willows Farm Center; 23, Elk Creek, 2 p. m.; 23, Grapevine, 2 p. m.; 25, Larkin Grapeville, 2 p. m.; 26, Directors meeting, 10 a. m. On Saturday, July 14, at 10 a. m. a call meeting will be held at Willows of the Woman's Home Department Committee.

TEHAMA COUNTY FARM BUREAU MEETINGS

Antelope, July 8; Dairyville, 9; Oak Park, 11; Corning, 16; Bend, 18; Richfield, 21; Los Molinos, 28. A directors' meeting will be held Friday, July 25, in the Chamber of Commerce of Red Bluff at 1:15 p. m. sharp. All regular center meetings will be held at 8:30 p. m.

A rice mill and grain elevator are proposed for Live Oak, Sutter County.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Mortgage Outlawing

In the case of a mortgage which is outlawed by running four years after maturity, will payment of interest automatically renew? If not, is the note outlawed or is it collectable providing the mortgagor has personal or other property, or does the note outlaw as well as the mortgage? Is there any recourse whereby the mortgagee may secure relief?—Subscriber, Riverside.

The lien of the mortgage follows the note; when the statute of limitations has run upon the note, it also runs upon the mortgage. Payment of interest on loan does not in this state renew an outlawed obligation, but it requires a promise in writing to pay the obligation by the debtor. The statute of limitations is a shield rather than a sword; the fact that it bas run upon an instrument which constitutes a lien on real property does not thereby remove the lien upon the property. If the mortgagee is in possession of the property or can obtain peaceable possession, the owner thereof cannot put him out, nor would the owner of the property, who is the debtor upon the mortgage be successful in any attempt to maintain an action on its title, which the note constitutes. The fact that a note is outlawed does not mean that it is non-collectable. In case suit is brought thereon it would be for the party claiming the bar of the statute to allege that bar. An outlawed note is a good consideration for a new obligation.

Contract Can Be Enforced

I entered into an agreement with the owner of a ranch to manage it one year for $50 per month and 20 per cent of the profits. After six months the owner sold the ranch; the new owner refuses to recognize the old agreement but has made payments of $50 per month to me. Can I collect the baiance on my contract from the man with whom I made it or from the present owner?—Subscriber, Pond.

You certainly have an action for your 20 per cent of the profits against the man with whom you made the agreement. If the present owner has not recognized that agreement you cannot hold him thereto. His mere payment of $50 per month is entirely consistent with a new employment.

Right to Remove Fence

I purchased a parcel of land two years ago, over one corner of which a wire fence was placed. There are no line fences around the land or on adjoining land. This fence was placed by a concern which owned all of the land at this point, for the purpose of inclosing the pasture. Have I the right to take up a section of the fence crossing my land, use it in another place, or sell it, or am I required to move it along the line and put it up to keep pasture, leaving my land free?—Subscriber, Chula Vista.

Unless there was some right retained by the original owner to use a part of this land as pasture, which is in no wise stated in the question, you are entirely within your rights in taking up the section of the fence and using or selling it as you would any other property which you purchased. You are not required to inclose your land if you do not wish to do so, and you are not required to protect another man's pasturage.

Community Property—Joint Tenancy

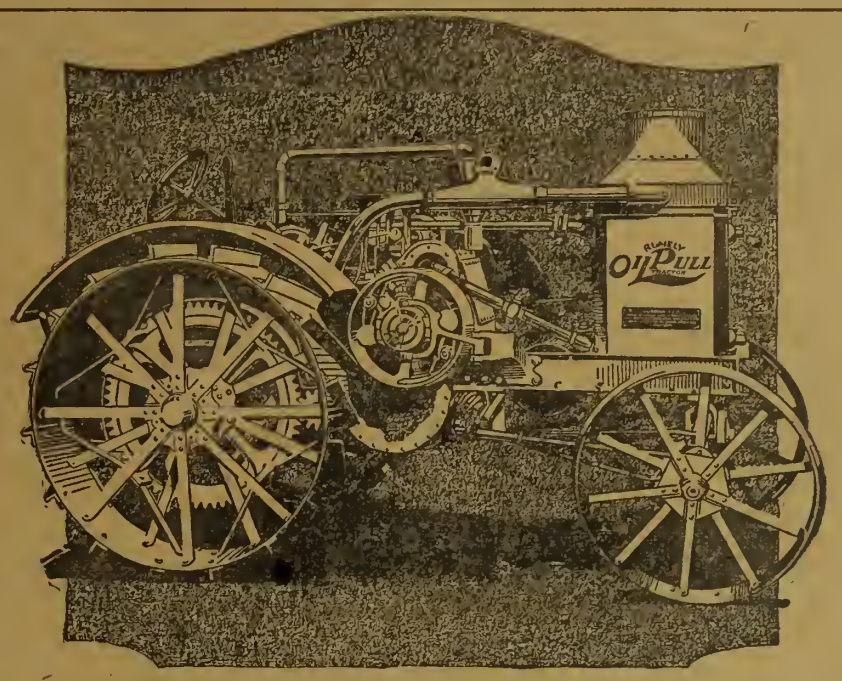
What is the difference between community property and joint tenancy? What is the difference in the administration and expenses relative to these properties? Can community property be changed to joint property? Or would it be advisable to do so while all property now stands in the wife's name?—Subscriber, Ontario.

Property held in joint tenancy may or may not be community property; it has reference to the legal title under which the property is held. In order to place property in joint tenancy it is necessary that it be deeded to the joint tenants by a third party under tenure to be held to the joint tenants or to the survivor. Under the recent act of the legislature bearing upon the subject of community property, such property practically follows the same rules as are applicable to property held in joint tenancy, that is to say: Upon the death of the wife, one-half of the community property belongs to the surviving husband, the other half is subject to the testamentary disposition of the wife, except that she cannot will that property to any one other than her husband or children by marriage without the consent of the husband indorsed on the will in writing. In the absence of such testamentary disposition the entire community property goes to the surviving husband without administration. In case the wife does make testamentary disposition of her half, the entire property is subject to the community debts and expenses of administration. The husband shall be continued in the management and control thereof and from time to time account to the estate. Upon the death of the husband one-half of the community property belongs to the surviving wife and the other half is subject to testamentary disposition of the husband under the same limitations as provided in the case of the wife, but in the absence of such testamentary disposition, it all goes to the surviving wife upon administration. The one-half of the community property belonging to the surviving spouse is not subject to any inheritance tax, nor is it to be reckoned as part of the estate for the purpose of fixing the compensation of the administration. The whole of the property may be held for inheritance tax. In the case of the death of the wife leaving no will, the fact of such intestacy and of her death may be determined by filing a petition alleging the facts, which upon proof results in a decree establishing the fact of death and that no will was left. In order to vest property in the survivor under a joint tenancy deed an exactly similar petition and decree is required.

Son Tries to Claim Property

My son is living with me, working on my place. He verbally agreed to work the place for a share of the profits during his life and his share of land after my death. He has invested no money on the place, except what I furnished him and what he made on the land. He now wants to own the land, threatens me with suits for his labor and makes life miserable for me. Can I homestead the land in order to avoid any claims which he may make, or what can I do?—Subscriber.

As the agreement between you and your son was a verbal one, which could not be performed within one year, it is void by the statute of frauds. There is a presumption of law that where relatives reside together upon a place and the one renders services in respect to the place to the other, that the law will imply no promise



The New 12-20 RUMELY OilPull TRACTOR

Cheapest in Cost per Year of Service

On what basis are you going to buy *your* tractor—by the dollar of cost or by the years of service?

Advance-Rumely is one tractor manufacturer who insists upon putting quality first. By quality we mean rugged, dependable construction, surplus power, real fuel economy and all around service.

In building the new 12-20 OilPull, Advance-Rumely refused to put out a cheap, lightly constructed tractor. We know and you know that durability can't be combined with cheap, light construction. And if a tractor won't "stand the gaff" nothing else about it counts for much.

We have embodied the proved OilPull ruggedness and substantial construction in this small, light weight 12-20. And by light weight we mean *right* weight—the proper weight to give long lasting, year after year, dependable service.

Like all OilPull tractors, the 12-20 is backed by a *written guarantee* to burn successfully all grades of kerosene under all conditions, at all loads to its full rated brake horsepower.

And just as Advance-Rumely guarantees its OilPull tractor as a cheap fuel burner, it insists upon giving the purchaser a surplus of power. The 12-20 rating is based upon only 80 per cent of its maximum power efficiency—a 20 per cent overload capacity when you need it. This means further insurance of long life—a tractor that will be doing the same good work five years hence as in its first season.

The 12-20 is oil-cooled—no evaporation and the radiator can't freeze. The circulating system is always open and oil preserves the metal parts. The OilPull cooling system keeps the motor at the right temperature at all loads—the harder the OilPull works, the cooler it runs.

On the 12-20 the belt pulley is on the right hand side—up within full view of the operator. The 12-20 can be lined up with a belt machine, backed into the belt and the belt started and stopped from the platform. The belt pulley is driven direct off the crankshaft—no loss of power.

The 12-20 OilPull will pull three 14-inch bottoms under ordinary conditions and a proportionate number of disc plows. It will operate a 22-inch thresher fully equipped and economically handle all other power jobs, drawbar or belt.

To safeguard the customer's best interests Advance-Rumely maintains 27 branch offices and warehouses, each equipped to give immediate service in machinery, parts and expert help.

The wise farmer will buy a tractor by the year—not by the dollar. Just as the OilPull will plow an acre at lower cost than any tractor built, its cost measured in years of service makes it the cheapest tractor obtainable.

Ask for the catalog describing the new 12-20.

ADVANCE-RUMELY THRESHER CO., *Inc.*
La Porte, Indiana

San Francisco, Cal.,
17-19 Main St.

The Sweetness of Low Price never equals the Bitterness of Poor Quality

Fuel—Guaranteed to burn kerosene successfully under all conditions.

Cooling—Oil cooled—no evaporation—non-freezing.

Motor—Heavy duty, 2 cylinder 6 in. x 8 in.—560 R. P. M.

Crankshaft—Built to U. S. naval specifications.

Frame—Hot riveted steel members—no bends—no splices.

Transmission—Cut steel gears—enclosed and running in oil.

Bearings—Hyatt roller bearings in transmission and rear axle.

Governor—Fly ball throttling type—automatic speed regulation.

Belt Pulley—19 inch diameter—running directly off crankshaft—no intermediate gears.

Lubrication—Force feed and splash.

Speeds—Two forward—one reverse.

Drawbar—Adjustable spring drawbar.

BACKED BY WRITTEN GUARANTEE
OilPull
ADVANCE-RUMELY

ADVANCE-RUMELY

upon the part of the person to whom the services were rendered to pay for such services, but upon the other hand, presumption is that they live together and serve one another for mutual convenience. As the agreement between you and your son is void by the statute of frauds, he could only recover upon the implied promise to pay the reasonable value of the services, but as seen the law does not imply such a promise under the fact stated.

The homestead law applies up to $5000 to all heads of families. The head of the family is every person who has, residing on the premises under his care, and maintains, a minor child, child of deceased wife of husband, minor brother or sister or minor children of said deceased brother or sister, father, mother, grandfather or grandmother, or such relatives of the deceased husband or wife, an unmarried sister or other relatives mentioned who attain the age of majority and are unable to care or support for themselves. The homestead up to the value of $1000 may be selected by any other person. Homestead so selected is exempt from execution upon any claims other than for a mechanic's lien or other encumbrances upon the property.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Sour Crop

I have a young gobbler whose crop fills up with water. Have tried giving him castor oil but the quickest way to remove it seems to be to hold him up by the feet and work the crop gently. There do not seem to be any solids in what he throws up. He eats fairly well, droppings are normal but thin, and he has lost all the feathers off his breast. He runs on a large range and I do not feed any grain at home.—Subscriber, Oroville.

Perhaps your turkeys are not getting enough hard grain on their range. Perhaps too, they lack the grit necessary for grinding their food. All birds need hard grain to keep the digestive organs in good condition. It would be well, I think, to keep them shut up a portion of the day for a while, to make sure they are getting grit, grain and succulent green, which they may fail to get when they are out. Onions and onion tops chopped with rolled oats are excellent for keeping a turkey's digestion in order. To this may be added charcoal, unless the birds will eat it alone. Charcoal is a wonderful sweetener for a sour crop. If the grit, charcoal and green feed do not remedy the difficulty try a little bicarbonate of soda in the drinking water or mixed in a small quantity of moist mash, but keep grit and charcoal before the birds and make sure they have wheat or barley or both.—J. A. K.

Killing Morning Glory and other Weed Pests

Would like to hear from some one through your valuable paper who has had experience in killing out wild morning glory, sour clover, devil grass and malva.—Subscriber, San Fernando Valley.

The only entirely satisfactory weed killing arrangement consists of thorough cultivation. Early in the season the chisel tooth or deep working tool is to be preferred, but at this period, when moisture should be kept in the soil as much as possible, more shallow cultivation is to be preferred, so at this moment the long weed cutting knife is perhaps the best. Of course where land is old and foul the knife clogs badly and the use of A-shaped knives on the old A-cultivator or on the wheel cultivator proves more satisfactory and does not clog to any extent. Control with chemicals has not proved satisfactory, that is, where it is attempted on a commercial scale. If one pays no attention to cost it might be made possible but so far "main strength and awkwardness", or real work with the cultivator and strong enough team to pull through the weed patches, is the only satisfactory control.

Gum Disease

What is the remedy for orange trees infected with gum disease? How can I prevent this disease from spreading to healthy trees?—Subscriber.

The best treatise yet given on gummosis is that by Prof. H. S. Fawcett. An outline of his investigations was given in the Cultivator of August 6, 1914. In a word the process consists of cleaning away carefully all exuding gum and diseased appearing bark, cutting with a sharp knife down to clean healthy wood. The wound is then painted over with Bordeaux paste. A good formula for a small quantity is: One pound of bluestone (copper sulphate) dissolved in three quarts of water in a wooden, earthen or glass vessel; and two pounds unslacked lime slaked in three quarts of water in a separate vessel of any kind. When the lime is cool, stir the two together, making a slightly pasty light blue mixture. On a larger scale the formula would be 12 pounds of bluestone to eight gallons of water, and 24 pounds of lime to eight gallons of water. The bluestone is easily dissolved by suspending it in a sack at the top of the water over night. If the bluestone is pulverized and suspended in warm water it dissolves rapidly. Good lime that is not air slaked should be used, and after slaking it with the water it should be allowed to cool before being used in making paste. If covered to avoid evaporation each ingredient will keep indefinitely, but after mixing the paste slowly deteriorates. Where it is being used over a number of days or weeks, just enough of the wet slaked lime and the bluestone solution should be mixed to make paste enough to last for one or two days, leaving the remainder unmixed in separate vessels. It may be applied with large brushes as is whitewash.

Gophered Apricot Trees

In an apricot orchard I recently purchased are quite a number of trees where the gophers have eaten the bark half way around the trunk. The crop on these trees is maturing quite a bit sooner and the trees did not leaf out as well as the others. Is there anything I could put around the affected parts to save them from dying? —Subscriber.

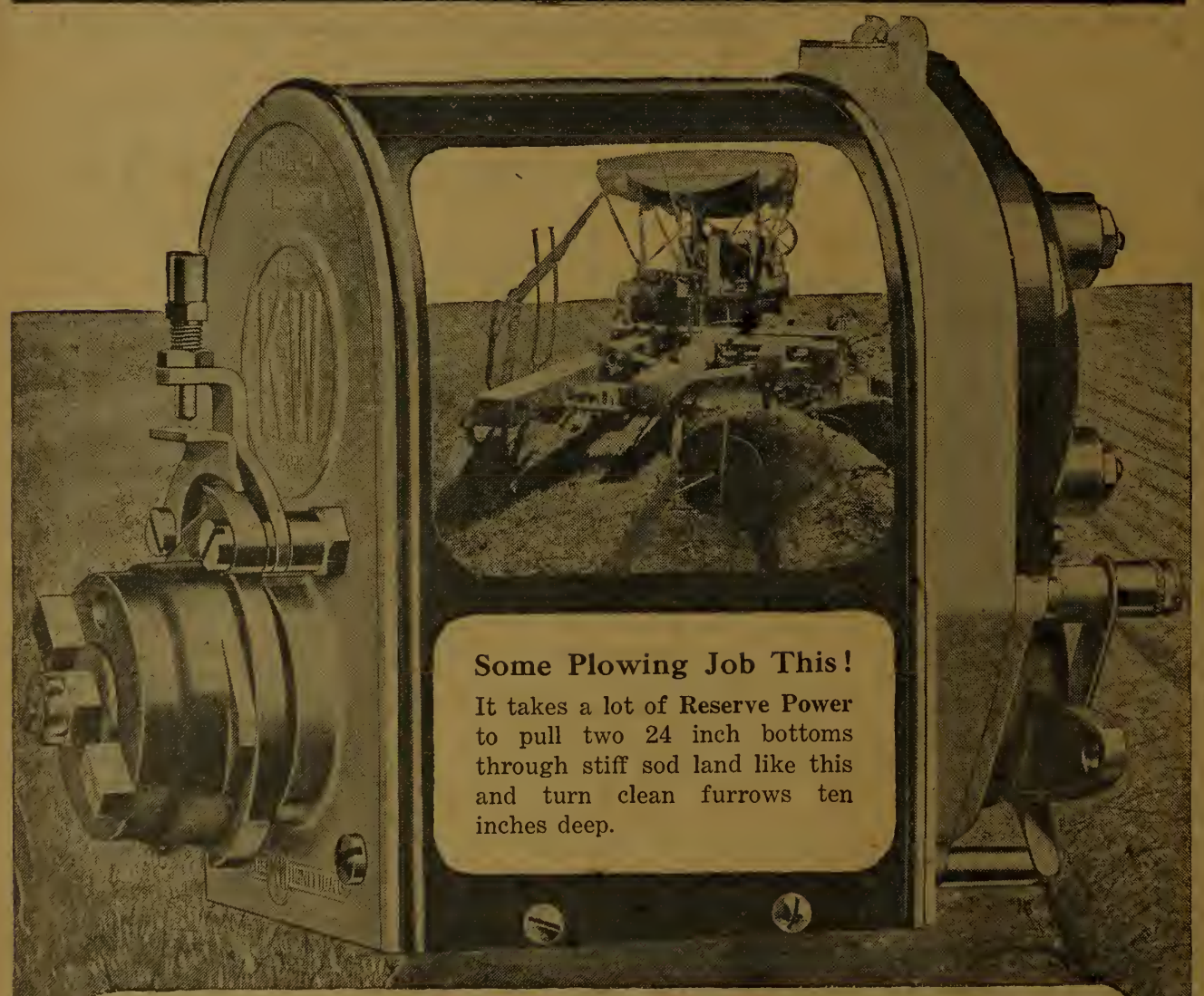
There is little comfort in trying to save apricot trees which have been gophered as long as these have been If the trouble is discovered as soon as done and the wound covered and kept moist until new bark forms the tree may go on and be but little the worse. But when the gophered portion has dried and, in fact, died, the base of the tree will be so weakened and the chances so against profitable bearing that it is possible the best method would be to remove and plant new and thrifty trees. However, trees in this condition offer a case for individual study as to whether they are worth the effort to save.

Campanula

What is plant which I send? It grows along the irrigating ditches.—Subscriber, Brawley.

This is a campanula, of the same genus as the hare bells, blue bells and Canterbury bells.

TRADE K-W MARK **High Tension MAGNETOS** Fire Any Kind of Fuel and Get Maximum Power Out of Every Drop Used



Some Plowing Job This!

It takes a lot of **Reserve Power** to pull two 24 inch bottoms through stiff sod land like this and turn clean furrows ten inches deep.

This Reserve Power is only available when the fuel is fired by the hottest spark known, such as that delivered by a K-W High Tension Magneto.

This K-W equipped Holt tractor pictured here makes easy work of jobs like this, because the K-W Magneto gives the hottest known spark, timed accurately. This intense spark fires the mixture rapidly, thus releasing the energy contained in the fuel in the shortest possible time and delivering maximum power to the piston.

Owners of K-W equipped tractors are also able to fire leaner mixtures and use cheaper grades of fuel and still develop full power from their engines. As a result they materially reduce their plowing cost per acre.

But of even greater importance than this fuel saving and reserve power is the Reliability of K-W Magnetos. This known reliability is only natural because K-W Magnetos are built for tractor service and made their reputation for reliability on tractors. Two manufacturers have used K-W Magnetos as standard equipment for over 9 years; 18 for over 5 years; as many more for from one to 5 years.

Time is the Only Test of Reliability.

Make sure the tractor you buy is K-W equipped. Write for a list of K-W equipped tractors and free booklet, "Plow This Additional Acreage Without Fuel Cost."

THE K-W IGNITION Co. (TRADE K-W MARK)
2895 CHESTER AVE. CLEVELAND, OHIO. U.S.A.

Live Stock News Notes

SALE CALENDAR

Shorthorn Cattle

August 2, Butte City Ranch, Butte City.
October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

August 20. Fresno County Poland-China Breeders' Association, Fresno.
September 17, John M. Bernstein and W. L. Haag & Son, Hanford.
October 7, Bassett, Ross and Crawshaw, Hanford.
October 18, Trewhitt, Vaughan and Nehis, Hanford.
October 29, Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine

August 2, Butte City Ranch, Butte City.

Duroc-Jersey Swine

July 16, Tulare County Duroc-Jersey Breeders' Association, Tulare.

Hampshire Swine

August 6, Francis T. Underhill, Santa Barbara.

Shropshire Sheep

August 2, Butte City Ranch, Butte City.

Holstein Bull Sales

R. C. Sturgeon, breeder of Holsteins and Duroc-Jerseys, reports the sale of two young Holstein bulls just ready for service. C. H. Annis of Shafter got one and the other went to Fackler Bros., Lemoore.

Ships Berkshire to Indiana

W. F. Sandercock, Sacramento, owner of the Natoma Rio herd of Berkshires, has just sold a sow pig sired by Baron Duke 201st, Omaha national grand champion, and from Princess Leader, to Moore Brothers of Zionsville, Indiana. This is of particular interest due to the fact that Princess Leader is the only Berkshire in the world sired by a world's champion and from a world's champion dam. The pig, Natomas Princess Leader, combines the blood of two world's champions and a national grand champion.

Looking for Black and Whites

J. E. Dugan, formerly one of the farm school boys at Davis, writes from the E. C. Schroeder farm, breeders of Holstein-Friesians, Moorehead, Minnesota: "Am out here gathering a little data on these big black and whites and getting a working acquaintance with some of the daughters of old Sir Pietertje Ormsby Mercedes.

National Swine Show to Des Moines

The National Swine Show committee has just completed arrangements with the Des Moines Chamber of Commerce, whereby the Fourth Annual National Swine Show and Exposition will be held at the Iowa state fair grounds, September 29 to October 4, 1919. The regular classification which has been used heretofore in this show will be followed, excepting for a very few minor changes. In addition a ham and bacon show and corn show will be held. Premiums are offered to the extent of about $500 for each of these divisions. On Monday, the opening day, the college students' judging contest in addition to other special judging contests, which will be announced later, will take place. Already enough teams have promised to participate in the college classes in order to insure its success. An added feature to the 1919 show will be the pig club round-up for which approximately $1,000 is offered. Pigs of various breeds, which have won in their respective counties, will be eligible to show in this contest. Special dispensation has been made for entry fees and pen rentals for pigs in pig club classes.

State Fair Premium List Issued

Chas. W. Paine, secretary of the state board of agriculture, has issued the premium list for the sixty-fifth California state fair which will be held August 30 to September 9, and copies of the same may be secured by addressing the secretary. Over $45,000 is offered as prize money in the various departments besides many special premiums offered by different associations. Several new features appear in the classification, and in some instances the rules have been modified to meet changing conditions and to modernize the show.

Farmers Interested In Coming Duroc-Jersey Sale

The interest being displayed by the farmers in the coming sale of Duroc-Jerseys by the Tulare County Duroc Breeders' Association is a sure indication as to how this breed stands with them, according to R. C. Sturgeon secretary of the association. Mr. Sturgeon, who is consigning 10 bred gilts by Golden Colonel and California Cherry Chief, states that with the exception of a few that will go into the breeders herds the entire offering of 600 head will go on the farms of Tulare County. As a result of this sale it is expected that a number of new breeders will be established who will assist in making Tulare County famous for its Duroc-Jerseys. Entering Tulare County from any direction one sees these signs—"Tulare County, the County of Good Roads." Sturgeon says the signs will soon read "The County of Good Roads and Duroc-Jerseys." Ample provision has been made for the entertainment of a large crowd and all are cordially invited to be the guests of the Tulare County Duroc-Jersey Breeders' Association, Wednesday, July 16.

Thompson to Judge Berkshires at International

Friends of Professor J. I. Thompson of the division of animal husbandry of the University of California are greatly pleased by the announcement made by L. E. Frost, of the Berkshire World, that Thompson will judge the Berkshire breeding classes at the 1919 International Live Stock Exposition to be held at Chicago. Thompson, who is in charge of the swine department of the university and who is secretary of the California Swine Breeders' Association, is regarded as one of the leading swine judges in the United States.

New Hog Records at Portland and Chicago

Last week record prices for hogs were registered at Portland and Chicago. On the Portland market the new record was set at 21 cents, and at Chicago hogs sold to 22 1/2 cents. California markets are scarcely reflecting the keen demand experienced at other markets.

True Back From Hawaiian Islands

Professor Gorden H. True, head of the division of animal husbandry, University of California, has returned from the Hawaiian Islands where he went to judge live stock at the Annual Territorial Fair. Professor True is enthusiastic over the progress being made in live stock improvement on the Islands and believes that that market can be developed by California breeders. He predicts that before many years Island herds will make their appearance in show rings of the Mainland.

Liquid Gas

For Citrus Tree Fumigation

Made from Areo Brand Grade Cyanide furnished by The American Cyanamid Co. of New York

Our plant is nearing completion and will be ready to make liquid gas in any amount required. As previously stated, we have made connections with the American Cyanamid Company of New York, which is going to furnish us with cyanide for our entire output of gas this season, at a price which makes it possible for us to furnish you the liquid gas at the rate of 65 cents per pound at the plant at Azusa. We will contract to do this in any quantity and the quality will be guaranteed under state inspection to be 96.98 per cent pure. Containers for same will be sold to you at the plant, at cost. Pumps will be about the same price as last year. Delivery has been arranged for at a price which will cost much less than you can afford to haul the same for, and this delivery is guaranteed to be satisfactory.

This gas is made under our patents granted by the U. S. Patent Office, and our improved methods and enlarged plant, built under specification of the most skilled engineers and chemists employed by the American Cyanamid Company, make it possible to render you the service that you will require, and our guarantee is backed by them.

We invite you to the plant at any time, and will be glad to show you its workings.

Owl Fumigating Co.

ERVIN DINGLE WILLIAM DINGLE
Originators and Patentees of Liquid Gas Method of Fumigating.

Office and Plant, Azusa, California
Los Angeles Office, 209 Washington Building

The Hampshire Hog

This hog has become America's most popular hog through the quality of the Hampshire alone.

The 1918 International Livestock Show was his last great record, winning grand championship over all breeds, and selling for $2.25 per hundred above his nearest competitor.

Public Sale of Hampshire Bred Sows

Underhill Ranch, Santa Barbara, California, August 6th.

Free information, free literature, and public sale catalogue by addressing

WALTER FOLK, Western Representative,
Hampshire Record Association,
SANTA BARBARA Route No. 2 CALIFORNIA

Registered Holsteins For Sale

Sixteen head pure bred Holstein cows and heifers, all milking age. Lack of feed compels me to sell at once and priced accordingly. Very best of breeding. Records as high as 25 pounds. Large type and in A-1 condition. Come and see them without delay.

W. A. WALKER
Half Mile North of Ripon

Quick-Fat FEEDS

get results—they digest easily

Quick-Fat Complete Hog Feed MAKES MORE PORK

Quick-Fat Alfalfa Meal and Molasses MAKES MORE MILK

Get a bag today from your dealer—or if he does not stock it as yet, write direct to the factory.

Manufactured and Guaranteed by **I. S. CHAPMAN & CO., Inc.** Chapman Building San Bernardino, Cal.

Closing Out Sale Poland Chinas

SEVEN BROOD SOWS WITH LITTERS AND TWO YEAR OLD REGISTERED BOAR, SMOOTH JUMBO WONDER.

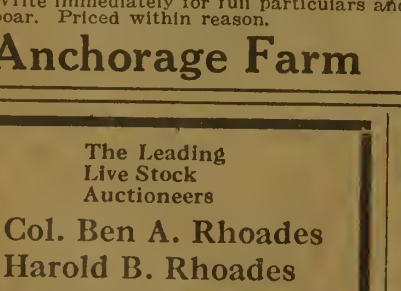
Owing to other interests I have decided to close out my entire herd of Registered Poland-Chinas, including my herd boar, Smooth Jumbo Wonder, sired by Mouws Jumbo Wonder—$2600 refused for him. Each of the seven sows have nice litters or are bred. Splendid opportunity to obtain a profitable herd or breeding stock. These hogs must be seen to be appreciated.

Chas. A. Rives 10th and Laurel Streets Burbank, Calif.

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.



The Yankee

has sent one of his best sons to California in THE YANKEE Jr. This is the blood now demanded in the east. California breeders can get it in my bred sow sale Sept. 17th.

JOHN BERNSTEIN Hanford, Calif.

Lendorris Ranch

Two superb sires—Young Jumbo 800 pounds in breeding condition. Lendorris Liberty Bond 345 pounds at seven months. Two such splendid sires are rarely found on one breeding farm.

W. L. Haag & Son Hanford, Calif.

Bred Sow Sale Sept. 17, 1919

Take a Look at Blue Valley Model

One of our promising young boars. Strictly Big Type. Aged sire Greenfield's Special by Superba. Big Type Polands that satisfy. Write

Poland China Ranch H. B. Peake, Mgr.
San Bernardino, Calif.

ANCHORAGE FARM BERKSHIRES ARE PROFITABLE

Future Champions Can Be Secured NOW

by placing your order for a young Berkshire boar from the famous Anchorage Farm herd. Star Leader and several of his sons have been mated with our large type Berkshire sows. Star Leader is famous wherever good Berkshires are known.

One of these young boars will not only add size and vigor but will add the quick maturing qualities demanded by pork producers.

Write immediately for full particulars and breeding and secure your future herd boar. Priced within reason.

Anchorage Farm Orland, Calif.

The Leading Live Stock Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

BERKSHIRES

Ames Rival 70th

State Grand Champion 1918

Introduce his blood into your herd through weaners from his litters.

We guarantee you absolute satisfaction or all money refunded.

James Mills Orchard Corp.,
Hamilton City, Cal.

The University Dairy Herd

By F. W. Woll, Professor of Animal Nutrition, University of California

MANY of your readers will no doubt be interested in the production records of cows in the University dairy herd at Davis, shown in the accompanying table. The herd numbers 50 cows at the present time, the following grades being represented: Holstein, Jersey, Guernsey, Ayrshire and grades. In addition there are about 60 head of young stock—heifers, bulls and young calves—and four service bulls of the breeds stated. The grade cows, which are mostly high-grade Holsteins, are kept for experimental purposes and for the production of milk for the University creamery, while the pure breds serve the same purpose and are also used for teaching our students the characteristics of the main dairy breeds, judging dairy cattle, etc. The average daily production of the herd, including grades and heifers with their first calves, is at present for 38 cows in milk, 27.6 lbs. milk and 1.07 lbs. butterfat; average fat content 3.9 per cent.

The following are the service bulls kept: Holstein, Sir Colantha Juliana 2d, 98762; Jersey, Owl of Belleview, 106305; Guernsey, Squire of Richneck, 38809; Ayrshire, Lotus Jean Armour's Laddie (loaned to the University by J. Henry Meyer of San Francisco).

The list of advanced registry records given includes two seven-day records under 10 lbs. of butterfat (made by two 2-year-olds); 11 come between 10 and 15 lbs.; five between 15 and 20 lbs.; and three over 20 lbs., the maximum seven-day record being that of the Holstein cow, Korndyke Senorita, 194170, of 23.53 lbs. butterfat, corresponding to 27.46 lbs. 85.7 per cent butter and 29.42 lbs. 80 per cent butter.

No special effort has been made to secure high seven-day records, as it is considered that yearly or 10 month records furnish a much more reliable measure of a cow's capacity for dairy production. Of the yearly tests in the herd, 10 come below 400 lbs. of butterfat; 15 between 400 and 500 lbs; seven between 500 and 600 lbs; five between 600 and 700 lbs, and four over 800 lbs. The highest yearly record, 940.72 lbs., recently completed by the Jersey cow. Interested Jap's Santa, 296928, is 135 lbs. higher than her previous yearly record, which placed her at the head of Jersey cows in the state so far as yearly production is concerned.

The present members of the University dairy herd are largely of our own breeding and no large sums of money have ever been expended in building up the herd; it has been gradually improved through selection and careful methods of breeding and management until it must now be considered a most valuable herd and one that California dairy farmers and others interested may well be proud of.

The following table indicates a number of the top records of production made in the University herd:-

Name—	Pounds Butterfat 7 Days Y-M	305 Days Y-M	1 Year Y-M
HOLSTEINS			
Agnes Colantha, 169993	10.356 (2-5)		404.87 (2-5)
	11.083 (3-9)	401.76 (5-3)	394.61 (3-9)
			567.82 (6-3)
Bess Fayne Concordia, 217769	13.74 (4-8)		
California Agnes Colantha, 282566	9.43 (2-5)	358.07 (2-5)	415.69 (2-5)
California Inka Colantha, 229254	10.096 (3-3)	404.88 (4-3)	
	14.670 (4-3)		
California Juliana DeKol, 233160	14.098 (2-9)	286.63 (2-9)	303.48 (2-9)
California Teake Lyons Queen, 259965	9.837 (2-5)		
Col. 4th's Lad Mercedes, 118898	15.158 (4-7)		613.27 (4-7)
Korndyke Senorita, 194170	14.539 (3-1)		498.07 (3-1)
	21.927 (6-2)	642.72 (6-2)	718.71 (6-2)
	23.535 (7-6)		340.40 (7-6)
Pietertje Bloom, 66816	18.030 (5-6)		678.04 (9-11)
Pietertje Bloom 2d, 169995	10.398 (2-3)		460.72 (2-3)
	17.879 (5-1)	592.55 (5-1)	603.42 (5-1)
Pietertje Lorena Korndyke, 217767	11.727 (2-7)	359.36 (2-7)	402.54 (2-7)
	15.305 (4-2)	552.74 (4-2)	630.27 (4-2)
University La Polka Lady, 217774	14.519 (5-9)		544.47 (5-9)
University La Polka Lady 2d, 217776	10.892 (2-6)	341.50 (2-6)	360.34 (2-6)
JERSEYS			
California Insie, 310598			361.34 (2-5)
			590.75 (3-8)
Interested Jap's Santa, 296928			353.71 (1-9)
			588.16 (2-11)
			805.72 (4-2)
			940.72 (5-7)
Meridale Jap's Nora, 296929			489.42 (4-5)
			342.48 (2-3)
			368.61 (3-4)
Mermaiden's Fern, 269301	16.42 (4-8)		536.82 (4-7)
	20.40 (7-0)		495.77 (5-10)
			544.73 (6-11)
			638.71 (8-2)
Mermaiden's Fern 2d, 297608			339.22 (2-3)
			466.03 (3-5)
			729.55 (5-0)
GUERNSEYS			
Atlantis Viola K., 26813			435.85 (6-5)
Fern Ridge Pearl, 30903			398.46 (4-9)
Fern Ridge Rose, 36403			436.41 (3-0)
			425.03 (6-4)
Langwater York Rose, 24202			445.57 (6-5)
			498.67 (9-7)
AYRSHIRE			
Willowmoor Cherry, 25992			445.01 (4-9)
			440.01 (7-5)
			551.41 (8-7)

Regulations for Traffic in Tubercular Cattle

The regulation prohibiting, after July 1, 1919, the interstate movement of cattle for breeding or dairy purposes unless they are properly tuberculin-tested, will prove to be a long step toward the control of tuberculosis and its eventual eradication in this country, according to officials of the United States department of agriculture. It supplements and strengthens state regulations on this subject.

The object of the regulation is specifically to prevent the interstate shipment of diseased animals to cattle breeders or dairymen who are trying to drive out or keep tuberculosis from their herds. Cattle consigned to a public stockyard, and steers and strictly range cattle may be moved interstate without restriction under the new regulation.

Copies of the regulation, which has

CALIFORNIA FAIRS

NAME	PLACE	DATE	SECRETARY
California State fair,	Sacramento	Aug. 30-Sept. 6	Chas. W. Paine
Fresno District Fair,	Fresno	Sept. 30-Oct. 4	C. G. Eberhart
Glenn County Fair,	Orland	Sept. 20-Oct. 4	E. A. Klrk
Humboldt County Fair,	Ferndale	Sept. 16-18	W. S. Moore
Kings County Fair,	Hanford	Sept. 22-27	Frank C. Russell
Napa County Fair,	Napa	Sept. 18-20	E. P. Locarnini
Salinas Big Week and California Rodeo,	Salinas	June 25-29	M. P. Keef
Southern California Fair,	Riverside	Oct. 7-11	W. W. Van Pelt
Ventura County Fair,	Ventura	Aug. 13-16	L. P. Hawthaway
California Industry and Land Show,	San Francisco	Oct. 4-19	E. H. Brown
Tulare County Live Stock Show,	Tulare	Oct. 6-11	E. A. Miot
Los Angeles Live Stock Show,	Los Angeles	Oct. 18-27	C. R. Thomas

been issued by the secretary of agriculture and is known as Regulation 7 of bureau of animal industry order 263, are being printed, and will be available soon for cattle owners, dealers, veterinarians and others who may desire them.

The regulation of interstate movement of cattle follows the same principle used successfully in the control of other animal diseases, and has been recommended to the department of agriculture by many cattle owners as an essential part of the campaign against tuberculosis, which is now getting well under way, and in which the federal government and 42 states are cooperating.

Cattle known to be tubercular may be moved interstate for immediate slaughter upon federal inspection. They must be marked for identification; must be accompanied by a certificate showing their condition, that they may be shipped interstate, and the purpose for which they are shipped; transportation companies must identify the cattle as tubercular on waybills and other papers; cars or boat compartments in which they are moved must he cleaned and disinfected under bureau regulations; and the cattle must not he transported in cars or boat compartments containing healthy cattle or hogs unless the latter are for immediate slaughter.

Pure-bred cattle which have been shipped interstate for breeding or feeding purposes, and which have reacted to the tuberculin test subsequent to such shipment, may be reshipped interstate upon proper certificate for purposes other than slaughter, provided they are consigned to the original owner at the same point of origin; the reshipment must be made within four months of the original shipment; they shall not be shipped to any state or territory that does not provide for quarantine of tubercular cattle; they can not again be shipped interstate except for immediate slaughter under government inspection; requirements of identification and disinfection must be observed.

Briefly, heifers may be moved interstate for feeding or grazing on certification that they will not be used for other purposes, and cows may be shipped interstate from public stockyards on affidavit to the same effect. Bulls may be shipped from public stockyards for feeding provided the owner or shipper makes affidavit that they are for feeding only, and the state to which they are shipped provides for quarantine. The regulations give further details.

Cattle from a herd officially accredited as free from tuberculosis may be shipped interstate if accompanied by official certificates showing they are from such a herd.

Tuberculin tests for the detection of tuberculosis may be made by veterinary inspectors of the bureau of animal industry at public stockyards or regular bureau stations or by a veterinarian of the state of origin, authorized by the state and approved by the bureau of animal industry.

Stray Thoughts of a Cowman

By A. L. Spellmeyer

The man who is cocksure about anything relating to cattle conditions and prices at the present time is merely lahoring in the vale of ignorance. Nothing is sure. Two and two should make four, hut don't. Supply and demand should regulate price, but a lot of other things including the sweet will of our all-powerful packers affect results.

Our country has millions less cattle and millions greater population than a few years ago. It has also thousands of medlcal and other writers who tell us to eat less meat, and consumption is affected. Hog meat has increased and ls the big staple. Cattle and sheep have not increased.

It was easy to foretell, in view of plentiful grass prospects, that the price of fat cattle was due to fall, but it seemed then plentiful, natural, cheap feed would result in a demand for cows and younger stock, which has not materialized.

The figures put a shortage in the Northwest of 600,000 head, a shortage in Texas of 40 per cent, of millions of head, and a shortage in California of 10 per cent, which is negligible, considering the fact that will be the safety margin learned by the cattlemen during the past two drouthy years. Notwithstanding facts, Texas has thousands of cows for sale, Arizona thousands more and Callfornia a few thousand also.

The feeder who held until May is badly hurt, especially the feeder who put expenslve meal and finishing feeds into 10-cent cattle and must let them go to market now or they will burn out. That feeder cannot get today 11 cents for meal-fed steers and must compete with the increasing grass-fat cows and steers at lower prices. The feeder who listened to the food demand and bought heavily of stockers and fed heavily and did not get in on a rush sale a month or two ago is contributing much cash for his patriotic and expensive impulse. Some are going to lose enough to just about break them, but most of them will merely cancel last year's profits as well as this year's and be lucky to quit even.

Who knows anything about the cow business? It would take some prophet to state what is to be the outcome, as the best men in the business are in a haze of uncertainty, and many are firmly of the opinion the market and conditions will he just what the large killers and food controllers wish to make them, no more, and no less. Eventually, "the piper must be paid" and we will face a tremendous penalty. Lack of cattle will mean lack of fertilization and affect a thousand industries which the average cltizen and politician thinks it has nothing to do with.

This killing of cows, this great drouth loss, this unprofitable return from breeding and producing stock and this very bad market will all, in a very few years indeed, bring a lesson and a result whlch would be a wise economic move to avert. Cattle production cannot be the sport of chance, of inadequate banking consideration and fight nature's hardships, drouth and severities of climate and disease. In other countries cattle production is fostered, encouraged and protected.

Many cowmen are fully convinced the time will not come when they have good natural conditions and good prices at the same time, as they have never come together during the last 40 years, except in a few

Are You Coming?

MARK THE DATE

Wednesday, July 16, 1919

California's Great Sale of

Duroc-Jersey Bred Sows and Gilts

Sixty Head of Choice Animals Bred to High Class Boars for Early Fall Litters. Don't Miss This Opportunity.

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Tulare, California

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We recently purchased a car of excellent Duroc-Jerseys selected from some of the East's leading herds.

Thirty-five yearling and aged sows for sale. Will breed them to any boar on the farm. Several young boars ready for service and fall shows.

Young pigs of both sexes.

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The Key Herd of Duroc-Jerseys

To You who Are Looking For GOOD **Duroc Jerseys**

We can now supply a few choice boar and sow pigs. They are by such boars as Cherry Chief 2nd and Calif. Great Wonder and from Golden Model sows.

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Gives Greatest Value For Least Money

It Makes Them Fat

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Raise Your Hogs and Cattle at a Profit

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Great Model

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The nutritious hearts of whole grains, ground and scientifically balanced with real dried buttermilk to make a wholesome feed on which chicks thrive. Makes chicks live and grow in robust health.

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A food designed to make chicks develop into egg producers in the shortest possible time. Contains real dried buttermilk. Should be fed until chicks reach age of 5 months, then get

Globe "A-1" Laying Mash

for quick results in the egg basket. Contains real dried buttermilk. The use of buttermilk in poultry feeding has the indorsement of U. S. Agricultural Dept. (See Bulletin 162, Berkeley, California)

Health-giving lactic-acid Bacteria of Buttermilk

Put prosperity into your poultry yard. Start on these three great feed today. See your dealer—he has all the Globe "A-1" Feeds.

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Globe "A-1" Swine Feeds
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Three kinds, one for baby pigs, one for growing pigs, one for fattening hogs. Scientifically compounded to suit age of animal. All kinds contain real health-giving dried buttermilk, in correct proportion to make animal grow, mature rapidly and take on a load of profit-making fat. Ask your dealer.

Globe "A-1" Stock Feed
—with molasses

A well-balanced ration containing the proper amount of such concentrate feeds as soya bean meal, milo maize and other grains in combination with chopped alfalfa and dessicated bean straw. The whole ration treated with heavy addition of Hawaiian *cane* molasses. Palatable, nutritious—a winner either as a dairy or a fattening feed.

Globe "A-1" Dairy Feed

A high-protein concentrate to balance roughage available on your ranch. All we ask you to do is to weigh up the milk before and after feeding this remarkable feed for a few weeks.

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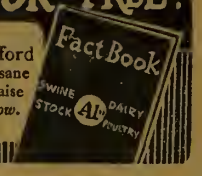

The Big Auction Sale

Butte City Ranch

Second Annual Sale

Butte City, California

Saturday, August 2, 1919

50 Registered Shorthorns Consisting of 38 females and 12 bulls, representing some of the most desirable families of the breed, practically all Scotch and Scotch topped cattle. Such good bulls as Victor Stamford, Vermillion, Crescent Dale, Gibson's Goods, Ringleader, Sir Type, Rex, Gloster Archer, Roan Chancellor, White Duke, and Perfection are represented in the sale by sons and daughters.

125 Registered Shropshires We believe that buyers in California have never before had an opportunity to secure such choice registered Shropshire sheep in a public sale in this state. Their breeding is of the best, representing drafts from some of the foremost flocks of America, and the offering is in splendid condition. There will be 35 mature ewes, 35 ewe lambs, 35 yearling rams, and 20 ram lambs in the sale.

50 Registered Berkshire Hogs The Berkshires on Butte City Ranch are almost too well known to need more than a simple announcement that some of them will be offered at public sale. The offering in this event will consist of choice gilts and a few good young boars, every one of which is by a son of the world famous imported boar Epochal, or by a grandson of the world's grand champion boar, Grand Leader 2nd.

10 Shetland Ponies The Shetland Ponies bred at Butte City Ranch have found wide favor, and are handled to make gentle pets and playfellows for the kiddies. Some of the good ones have been selected for this sale.

A CATALOG OF THE BIG SALE IS NOW BEING PREPARED AND A COPY WILL BE GLADLY MAILED ON REQUEST.

Management

California Breeders Sales and Pedigree Co.

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Sacramento, California

Auctioneers: Col. Ben. A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare

When writing advertisers, mention The Cultivator.

spotted districts. Some of the men who have been rather successful in the cattle business in the past look for the present drive against high beef prices—and this does not of itself affect prices to the consumer to any degree—to succeed. Men have told me they think we have seen the highest priced cattle and that as soon as a recovery is made under readjustment we must face the importation problem of South American and Australian meats at lower figures.

The packers should worry as they have large plants in foreign countries and will supply whatever meat we eat. Their profits are probably greater in South America than in this country and they have few if any restricting laws as to prices and income tax profits.

The above may be pessimistic, but no one seems to know anything—as shortage doesn't mean demand and two and two don't make four when there is some one to monkey with the adding machine.

The cowmen have their associations which are very loose, but could, with the elimination of packers, speculators and all not actually engaged in cattle production, be made rather efficient in fighting for better conditions and markets. The brotherly spirit of the prairie dog and the rattlesnake is beautiful to contemplate, but the prairie dog always loses, and quite a few cowmen are rather suspicious and pessimistic toward this highly advertised Chicago cooperative measure which is going to solve all the differences which exist between cattle producers and the mighty packers.

It would seem a safe bet that cows will be cows before long and that the range cow will be something sought for, but such isn't the case right now. The packers may be very innocent, and the money condition have nothing to do with present slack prices, and it may be true the country is all turning anti-meat, and that consumption of meat has slackened. If that is the case these cow associations better get busy.

Walnuts are advertised, so are raisins. Why not advertise meat. That would meet even the support of the great packers and retail butchers. We hear that the meat eaters in the army were the boys who did the work and stood the gaff. The civilized nations of the earth are the meat eating nations. Why don't our associations advertise meat and run the quacks and nature fakers out with sheer weight of ink and argument.

Of course, we ought to have fair markets and some believe stockyards will help, but a lot of cowmen don't know what they believe and have been rapped so many times by so many sources during the past year they are without faith in the wisdom and power of sources which should protect such producing industries, and they merely figure things will be exactly as two or three men in charge in Chicago decide they will be.

BETTER CARE OF SHEEP PAYS

Seven farm sheep demonstrations were held last year in Missouri—flock owners cooperating with sheep specialists of the United States department of agriculture and the state agricultural college — the results of which, among other things, showed that it pays well to give sheep proper care. In two of the demonstrations, where grade animals were kept, one flock produced 108 per cent of lambs, which means that some of the ewes had twin lambs, while the other flock produced only 59 per cent of lambs, which means that a large number of the ewes did not produce any or that the lambs were too weak at birth to be saved. The wool from the first flock was sold at 66 cents a pound, while the wool from the second flock brought 64 cents a pound. The cost of feed of the first flock amounted to $7.05 for each animal, while the sheep of the second flock were fed at a cost of $1.34 each. The total cost, in the first flock, amounted to $8.36 an animal, as compared to $2.57 for the second flock. But the net profit a head—the point which is most important to all sheep raisers — was $5.74 in the first flock as compared to $2.22 in the second flock, and the net return on the investment amounted to 21.77 per cent in the first flock as compared to 15.23 per cent in the second flock.

MINERAL LACK BRINGS BREAKDOWN IN SWINE

Breaking down of hogs through the fracture of the thigh bones may be caused by a deficiency in the mineral ration of swine. Breaking down often causes heavy losses to shippers of live stock. Farm brood sows frequently break down while suckling pigs.

Experiments show that a deficiency of bone foods in the ration of growing animals may reduce the breaking strength of the bone by one-half without restricting its growth to a noticeable extent.

Calcium and phosphorus, the most important minerals required by swine, may be supplied by feeding bone flour, wood ashes, corn cob charcoal, or lime. Raw rock phosphate is frequently used, also. The two elements are especially deficient in corn, seeds, cereals, and cereal products. Skimmilk and tankage occupy first place as sources of mineral nutriment for the corn-fed hog.—Ohio Monthly Bulletin.

LET HER SWITCH!

Fly time is here. She will be more comfortable and give more milk. But wear a milker's mask. Protect your eyes from dirt and injury.

ELLEBY'S MILKER'S MASK

Light, strong, cool, comfortable. Eliminate the most disagreeable part of the milker's job—being lashed in the face by the cow's tail.

Price $2.00

Mailed anywhere in U. S.—Agents Wanted

F. W. Elleby Modesto, Calif.

Rosedale Farms
Hampshire Sheep

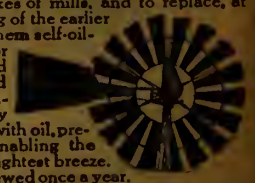
We offer for this season:
25 Head Ram Lambs.
50 Head Yearling Ewes.
100 Head of Ewe Lambs.
1 3-year-old Butterfield Ram.
10 Head purebred Rambouillet Rams.

Apply to or address:

D. E. Kelliher Eugene, Cal.

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.



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CALIFORNIA A. R. PRIZE WINNERS

Superintendent Gardner of the Holstein-Friesian Association has issued a list of the prize winners for Advanced Registry work during the year 1918-1919. The list discloses the fact that 23 California breeders won prizes, thus giving this state fifth place. The California breeders appearing in the list, together with the amount of money won, follows:

A. W. Morris & Sons Corp. Woodland	$324.00
Bridgford Company, Knightsen	275.50
Palo Alto Stock Farm, Palo Alto	168.50
McAlister & Son, Chino	126.50
W. J. Higdon, Tulare	125.75
M. H. Tichenor, Palo Alto	113.50
A. J. Stalder, Riverside	97.00
E. E. Freeman, Modesto	90.25
J. H. Harlan Company, Woodland	78.50
Gotshall & Magruder, Ripon	65.50
F. W. Kiesel, Sacramento	58.50
Anita M. Baldwin, Santa Anita	48.50
J. J. Jeffries, Burbank	36.00
State Hospital, Napa	33.50
A. M. Bibens, Modesto	22.50
J. W. Benoit, Modesto	19.50
E. J. Weldon, Modesto	19.00
G. A. Smith, Corcoran	18.25
K. W. Abbot, Ripon	18.25
Dean Beeman, Woodland	10.00
R. L. Holmes, Modesto	7.50
Los Angeles County Farm, Hondo	6.50
University of California, no money award.	

STATE UNIVERSITY AT LOS ANGELES

The State Normal School at Los Angeles has been chosen as the site for the Southern California branch of the state university. Dr. E. C. Moore, present head of the normal school, has been named director.

The San Luis Obispo Live Stock Show

The San Luis Obispo County Live Stock Association held its first annual in San Luis Obispo, June 27-28. The awards given below show full list of entries, and from the success of the exhibit we presume it is but the forerunner of many successful shows in San Luis Obispo, one of the best live stock counties in California.

Among the winners were:

Percherons: Colony Holding Corporation; Clydesdales, White Triangle Ranch.

Saddlers and other classes: Forest Wood, Bob Taylor, Virgil Taylor, Perozzi Brothers, H. M. Warden.

Jerseys: E. H. Meinecke, J. W. McClain, Mrs. M. A. Brooks, George H. Andrews, Sinsheimer Brothers, Mrs. J. C. Weid, Forest Wood.

Holsteins: Lewis Dairy Farm, O. W. Birra, D. Machada, Pecho Ranch and Stock Company., George G. Ross, H. M. Warden.

Shorthorns: S. J. Lowe, D. Machada.

Poland-Chinas: Sinsheimer Brothers, Ross McMillan, Pecho Ranch and Stock Company, V. A. Martin, Ernest Hodges, Union Commission Company.

Berkshires: F. L. Sandercock, A. Rayburn.

Duroc-Jerseys: A. R. Barbick, W. E. Brayton, White Triangle Ranch.

Rambouillet Sheep: Pecho Ranch and Stock Company.

Sheep: O. V. Barlow, O. N. Blinn, Cris. Jesperson.

Goats: Clyde Pool, Stanley Dawe.

At San Luis Obispo Show

Three Shorthorns shown at the recent San Luis Obispo County Live Stock Association Show held at Polytechnic school grounds, from the Jack Lowe Ranch.

THE EDUCATED MAN'S CHANCE

Statistics lately gathered show that among 150,000 uneducated children only one has a chance of becoming prominent. Given a high school education, he has 87 times this chance; elementary schooling falls between these two, while college training increases the opportunity 800 times.

Formerly farmers feared that educated children would feel they had outgrown farm conditions and would look toward the city, but in these days when automobiles, modern household appliances, and especially the use of farm power machinery are increasing in every rural district, the farmer may well change this fear for the one that his children, unless well educated, cannot hold a leading position in their own community.

WATER AND FEED

The question of water and feed is the farmer's greatest worry. Stock must have both. A hot day in summer without water, or a scarcity of feed for a few days in winter can easily wreck your dairy profits for the entire year.

Dairy cows will not give milk unless properly fed. The surest way to feed is from a silo. By putting your green crops into ensilage you have a feed that is more nourishing, goes farther, and is an insurance against shortage during the winter. It is the one logical way to feed a dairy and is the secret of dairy success.

The Pacific is built to meet every requirement, give maximum service and yet be sold at a reasonable price. It is strong, serviceable, convenient, and will last a lifetime.

Pacific Silos are built of well-seasoned 2-inch Redwood staves with strong, fir door frames. Heavy steel hoops with cold upset threads and malleable iron lugs. Other *Pacific* features are self-supporting cover; hinged ventilators; hingeless doors and iron-tongue splicing. Foundation plans are furnished with every silo.

Investigate the *Pacific*. It's a perpetual *money* maker and safe investment.

HOW ABOUT THAT WATER TANK?

Let the *Pacific Tank* take care of your needs. Put in a system and have water all the time and where you need it. Water for your stock, dairy, kitchen, bath and lawn. A life-saver in case of fire.

PACIFIC TANKS

are built of heavy Redwood and bound with large steel hoops. Strong and everlasting. Fitted with patent non-shrinking system. Cannot shrink, leak, or burst. Always tight.

Write us about our non-shrinking system. Find out why it is that a *Pacific* never leaks. Write today.

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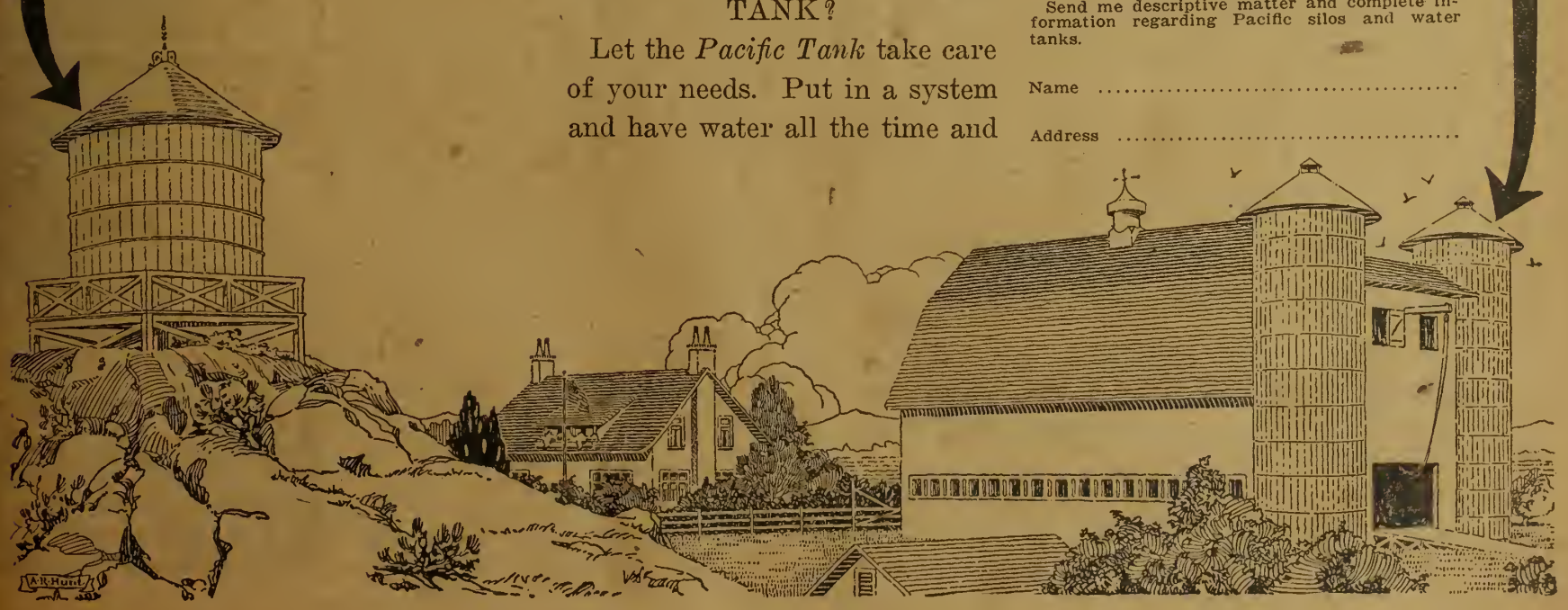
Address .....



This CONCRETE Manure Pit *will cost you nothing*

The horses and cows will pay for it.

Unless stable manure is kept so that the valuable liquid contents are saved, 50 per cent of the fertilizing value of the manure is lost. An average horse or cow produces annually manure worth $35. The liquid portion is worth nearly half of this. ***A concrete manure pit will save it all.*** So you see how the horses and cows can present you with a concrete manure pit free of charge.

Build one now and get the profits from this form of saving.

Ask for our free booklet telling how to build Concrete Manure Pits. Write our nearest district office.

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Atlanta, Chicago, Des Moines, Dallas, Denver, Detroit, Helena, Indianapolis, Kansas City, Los Angeles, Milwaukee, Minneapolis, New York, Parkersburg, Pittsburg, St. Louis, Salt Lake City, Seattle, Washington

Concrete for Permanence

What To Do When Cattle Bloat

The danger to the animal from acute bloating is not that the distended stomach may rupture, for such an accident is almost unknown. The pressure of the gas-distended stomach, however, exerts a dangerous pressure upon the heart and lungs, with the result that animals dying from acute bloating usually die of strangulation through inability to breathe with their compressed lung tissue.

The stock owner should guard against the bloating of his cattle by every precaution at his command. Clover, alfalfa, or other green vegetation, if eaten when wet by dew or rain, seem to be especially liable to ferment before leaving the first stomach of the animal that has fed upon them. Eating excessive amounts of middlings or corn meal will also cause bloating. It also occurs in cattle as a result of becoming choked. The principal cause, however, is overeating succulent green forage, such as clover, green corn, or cabbage.

Change Feed Gradually.

To prevent bloating the animals should be shifted by easy stages from dry or scanty feed to abundant and luxuriantly growing fodder. They may be allowed to feed from the good forage for only three-quarters of an hour on the first day they are given access to such grazing. A full hour may be allowed on the second day, and by continued slow steps and gradually lengthened stay in the tempting feed the danger of loss from bloating will be largely overcome.

But in case the first evidence of a too protracted stay in the heavy growth of forage should be that the owner notices one of his animals with sides distended and perhaps even lifted above the level of the backbone, he must act quickly. Removal of the gas from the paunch will quickly bring relief. If a veterinarian is within reach he should be summoned at once. If no surgeon is available, the owner should immediately attempt to bring relief to his animal.

Trocar and Method of Use.

Many cattle owners keep a trocar and canula constantly on hand and thoroughly understand its use. The trocar is a sharp pointed rod provided with a metallic sheath or canula which leaves the point of the trocar exposed. The spot to be selected for inserting the trocar is a point equally distant from the last rib, the hip bone, and the lateral bony projections from the spine in the region of the loins. Here a small cut about three-fourths of an inch long should be made through the skin with a small knife, and then the trocar with canula attached may be pushed through the cut into the paunch. The trocar is then removed, allowing the gas to escape through the canula. The canula should be retained in place so long as any gas escapes through it. Sometimes several hours are necessary, and the canula should be firmly tied in place. An attendant should remain near the animal, if possible so long as the canula is in the paunch.

Medicines That Relieve Bloating.

If the animal is not distressed by the bloating, and the swelling of the body is not great, or when the alarming conditions have been removed by the use of the trocar, it is best to resort to internal medicine to allay the formation of gas. Two ounces of aromatic spirits of ammonia in two quarts of cold water should be given every half hour, or half an ounce of chloride of lime dissolved in a pint of tepid water may be given every half hour until the pressure of the bloating has been removed. A dose of purgative medicine is usually beneficial after the bloating has disappeared. For this purpose one pound of Glauber's salts will usually prove effective.

Care should be used in the administration of fluid medicines. Take time. Do not hold the cow's head too high. Keeping the animal's head raised, so that her nose is slightly higher than the level of her face will allow her to swallow without interference.

Get Better Acquainted

The following from the National Stockman and Farmer is quoted as bearing a philosophy worthy of consideration by all who grow trees, shrubs or plants or who live upon the farm. The experience is that of S. J. Lowell, Master of the New York State Grange:

"I think the first thing that opened up the new vision of farm life to me was an eccentric old vine among the grapes. This fellow was one of the greatest fakers that ever lived. He fooled me for several years with his tricks and I couldn't help comparing him with a certain human being I had known. He would start out every spring with the other vines, strong and brave, making me all kinds of promises about the grapes he was going to bear. He would grow the most marvelous suit of leaves and get himself all dolled up, fit to kill, for all the world like a confidence man in real life; then, just as sure as harvesting time came, there he would be without a grape. Well, I finally cut off his head and grafted on another that was on the square and would grow real grapes without any bluff or bluster.

"With this as a beginning, my acquaintance with my farm family grew and prospered day by day, spreading to trees and flowers and animals, to garden truck and to everything else around the place. There grew up within me, along with this acquaintanceship, a sort of fatherly interest in all these struggling friends, and in the steady old wheel horses in all branches of the farm's life. I got to feeling that these plants and animals would show me very clearly, if I would just look, when they were happy and contented and properly taken care of, and when they were miserable and neglected. That is the feeling that makes a man a real farmer at heart. No man ever got it by hating his farm. Any man can get it by getting acquainted with his farm."

Farmer Putnam on Silos

A silo is a hole, entirely surrounded by a wall, fur storin' cow feed. Sometimes the hole is in the ground; sometimes it is up in the air. To build a silo, first select a nice spot fur the hole, then build a wall outside of the hole, if you want to build up, or inside of the hole if you want a pit silo. Either kind is good, but you got to go about it different. If you can't put up a silo, put one down, but don't put it off.

All kinds of material is good for silo buildin' exceptin' hot air. Good ones is made outen cement, concrete, cement staves, holler tile, brick, stone, wooden staves, steel or two-by-fours. We has 2000 silos in Colorado made of them above materials, and about 20,000 outen hot air. Most of the farmers has got the spot fur the hole picked out, but they hain't never begun to commence to build yet, fur some reasons or others. Some hain't got the money, some can't decide on the kind of silo, some sez it's too much work to haul the crop in and cut it up, some sez it makes the cows' teeth fall out, some sez it gives 'em holler horn and holler tail, some sez it makes the milk turn green, some sez the butter from the silage milk won't churn, some sez it makes steers scour, hawgs howl, and lambs limp. Anything to put off silo buildin'. I'm a tellin' you folks better get busy and look into this silo business; it'll mean money fur farmers that wants to make beef, mutton, or milk, and I know of some that feeds it to hawgs and lots of it is fed to hosses and mules. I wouldn't starve on it myself if I had to eat some good corn silage.—The Concrete Builder.

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Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffe and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of **Caustic Balsam** sold is warranted to give satisfaction. Price $1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

JERSEYS

Jersey Bull
For Sale
A fine straight one, bred right, priced right
S. F. Williams
Orland, Cal.
Member Orland Jersey Cattle Club

Venadera Herd
Registered Jerseys
Young bulls from proven dams in Register of Merit
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All My Records
Are made under ordinary dairy conditions
The Farmers Cow is
The Jersey
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Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
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Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynilyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

The Keep On Herd
Register of Merit Jerseys
Young Animals for Sale
Dr. H. W. Hand, Orland, Cal.

10 Jersey Bulls
We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.
Arden Dairy, Certified
El Monte, Cal.

A 270-acre vineyard east of Fresno recently sold for $200,000.

Live Stock Queries

Raising Dairy Calves for Veal

Seeing the query in the issue of June 21 and your reply I am writing you of my successful experience. I was milking a number of cows and among them was one old cow that was very hard to milk. She gave a good quantity of rich milk. I decided to let her raise the veal calves. She usually had two calves at a time. I would sometimes get calves of a dairyman at from $1 to $2 each and that old hard milker raised nine splendid calves that averaged $17 each. It all depends on the party doing the work of management.—S. A. M.

Breeding—Dairy Law

How soon after freshening would you advise breeding dairy cows for greatest yearly milk production? Where can I get a summary of latest dairy law that applies to the small rancher with but few cows?—Subscriber, Hemet.

It is quite generally conceded that persistent milk flow can be best developed during the first lactation period, and most dairymen feel that unless the milking habit is well developed at that time very little can be done later. The age at which a heifer should freshen will depend on the breed and general condition and development of the individual. There is no evidence that there is any apparent difference in production of cows freshening again six, 10 or 12 months after calving. For best results a cow should be dry from six weeks to two months between lactation periods.

The State Dairy Bureau, 268 Market Street, San Francisco, can give you the latest dairy regulations.

Protective Foods

From an address by E. B. Fitts before the Western Dairy Products Show, Boise, Idaho, we quote:

In the amount of new money produced the dairy industry stands near the top when compared with other agricultural activities, and as a source of an essential food product this industry stands at the top, at the very apex, in a class by itself. Careful and extensive experiments recently completed by Dr. E. V. McCollum of Johns Hopkins University, and other investigators have conclusively proven that milk contains a dietary essential without which children cannot grow nor mature life be long continued in a state of perfect health. This dietary essential is associated with the butter fat in the milk. It is also found associated with the fat in the yolk of eggs and in the leafy parts of plants. These three food materials are, therefore, classed by Dr. McCollum as "protective foods." Dairy products are by far the most important of the "protective foods" for they are much better adapted to dietary combinations for all ages and classes of people than are eggs or leafy parts of plants. Diseases peculiar to children such as rickets increase rapidly in communities where there is a curtailing of the normal milk supply. The spread of tuberculosis and other wasting diseases is more easily checked and their cure more rapidly accomplished where milk and milk products make up a considerable portion of the diet. Evidence is at hand to show that the physical, mental and moral development of peoples is largely dependent upon their diet. The races of Asia: Japanese, Chinese, Indian and Filipino are small in stature, short in span of life and high in infant mortality when compared with the races of Europe and America. A comparison of diet shows that the races of Asia live largely upon cereals, fruits, vegetables, leafy parts of plants, some eggs and very little milk. The races of Europe and North America use in their diet nearly all the foods that are eaten by the Asian with the addition of large amounts of milk. The nations that are leaders in literature, art science, music, invention and general accomplishments are those where the diet of its peoples contains milk and milk products to the extent of 15 per cent or more of the diet. We must revise our ideas as to the comparative importance of different foods in our diet. The Englishman has always attributed his boasted development of brains and brawn to the large amounts of rich, red, juicy roast beef he consumed. We know now that such physical and mental development as he has attained is not due to the rich, red, juicy roast beef he consumes, but to the milk and dairy products he uses in connection with his meat diet. Wide publicity needs to be given in our country to the importance of dairy products in the diet.

The rate of increase of our people is greater than that of our dairy cows. Our people have made it possible, through sacrifices, to ship enormous quantities of dairy products to suffering humanity across the sea. Substitutes are being consumed here in large amounts. There is danger that the amount of dairy products used by our people will be decreased to a point below that of safety. We feel that all who have the best welfare of our nation at heart should unite to propote the development of the dairy industry and the greater use of dairy products. We feel this to be of utmost importance and it will receive consideration at this convention. Among other matters that are to be taken up are the cost of milk production, manufacturing problems, the marketing and distribution of milk and dairy products, the improvement of the quality of dairy products, and the greater utilization of dairy by-products.

MAKING STRENGTH FROM MILK

Plenty of milk is one of the simplest ways of improving the general health of children, authorities believe, and home demonstration agents of the United States department of agriculture and the state colleges are making special efforts to create public interest so that every child will get his share. In some cities, where many children have been found undernourished and undersized, milk is served in the schools. In 19 Indianapolis schools 2,000 chilren have been served a half pint of milk each school day during the past year. The milk is delivered at the schools in individual half pint bottles. A hole is punched in the cap of the bottle and a straw is inserted. The children help themselves as they march past, and afterwards they return the empty botles to the rack. This work in Indianapolis is maintained by the parent-teacher clubs, but it is largely self-supporting. The majority of the children pay 3 cents a day, or 3½ cents for milk and crackers. Those who can not pay get the milk free. The children are measured and weighed, and the chart of each child is kept in his schoolroom, so he may see whether he is up to normal or below. All the children are much interested in weighing what they should. The teachers report a marked improvement in the schoolwork and want the work continued. The Indiana home demonstration agents cooperate with the county welfare committees in weighing and measuring the children.

The Department of Agriculture is issuing warning against confusing the rosy saltbush with Australian saltbush. The Australian has become established in this state as a valuable forage plant, but the rosy saltbush, although advertised as of value, the department considers on the same footing as the tumble weed and Russian thistle.

As the type of animal necessary for the production of large yields of milk is entirely different from that of the beef animals, it has been impossible to produce a breed which would combine these functions and be of superior merit for both purposes.

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam: ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:
At seven years—
Milk 338 days.....18,849.40
Butter 866.28
At six years—
Butter seven days 34.13
Milk 532.40
At five years—
Butter seven days 28.85
She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.

Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho
Anoakia Breeding Farm
Santa Anita, California
Anita M. Baldwin, Owner W. H. Taylor, Supt.

His Calves Are Beauties

Every one who is fortunate enough to own a son or daughter of KING KORNDYKE PONTIAC 20TH our $6500 herd sire, is enthusiastic about the splendid type and beautiful marking of his calves. While they are only babies his daughters show great promise of developing into exceptional dairy cows.

King Korndyke Pontiac 20th

His young sons are moving fast, and it will pay you well to see us now about one for your herd, for we are not going to be able to fully supply the demand for some time to come.

Our Entire Herd is Tuberculin Tested
Tulare Holstein Farm
W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds
This butter average is equalled by only one other bull of service age in the world. Buy your next bull from
Eldorado Herd
Alex. Whaley, Owner Tulare, Cal.

Are You Satisfied

with the returns from your present herd? Our milking herd of 300 cows averages one pound of fat per day. What is your average? Ours is due to good cows by high class sires. We have 5 bulls all bred for increased production. Senior Sire, Sir Veeman Korndyke Pontiac, a son of Sir Veeman Hengerveld, the sire of more 30-lb. cows than any living sire. We can sell you a young bull at a very reasonable price.

BURR FARM Los Angeles, Calif.

GOING FAST, SO ACT QUICKLY

Five young Holstein bulls have left Sunnyside Farm past month to head other herds. We have for sale a few select sons of Sir Veeman Korndyke Pontiac by Sir Veeman Hengerveld, the sire of more 30 pound cows than any other living sire. Full description and price on request.

R. F. Guerin Breeder of Holsteins Visalia, Calif.

Brighton Farm Herds
Registered Shorthorns
and
Berkshires---Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

Breeding Date Book---FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

CALIFORNIA BREEDERS SALES & PEDIGREE CO.
C. L. Hughes, Sales Manager
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CALVES

The ONLY Calf Meal using pure dry milk solids as a base; feed
Red Horn Calf Meal
Wean calves from milk in four weeks. Send for free literature.
GLOBE MILLS, LOS ANGELES

PIPE

100,000 FEET OF NEW AND SECOND-HAND PIPE AND CASING
PIPE—Practically all sizes from ⅛ to 15 inches.
CASING—Practically all sizes from 8 to 14 inches.
All pipe and casings have good threads and couplings on each joint.
RIVETED PIPE—4 to 12 inches, as good as new.
We also carry valves and fittings.
MAIL ORDERS GIVEN PROMPT ATTENTION
Write, phone or wire for quotations.
Adams Pipe Works
Bay and Mateo Sts. Los Angeles, Cal.

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

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TREES

For Sale — Budding Cloth 50c yard; also leading varieties citrus nursery stock. Selected and pedigreed buds. Order quick for early delivery. Cyrus W. Wilhite, Citrus Nurseries, Glendora, California, Box 154.

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

400 Late Valencia, ½ inch to ⅝ inch, one year old buds. Edw. H. Rust, 1625 Bank St., So. Pasadena, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

MISCELLANEOUS

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

For Sale or Will Exchange for hens or other poultry, small spray pump, capacity 10 gallons. Mrs. Clara McLellan, Alta Loma, California.

War Pictures, best ever brought over. Postpaid each 25c, set of 10 for $2.00. Cash Nurseries, Sebastopol, California.

WANTED

A London Firm with Branch Office Paris, having large connection in condensed milk seeks sole agency for England and France of first class condensed milk factory, both sweetened and unsweetened. First class references given and required. Apply with full particulars to Box 799, Care Hooper & Batty, Ltd., 15 Walbrook, London, E. C. 4, England.

Wanted — Poultryman, very successful, wishes to meet ranch owner desirous establishing modern, up-to-date poultry and hog ranch, particularly turkeys. Will build, equip, stock, run same. Furnish one-half capital. Can make this best investment on ranch. Highest testimonials and evidence furnished. C. T. Johnston, 331 S. Flower Street, Los Angeles.

Want to Buy 10 to 40 Acres Near the mountains; running water and cheap commercial electricity. Price of land must be reasonable. DR. McHUGH, 311½ S. Main street, Aberdeen, S. D.

Wanted a Car of Weaned Pigs and shoats, state age, weights and prices. J. Schneider, Route 2 Box 333, Pasadena.

Feeder Hogs Wanted. R. B. & N. Ranch, Waukena, Tulare Co., California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also handpicked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Box 501, Fowler, California. Write for circular, prices on seed and plants, Sudan, Dwarf Milo Maize, Honey Sorghum, Amber Cane.

For Sale—One car of Melilotus Indica seed, 3 cents per pound, f. o. b. Imperial Valley. Samples on application. J. Schneider, Route 2, Box 333, Pasadena.

Seed Potatoes for August planting: True White Rose, British Queen and Earliest of All. Stock limited, order early. H. A. Hyde, Watsonville, California.

RABBITS

N. Z. Reds — Registered Pedigreed from prize winning stock. Registered buck 9 months old $10.00, wt. 9½ lbs. Registered bucks 5 months, wt. 7½ lbs., $6.00. A few fine utility does bred $3.00. Write your wants. E. Peppin, 86 Cambridge Ave., San Leandro, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

Raise Rabbits for us. We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock, Paul Kruger, Watsonville, California.

FERTILIZER

EARL A. HOLCOMB
SOIL LIFE
Fertilizer and materials mixed to balance every soil. Bureau of testing and advice free on all horticultural and agricultural subjects. 1022 Washington Bldg., Los Angeles. Phone 62907; res. 16116.

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101. Watsonville.

JACKS AND JENNETS

For Sale or will exchange for land fine bunch black registered Jacks and Jennets. No better bunch to be found in California. A. L. Allen, Perris, California.

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SPECIAL BARGAINS
GALV. SURFACE IRRIGATING PIPE
4-in., $16.50; 6-in., $24.50; 7-in., $31.90; 9-in., $38; 10-in., $43. 6 hp. Lambert gas engine, $115; fine 8-in. double acting cylinder new, $150; 4-in. hor. cent. pump, $69; 5-in., $88; 6-in., $125; No. 3 Ames double acting plunger pump, $275; pipe and rods extra.
WINDMILLS-TANKS-STEEL TOWERS
8-ft. mills $29 up; 10-ft., $39 up; 12-ft., $65 up; 16-ft., $135.
New, Used Redwood Tanks Guaranteed.
1000 gal., $19.50; 2000, $28.50; 3000, $35; 5000, $48; 25,000, $125; 15,000, $95.
NEW, USED GALVANIZED TANKS.
Used 1000 gal., $28; 3000, $55; new 1000 galv., $42.50; 2000, $56.
SHALLOW SQUARE & OBLONG TANKS
RANCH MACHINERY.
10-ft. grain drill, $95; 4 row beet drills, $35 to $45; 3 and 4 gang disc plows, $95 to $125; bean, beet cultivators, $35; potato planters, $75; cider mill, $17.50; cable. Nearly new Bean spray outfit cost $75 for $35. Many other bargains. Trade tools you don't need for material you do or pay with Liberty Bonds. Also want to buy. Material guaranteed as represented or money refunded. DEMMITT CO., 120 No. Main, upstairs, Los Angeles.

Corn Harvester — One man, one horse one-row, self-gathering. Equal to a corn binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kansas.

CATTLE

110 HEAD OF DAIRY
COWS AND HEIFERS
Fordson Tractor, Implements, Horses
On the J. J. Brinkman Ranch, in the WEED PATCH, 14 miles south of

BAKERSFIELD

FRIDAY, JULY 18TH AT 10:00 A. M.

We are instructed by the owner to dispose of this choice herd of selected dairy cows on above date to the highest bidders, POSITIVELY WITHOUT LIMIT OR RESERVE.

The owner has carefully built up this herd, and has culled out every unprofitable cow, until today it is a herd of merit. There are 60 fine cows, all young and in the best of condition. Holsteins and Durhams, many now fresh and giving large quantities of milk; also a number of fine springers. 50 high-class Holstein heifers, yearlings to 2-year-olds.

If you are in the market for first-class dairy cattle don't overlook this fine herd.

Implements, Fordson tractor, plows, cultivators, mowers, rakes, wagons, harrows, cream separator, all dairy equipment, etc. Also all household goods.

TERMS—CASH

Owing to the fact that this is a very large sale it will be started promptly at 10 a. m.

BIG FREE BARBECUE AT NOON
Don't miss this GENUINE CLOSING OUT SALE.

C. FAGUNDES, Owner
Col. Ben A. Rhoades and Harold B. Rhoades, auctioneers, Los Angeles, California. Office, 1501-3-5 South Main St.,

BUTTE CITY RANCH
SHORTHORN CATTLE, SHROPSHIRE SHEEP, BERKSHIRE HOGS, SHETLAND PONIES. Stock for sale at all times. Second Farm Sale—all breeds—August 2, 1919. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

For Sale: Beautiful Registered Guernsey Heifer fourteen months old. Not bred. Sired by Chanticleer of the Rancho and from high record stock. Price $225 at ranch. Geo. A. Stingle, Garvey Ave., 2 miles southwest of El Monte.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show Herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Elkhorn Farm Ayrshires — Choice registered young bulls at reasonable prices. J. H. Meyer, 440 Montgomery Street, San Francisco, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale at a Bargain—One 4 year old registered Guernsey bull from W. H. Dupee's noted herd. Apply to W. E. Borden, Oceanside, California.

For Sale Registered Holstein Cows, see ad on page 35 this issue. W. A. Walker, ½ mile north of Ripon.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Ayshires—Registered Yearling Rob Roy bull. Farmer's price. Redwoods Ayrshire Farm, La Honda.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

HOGS

CASTLEVIEW

Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rockwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, Calif.

POLAND-CHINA BARGAINS

BRED SOWS GILTS BOARS
In order to reduce our herd and to make room for young stuff we find it necessary to offer for immediate sale a choice lot of Poland-China sows, gilts, and boars. The offering represents as good blood lines as we could buy and has been nicely grown out. All are cholera immune. Prospective buyers should not overlook this opportunity. You will be surprised at the ertremely reasonable prices we are quoting. Scrub hogs are not profitable. Our registered hogs are money makers. Write now for prices. Act quick. These hogs must be sold. AMERICAN HOG CO., 920-922 CROCKER BLDG., SAN FRANCISCO.

BERKSHIRES BERKSHIRES

ANCHORAGE QUALITY

We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

TWO SOWS AND A BOAR
$100 the trio.
Two sow pigs from ten raised, sired by Baron Duke 201st, 780-pound $1100 Grand National Champion, from Rival B. Princess, a prize winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion Boar from Symboleer Belle, and of Superbus blood lines; a boar from a litter of ten raised, big, long typy, stretchy pigs. Sandercock Land Co., in charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, California.

Billiken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Milis, California.

Grape Wild Farm Berkshires—Guernseys —spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

For Sale—Registered Duroc-Jersey pigs, McKee Bros., Pilot Defender blood, owned by C. T. Thompson, Bishop, farrowed April 3rd, 1919. Very fine. For particulars and breeding, write: W. E. Detrick, Bishop, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gato and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

For Sale—Berkshire Sow Pigs and boar pigs from the best and most popular strain. Also a few choice open gilts. Lark Meadow Ranch, Geo. A. Stingle, El Monte, California.

Pathfinder and King's Col. Stock, immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Have Sold All the Pigs advertised recently. Will have fine pigs from spring litters for sale in June. Fine Shropshire ram lambs, pure bred, for sale. J. J. Prendergast, Redlands, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Duroc-Jersey Swine For Sale, best blood lines. Bred sows and gilts, service boars. Jersey Queen Farm, San Jose, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLETS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

HOGS

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724, Sacramento, California.

POULTRY

Baby Chicks For Sale—250,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock. 25, $3.50; 50, $7.00; 100, $12.50. Special prices, 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition. No money in advance; pay on delivery. Shipped safely anywhere West of Rockies. Finest hatchery in the world. Established 1898. Must Hatch Incubator Company, 438 Seventh Street, Petaluma, California.

White Leghorns are the most profitable breed of poultry. If you are in the business for profit you will eventually have them. Early broilers; early payers; early PROFITS. We sell only WHITE LEGHORN BABY CHIX from heavy laying HOGAINZED hens. Safe delivery of full count live chix guaranteed. Prices per 100; February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

It's like groping in the dark to attempt raising poultry successfully without some knowledge of the business. Poultry for Profit tells you how to house, feed and raise chickens, ducks and turkeys successfully in California. It contains 225 pages with 18 pages of illustrations and bound in cloth $1.00 postpaid. Cultivator Publishing Co., 115 N. Broadway, Los Angeles, California.

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
It's our business to improve egg production for you. We have the stock planned for your success. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trapnested S. C. White Leghorns every day in the year since 1912. Box B 337, Inglewood, California.

Thoroughbred Barred P. Rocks, egg record 1917, 190 eggs per hen; 1918, 210 eggs per hen. Hatching eggs, $2.50 per 15 eggs. Chicks 30c each; 7 pullets May hatch, laid 12 dozen December, 10 dozen January. Call mornings or phone 5599. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Baby Chicks From My Thoroughbred, heavy-laying strain of S. C. White Leghorns. Am booking orders now for July delivery at $12.00 per 100, $110.00 per 1000. Prices for August and September delivery on application. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Baby Chicks—Our large, bred to lay S .C. White Leghorn hens will produce the pullets that will bring in the dollars this winter. Tupman Poultry Farm, Ceres, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

Exchange 1 60-egg incubator new, for 2 young laying hens. No. 27 Shawmut, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

ENGINES

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

Gas Engine 60 H. P. Commercial, also 8 inch horizontal pump used one day. Sell at bargain. Prentice Ranch, Escondido, California.

For Sale—20 Horse Gasoline Engine (Olds), perfect condition, with belt and pump; cheap for cash. H. M. Kling, Anaheim.

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 South Los Angeles Street, Los Angeles.

FARM LANDS FOR SALE

$10 to $25 An Acre, Good Land, 160 acres and up, some improved, oak timber, watered by streams and springs, fine climate. W. W. Baldy, Raymond, California, Madera County.

For Sale — Imperial Valley's finest fruit and alfalfa farm for sale at a bargain. 160 acres. Earliest grapes and apricots in the United States. C. A. Myers, 1119 Haas Building, Los Angeles.

880 Acres mountain stock ranch, well watered and partially fenced—government land adjoining which can be homesteaded. C. P. Gould, Southerland Apts., 334 East Ocean Avenue, Long Beach, California.

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"TESTED" and "GUARANTEED"
Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
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Established 1906.
Main and Howard Sts., San Francisco

DUCKS

Mammoth Pekin Ducks extra heavy breeders, 3 months old, $3.50 each. August Surtman, Merced.

FARM LANDS FOR SALE

400 Acres, run down ranch but a good one if developed. Price will astonish you. All fenced, 125 acres farming land, balance pasture, and timber land, old house, old barn, good water, well at house, and good spring at upper end of ranch, running sufficient water for all stock purposes. Quantities of wood. This a pick up in the way of ranches. S. P. R. R. Co. drilling oil well within 10 miles of this property. C. P. Gould, Southerland Apts., 334 East Ocean Ave., Long Beach, California.

CITRUS LAND FOR SALE

You can buy citrus orchards at Escondido as well located, as productive, for one-half to two-thirds you must pay elsewhere. Why pay more? Walnut land at $200 per acre. All kinds of properties for sale. Bargains in three citrus fruit orchards. You must see to appreciate. Also a 26 acre tract I have for sale. MOTTO: ALWAYS FOR LESS. Escondido Valley is the famous Sun Kist Vale. Theron J. Smith, Real Estate, Escondido, California.

For sale Stock Ranch—4000 acres near San Bernardino, California. Land is level and excellent for alfalfa and stock. Several artesian wells. Price $300,000 including fine improvements and some stock now on ranch. Owner will consider some city property as part payment. Easy terms on balance. F. P. Turner, 119 East Colorado Street, Pasadena, California.

Mountain Ranch—334 Acres. 90 acres under cultivation, 30 acres Bearing Orchard, balance in Timber, Oak and Pine. Free Water, deep, rich soil, eight-room house, 100 tons hay, barn and out buildings. Will subdivide. Price $7500. Terms. Address, Paradise Ranchita, P. O. Box 123, Paradise, Butte County, California.

To Be Sold at Once—This 14-acre grove of full bearing Valencias, located right at Anaheim city limits, with 6-room bungalow; private pumping plant, piping, gas, etc., $2300.00 per acre, easy terms. Is certainly a bargain, having every advantage, and underpriced. Apply to H. M. King, Anaheim.

GOVERNMENT LAND

300 Million Acres of "Free" Land in U. S. "The New Homeseeker" a 104 page book, WITH MAPS and ILLUSTRATIONS, showing millions of acres of vacant public homesteads, timber, mines or grazing lands. Founded on historical facts. DOES NOT MISLEAD. Read earnings "official," eliminates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico, Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico. Describes water, soil and climatic conditions, all the principal U. S. land laws. A marvelous publication, just off the press. Call or mail us $2. Address "THE HOMESEEKER," 3rd floor Grant Bldg., Los Angeles, California.

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PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

Send For Free Booklet—"All About Patents and Their Cost." Shepherd & Campbell, Patent Attorneys, 734 L 8th St., Washington, D. C.

SHEEP

Sheep For Sale—500 ewes with lambs by side. Have rented my ranch and want to sell. A good buy for a small place. John M. Cox, R. F. D. No. 1, Box 160, Brawley, California.

DOGS

Collie Dogs For Herding, cattle, sheep and turkeys. John G. Mee, breeder of Bronze turkeys and Embden geese. St. Helena, California.

BEES

135 Colonies of Bees, Inspected, free of disease. Cheap. Al. Katzer, Placentia, California.

GOATS

61 Head of Angora Goats for sale. K. J. Easby, Jr., Merced, California.

MULES

For Sale — Twenty-five young mules, one and two years old. Chas. Hubbard, Riverdale, California.

CONSISTENT

"You describe yourself as a conscientious objector?"

"I do."

"But you put on the uniform."

"I had a right to. I conscientiously objected to leting other people do my fighting for me."

Figures That Tell the Truth

By Jean A. Koethen

(Continued from last week.)

Cost of a Hen

The cost of a dozen eggs is not merely the cost of the feed the hen consumes. It is the cost of feed plus what is called overhead; that is, interest on investment, labor and other expenses. On this chart there are seven items of overhead:

Interest (seven per cent on investment of $3 per hen, including value of hen as $1), $0.21.

Taxes and insurance, $0.03.

Death loss, five per cent, $0.05.

Replacement cost (cost of producing a pullet in excess of meat value of hen), $0.25.

Repairs (depreciation, etc.), $0.20.

Labor (in excess of proprietor's fair time), $0.35.

Incidentals (express, stationery, etc.), $0.11.

Total per year per hen, $1.20; per month, $0.10.

The feed cost of a hen in 1918 averaged 21.74 cents per month. Adding the ten cents overhead, we have 31.74 cents as the cost of keeping a hen a month, regardless of how many eggs she lays. The cost of a hen for a whole year is therefore around $3.84. How many eggs must she lay to be worth her keep?

In these calculations it is assumed that a hen will lay 120 eggs per year. Ten dozen eggs at last year's average of 51.6 cents are worth $5.16, a profit of $1.56 per hen. At the average of 35 cents, which was received in 1917, when the feed cost was only 72 hundredths of a cent less than last year, the income per hen would amount to $3.50, and the net profit be turned to a net loss. It appears, therefore, that until feed prices drop considerably the price of eggs should be maintained at the present level.

When a Hen Lays

If a hen lays 120 eggs in a year how are they distributed through the various months? This, too, is a question of averages. Knowing that the average hen does her best laying in March and April and her poorest in October and November, it is not difficult with the figures for monthly production of a large number of hens over several years to calculate the average lay for each month. The lay assumed on this chart is: January, 8.25; February, 12; March, 15.75; April, 16.75; May, 15.75; June, 12; July, 11.25; August, 9; September, 6.25; October, 4; November, 3.25; December, 5.35. These figures are important only in case a producer wishes to figure his profits month by month, but they are interesting as showing just what is to be expected from month to month. An average lay of 16 or 17 eggs in April is not large. Most commercial poultrymen expect a bred-to-lay hen to do better than this. Certainly if she did less, without some outstanding reason, her owner might well mark her as a slacker.

Drives of all kinds have been much in fashion for two years past. Is it not time for one of a litle different kind? Not a drive for funds, but an educational drive for the dissemination of these fundamental facts regarding the poultry industry? The fact that eggs are at present bringing a fair profit is no guarantee of justice in the future. The country is full of men and women who are ready to declaim at the slightest provocation against the prices of eggs. Housekeeping columns are full of egg substitutes and eggless recipes. Why not let the public know what it costs to produce a dozen eggs and how much the producer actually has for his own use when he sells them at 50 or 60 cents? Why not advertise the purity and efficiency of this best of all foods as widely as certain much less wholesome foods are advertised? Why not write on every hillside and flash out in the darkness of every city some legend to remind the public that in an egg is contained more real nourishment than one can buy for five cents in any other form? The poultry industry needs advertising more than any other business. It has the goods, and it sells them cheap, all things considered. Let the consumer know it.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, June 27, 1919.—Report for the thirty-fourth week ending June 26. In the thirty-fourth week of the laying contest at Storrs the total production for all pens amounted to 3837 eggs, or a yield of 54.8 per cent. This is a slight drop of about three per cent over last week's production. First place for the week was won by a pen of White Leghorns owned by J. Frank Dubois, East Lynn, Massachusetts, with a total of 60 eggs.

With the coming of the hot season the poultryman's greatest problem is not so much how to get more eggs this week than the week before, but rather how to prevent egg production from dropping too rapidly. Just a suggestion along this line may be helpful. Since the proportion of water in a bird's body is about 55 per cent, and that of the egg 65 per cent, it can be seen that water is a very important factor. Not only this, but allowing the hens to get out early in the morning and stay out late in the evening in order that they may have an opportunity to search for earth worms and bugs during the cool parts of the day is beneficial to egg production.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francais, 1346; Laurel Poultry Farm, 1277; Ingleside Farm, 1150.

White Wyandottes

Curtis L. Allen, 1244; W. Bradley, 1184; Patrick F. Sullivan, 1062.

Rhode Island Reds

Laurel Hill Farm, 1303; Deer Brook Poultry Farm, 1184; Chas. H. Lane, 1137.

White Leghorns

A. P. Robison, 1228; Hilltop Poultry Yards, 1211; D. Tancred, 1152.

Miscellaneous

Pequot Poultry Farm (R. I. Whites), 1128; Chickatawbut Farms (Wh. Rocks), 1120; Holliston Hill Poultry Farm, 949.

A PIPE LINE TROUBLE

Pipe lines sometimes have a trick of letting the water swing back and forth in them like a pendulum and occasionally flooding over the tops of the standpipes. The irrigator will have various remedies suggested to him but finds that the same remedy does not always work alike on different lines. The writer has had a bad case of this kind and has found that most people do not know what is the cause or how to correct it. One man is said to have paid $100 to learn to control this aggravating condition. A successful way for any line is to cause just enough friction in the line to bring the swinging to a standstill. This can be done by partly closing the line at several points, leaving just opening enough to let the water through and no more. The cause and cure can be put in five words:

Pipe too big; choke it.—T. M. N.

Keep a smile on your face and a laugh in your heart;
Let your lips bubble over with song,
'Twill lighten your load as you travel life's road,
And help other people along.

WELL, EVEN THAT WILL HELP

"They say food is going to be cheap pretty soon," remarked the hopeful chap.

"No," said the man who loves to look on the dark side; "it isn't going to be cheap — it will merely seem cheap by comparison."

I'LL SAY SO

Betsy, an old colored cook, was moaning around the kitchen one day, when her mistress asked if she were ill.

"No, ma'am, not zactly," said Betsy. "But the fac' is, I don't feel ambition 'nough to git outen my own way."

PHILIPPINES GROWING

Some of the advancement which has been made in the Philippine Islands is to be noted in the annual of the Manila Daily Bulletin, its regular anniversary number for 1919. There are scores of well-executed half-tones giving industrial and agricultural scenes, together with many photographs of some of the doers of things on the islands. The advantages of American occupation are indicated, for certainly this number is representative of American style.

Book Review

PRODUCTIVE SHEEP HUSBANDRY

"Productive Sheep Husbandry" by Walter C. Coffey, professor of sheep husbandry in the University of Illinois, published by J. B. Lippincott, Philadelphia; $2.50 net.

California is manifesting greater interest in sheep production now than at any time since the old "grain, wool, hide and tallow days". This book will be invaluable for the wool grower whether it be on the ranch, or, as more common in later days, for the small "flock master" on the diversified farm.

Professor Coffey has gathered together invaluable data on the most successful methods and practices of the sheep industry and put this knowledge in clear and systematic form, easy to refer to and to understand. He has illustrated his book with a remarkable series of illustrations, as helpful as the text.

Part I. History of Sheep Raising and of Sheep Breeding. Covering the development of sheep raising and the present type of sheep in the great sheep countries of the world, problems and methods of improving sheep; II, Structure and Judging. A richly illustrated study of the structure of the sheep, its nature, types and how to judge; III, Breeds. A very fully illustrated section dealing with all of the important breeds, mutton breeds, Southdown, Shropshire, Suffolk, the American Tunis, Merino, etc.; IV, The Management of the Flock. Giving the best methods for establishing the commercial farm flock, mating, care of ewes, lambs, summer management, the wool crop, etc.; V, Sheep Feeding. History of sheep feeding in the United States, market classes of sheep, autumn and winter feeding, shelter, factors affecting profit, and feeding sheep and lambs in the field; VI, Sheep Management on the Ranges in the Western States. Nature of the range, and suitable types of sheep, their management, and important changes in range conditions in the last 25 years; VII, Miscellaneous. Covering building and equipment for farm flocks, preparing mutton on the farm, and a complete index.

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Baby Chick
Milk Mash

The Best Feed
for first six weeks

Write for particulars
Coulson Co.
Petaluma, Calif.

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I MAKE ANTS DISAPPEAR

25¢ AT ALL DRUGGISTS

Macabee Gopher Trap

Small, simple, sure. At all dealers. If your dealer does not handle it, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid. Write for prices in larger quantities delivered free by parcel post.
Mfg. by Z. A. MACABEE, Los Gatos, Cal.

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Placed anywhere, DAISY FLY KILLER attracts and kills all flies. Neat, clean, ornamental, convenient and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed.

DAISY FLY KILLER at your dealer or 5 by EXPRESS, prepaid, $1.25.
HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

There should be real joy in work. Overwork will kill it.

Household Department

THE RIGHT OF WAY

I've ceased to ride with Ezra Green,
Who drives a fine, high-powered machine;
I'd rather walk for miles in dust,
Than let him hold my life in trust.
On hot and sticky days, by far
I'd rather take a trolley car
Than risk the dangers of the street
On Ezra's richly cushioned seat,
For Ezra is the sort of jay
That boasts about his right of way.

Bound north or south, he gives her gas,
And will not let a stranger pass;
At crossings never once he slows
But madly on the road he goes,
And when I mention caution, he
Then scornfully looks back at me
And this is all I hear him say:
"Don't fret. I've got the right of way;
The other chap must careful be,
It's up to him to stop for me."

It's hard to sit in comfort cool
Beside a driver who's a fool;
Although I have a worthless neck,
I would not risk it in a wreck,
Nor would my precious blood I draw
By folly countenanced by law.
It would not help when I am dead
And my poor soul above has fled,
To have the judge and jury say:
"Deceased possessed the right of way."

So now when reckless Ezra Green
Invites me into his machine,
Politely some excuse I give
And spurn his ride, that I may live.
I fear too much, when I am out,
The right of way he boasts about;
This thought is always at the top:
Some day the other chap won't stop.
And graveyards choke with men today
Who trusted to their right of way.
—Edgar A. Guest in "Milestones."

A SUCCESSFUL FAILURE

"YOU couldn't marry a farmer, Laura?"

The girl's lips set themselves in a hard line.

"Yes," she said doggedly, "I could."

"But—" he hesitated, "you couldn't—and be happy?"

"No."

"I'm sorry you've decided this way."

"I've always wanted to go to work in the city, Tom. Father promised I could go when I had graduated from the grades. Then that year mother was ill and I had to stay here. I'm going now."

Her face softened into tenderness as she spoke of her dead mother. "It's lonesome here now," she went on. "I can't stand it here any longer."

A week later, standing in the long line-up of girls, outside the office of the general superintendent at Benemaker's department store, she remembered her reply.

Her feet ached with an hour of standing. A seat near the blanket counter beckoned invitingly to her but the seat was not in the waiting line and if she stepped out of the line she would lose her place and have to work up again. The line-up ahead was long; back of her it was longer still.

A girl emerged from the superintendent's office with an application blank and retreated to a chair where she wrote painstakingly. The four girls next ushered into the superintendent's office consumed not more than four minutes of his time and came out empty handed. Then came a woman of perhaps forty. She too, carried a blank sheet in her hand as she left the office. Her suit, Laura observed, was old and worn.

Busily watching those ahead of her, Laura presently found herself face to face with the superintendent. The one year she had clerked in the little store at home gave her some prestige and though she too emerged with the blank to be filled, the superintendent had not given her definite encouragement.

There were other places. In her handbag she carried a clipping which stated that the manager of a certain office would interview applicants at eleven o'clock. Thither she hastened, walking to save her nickel. She arrived at 20 minutes of eleven. Five other girls were ahead of her.

The glances of the five were condensed into a formidable look that was hurled straight at Laura who, thus rendered selfconscious, sat down upon the end of the waiting bench.

"I suppose," she said with an attempt to speak friendly, "that we're all here on the same mission so we might as well get acquainted to shorten time. I've been on my feet all morning and I'm glad to sit down."

The girl next her relaxed and smiled. She had been working for four dollars a week she said but she lived at home and did not have to pay for room or board. Four dollars a week bought most of her clothes, at least.

"But you can't live on four dollars a week, you know," she informed Laura.

The girls kept on coming. Laura counted the twelfth and then watched the unlucky thirteenth. When Miss Thirteenth came she was a rosy-cheeked little thing—real roses, those were. Her hair was prettily fluffy and her eyes were bright. She did not look at all unlucky. The manager summoned the girls one at a time into his office.

A few moments later the manager's private secretary came out and announced the third girl interviewed had been retained and the rest were dismissed. Laura walked downstairs at the side of the girl who had been working for four dollars a week. At the corner the girl stopped.

"I turn here. I'm going to hunt for something else. Good luck to you and remember, if you don't live at home that you can't take anything less than eight dollars a week and get away with it. And say, try to get them to make it ten! You'll really need ten."

Suddenly a wave of lonesome feeling swept over Laura. She went to the room that she was renting at three dollars a week and wrote to Tom. Tom would be looking for a letter and perhaps if she did not write, he might look her up. She told herself with sophisticated philosophy that you never can tell what a man will do.

The letter mailed, she bought another paper and turned to the want-ad page. Finding a promising advertisement she hurried out again. She found a heavy, surly man who was indisputably the "boss," a surly clerk and a surly stenographer. The stenographer had just been given notice and there was fight in her eyes. Bad as the place was, it was better than job hunting.

While she waited, a girl of the fluffy, ruffly, gum-chewing sort came in. Laura glanced at the topsy-turvy head, glad that her own hair was brushed smooth. Someone had told her that office managers like sleek-haired girls. The fluffy, ruffly one, however, brought a personal letter of recommendation from an important person. In consequence, she of the fluffy hair and ruffly blouse was given the place. Laura regretted for the first time her own smooth hair.

The manager had asked her to come back to Benemaker's early next morning. She went but again a long line was ahead of her. Two girl clerks stood near by, waiting to see the "boss." One was relating her troubles.

"I missed just a half a day Friday," she was saying crossly, "and she called it a day, the old hag! I can prove that I came after lunch. I was sick in the morning."

"Trouble, honey?" the other answered with sweet sarcasm. "Oh, never mind! One old dame took all morning of my time and never a sale."

One young man in the line reminded her of Tom. She had not forgotten her promise that she would marry him if she failed.

She was put to work at the stationery counter.

She knew nothing of stationery but she could read prices. To do that, she thought, and look pleasant, was about all there was to selling stationery. After the first day or so, looking pleasant was not easy. She was not used to standing all day. Even on the farm, work had never been so wearisome as this.

The others told her that it would be hard at first. They were used to it now. On the evening of the second day she was growing a little more accustomed to the work but it was difficult to appear as gay as the other girls near her counter. Every night they went to a dance or a movie while she returned to her three-dollar room, to take off her shoes and bathe her tired feet in hot water carried up two flights of stairs.

Gradually she learned more of her work. At the end of the month she received a small rise in pay. It was some encouragement and she stayed. Meantime, she wrote regularly every week to Tom. In her letters she said as little as possible about her work. It had not been as she had thought it would be.

She continued to bathe her tired feet at night in a basin of water brought up from the first floor and to eat meals much unlike those cooked on the farm where one never stops to wonder whether the milk really came from a cow and whether the eggs were really laid by a fowl or made in a factory.

In another month she earned a second small rise. The Christmas rush was approaching. That meant harder work and longer hours. Every night, along toward Christmas, the tall blonde was so tired she could just drag herself to put the embroideries back into place, and the small brunette lagged wearily as she rolled up yards and yards of colored ribbons. The other girls grew to look so wan and pale that Laura hardly dared look at herself in the little ten-by-twelve mirror that hung above her washstand in the three-dollar-per room, for she had heard that a country girl fades more than a town girl when she is suddenly put on heavy work and light diet.

Then, just before Christmas, Tom came.

Laura knew that he was coming. His train would arrive about eight and that night he would come down to the shop and walk home with her. It was Saturday night and she must work until nine that night.

Just before nine o'clock when she was straightening her piles of stationery, of which the Christmas shoppers had made havoc, she looked up to see Tom four aisles away, talking to the third floorwalker, a pleasant genial fellow. Then the clock struck nine, the doors closed and the girls turned away to get their wraps. At the outer door, Tom, directed by the third floorwalker, stood waiting.

Laura had never guessed just how glad she would be to see someone from home. When they were outside and Tom placed her hand on his arm, it was just as if she had not been away at all.

"Let's walk!" Laura said eagerly when again they were outside in the cold bracing air. "I love to walk across the bridge at night. The water is so quiet 'way down below that it rests me. It's only six blocks and the cars are so crowded and stuffy."

She smiled reassuringly at Tom, who looked as if he had lost his only hope. The third floorwalker had given him a glowing description of her success. Tom felt that he had lost. She had not said that she would come back to him unless she were a failure

They stopped and looked down into the water. It was a quiet place, Tom thought, to tell her what he knew.

"The floorwalker"—Tom tried to speak lightly—"says you have made good."

Laura said nothing. She had not known before that she was successful. Was that making good? Standing back of a counter selling stationery all day, going home at night to soak your tired feet in hot water, getting up and going on the next day and the next and for endless days—was that success?

"It's all a lie, Tom!" she burst out. "I haven't made good! I—I'm a failure, after all! You know, Tom dear, failure's on the inside. 'Way down inside, I'm a failure. One kind of failure is where you try and fall down on your job. Another kind is where you make good but are miserable all the time you're doing it. That's the worst kind of failure and that's the kind I am. I—I don't love my work, Tom—I hate it!"

Tom took her in his arms.

"God bless my failure!" he said earnestly. "We're going home tomorrow."

SPARK PLUG WOULDN'T SPARK

My bonnie lies under the auto,
My bonnie swears under the car,
He can't get the engine to working
And so we must stay where we are.

He's sent to the garage for some one
To tow us to town before dark;
He can't get the spark plug to sparking
It simply refuses to spark.

—Ex

SAVING IN THE LAUNDRY

To save time and fuel on wash day put two wash boilers, instead of one on the stove. The same fire will heat two about as quickly as one, and you can wash one-half quicker, and with much less fuel. If you buy laundry soap, you will find that it pays to buy in as large quantities as your means will allow and let it dry out for several months before using.

To cure the soap remove the wrappers and allow to stand uncovered as long as desired. Then wrap again and put away.

To save time and strength when washing the dirty overalls and shirts that are worn by the men on the farm or to clean any very soiled garments, put them to soak in a little lye-water, then wash through the last suds. Place the goods smoothed out on the washboard and scrub with a stiff brush with a handle. This saves many a hard rub on the washboard, and it saves the hands, hurries the work and also saves the material.

To make good and cheap blueing at home, dissolve one ounce of Prussian blue and one-half ounce of oxalic acid in one quart of water.

To do a big washing with very little soap, put the fine white clothes to soak for several hours in warm suds made with dissolved borax soap chips and put the more soiled and heavier pieces to soak over night in warm suds made with the same solution. When ready to wash, a little soap rubbed on the most soiled places is all that is necessary. The summer net underwear and many soft pieces can be washed through the soap chip suds without using soap. This is the best way to wash white stockings as the soap chips make a very soft suds that loosens all soil in the fabric and all pieces are left a beautiful clear white.

To prevent mildew, see that all clothes are thoroughly dried before they are put in the clothes hamper, and it is worth while to take the trouble as mildew is hard to remove.—A. M. H.

RHUBARB, THE VERSATILE VEGETABLE

Baked Rhubarb Pudding

Three stalks of rhubarb, one cup of bread crumbs, one tablespoon of butter and sugar to taste. Wash and trim the rhubarb, cut in small pieces, fill a pudding dish about three parts full, adding sugar enough to sweeten the rhubarb. Put the sugar in the center of the fruit, not on the top. Mix crumbs with about two tablespoons of sugar and one teaspoon of powdered ginger, place them on the top of the rhubarb, dot with butter and bake in a hot oven for about half an hour. A layer of crumbs may be put into the dish first, then the rhubarb and bread crumbs on the top.

Rhubarb Pie

Wash and cut into inch pieces, but do not peel, as the skin gives a pretty pink color. Fill a deep dish with the fruit, sprinkle over it three tablespoons of flour, or half a cup of cracker crumbs, two tablespoons or butter and enough sugar to sweeten. Cover with a rich crust and bake half an hour, or until crust is brown. If preferred you may use half russet apples with the rhubarb or one-third seeded raisins chopped with the rhubarb.

Rhubarb Cream

Put through a sieve a generous three-fourths pint of cold stewed rhubarb and heat. Soak one-half box of gelatine in one-fourth pint of cold water 30 minutes, add one-fourth pint of the heated rhubarb and stir till the gelatine is dissolved. Then mix in the rest of the rhubarb, pour into a bowl and set in an outer one of ice water. As it begins to set, beat lightly and fold in one-half pint of whipped cream, and one-fourth pint each of candied cranberries and chopped nuts. Pour into a mold and when firm and cold turn out and garnish with candied cranberries.

Rhubarb Ice Cream.

For a gallon of ice cream or custard allow one quart of cooked thick strained rhubarb. Add to it when cold one quart of cream, plain or whipped, or one quart of prepared cooked custard. Flavor with orange or lemon and freeze.

Rhubarb Sauce

Cut and prepare with sugar, as for baking, but set the crock at the back of the stove where there is a slow fire and cook two hours. The pieplant may be put through a colander and then through a sieve and served cold like applesauce or with shortcake.

Stewed Rhubarb With Figs

Cut into inch lengths and place in a double boiler. Ordinarily allow no water but cook, as in baking rhubarb, where a very gentle fire will make the juice exude well to moisten and stew it. Add no sugar till clear and tender and then very little. Some of the best cooks, however, add both sugar and water when first placing on the stove, one-half pound of sugar and one-fourth pint of water for each pound of rhubarb. Serve sold. Soak figs until tender in hot water or steamed till plump and add to the rhubarb just before serving.

Rhubarb Biscuit

Roll out a sweet biscuit dough, spread with either uncooked rhubarb in inch pieces or with stewed rhubarb, butter, sugar and cinnamon. Roll up and bake, adding one-half cup of water to the dish. Bake till a golden brown. Serve with stewed rhubarb.

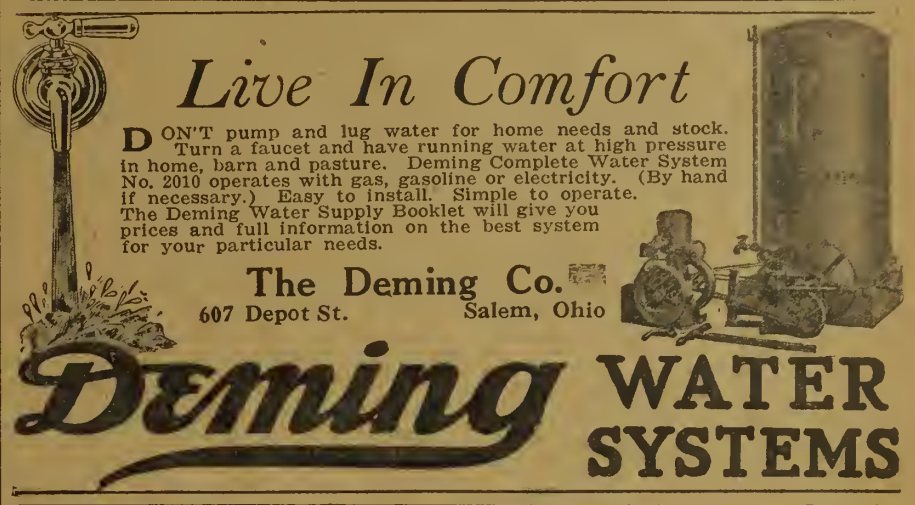
Rhubarb Puffs

One cup finely chopped rhubarb, one cup sugar, two tablespoons butter, one teaspoon baking powder, quarter of a cup milk, two eggs, sufficient flour to make thick batter. Cream butter and sugar, add well beaten eggs, milk, flour, rhubarb and baking powder. Half fill well greased cups and steam half an hour. Sauce—Cream together half a cup each of butter and powdered sugar, then add by degrees one beaten egg, beating until perfectly smooth. The last thing before serving stir in three tablespoons of boiling water.

Rhubarb Fritters

Cut some rhubarb into two-inch lengths and cook it in a thick syrup made of one pound of sugar and one pint of water. When tender remove from fire and leave rhubarb in syrup until cold. Drain; take a tablespoon in fritter batter and fry in a kettle of deep boiling fat. Drain and roll in sugar, and serve with rhubarb sauce or the syrup in which it was boiled, flavoring it with orange.

Letting warm water and a teaspoon of mustard stand a few minutes in the dish in which fish has been cooked will remove the odor.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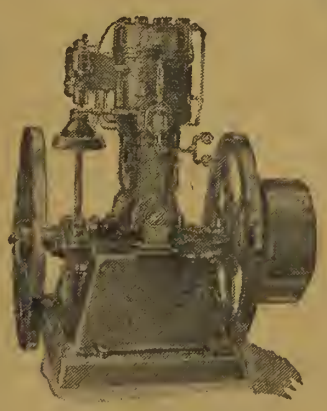


Catalogue on Request

SMITH BOOTH USHER CO
ESTABLISHED 1893
THE PUMP AND ENGINE HOUSE OF THE PACIFIC COAST
LOS ANGELES

Los Angeles Markets

Los Angeles, July 9, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price, 54 lb.; prices to retail merchants in 1-lb. squares, 54@55.

Dairy Exchange prices last week on extras:

	2	3	4	5	7	8
July '19 ...	54	54	..	54	54	54

CHEESE

Brokers' prices:
California fresh, lb., 30; price to retail merchants, 32@33.

EGGS

Fresh extras, Produce Exchange closing price 51 doz., price to retail merchants, 54 doz.; case count, Produce Exchange closing price, 49 doz.; price to retail merchants, 51 doz.; pullets, Produce Exchange closing price, 44 doz.; price to retail merchants, 46.

Dairy Exchange prices last week on extras:

	2	3	4	5	7	8
July '19 ...	51	51	..	51	51	51

POULTRY

Prices to producers: Hens, 27@33; broilers, 28; fryers, 32; roasters, 35; old roosters, 16; capons, 42; ducks, 23; ducklings, 25@27; gcese, 25; turkeys, 34@40; squabs, 45.
Belgian hares, 14.

LIVE STOCK

The market outlook with steers shows very weak condition. Good cows are steady with other grades slow. Hogs around 200 pounds are in active demand. Heavy hogs show very slow sale. Choice lambs are scarce and sales are made above following quotations. Common stock slow demand.

The following prices represent those paid by local killers f. o. b. Los Angeles. County point prices are usually $1.00 to $1.50 less than these figures, dependent upon the distance fro mthe city:

Good steers	10.00@10.50
Medium steers	8.50@9.50
Common steers	7.50@8.00
Good cows	7.50@8.50
Medium cows	6.50@7.00
Common cows	4.50@6.50
Hogs No. 1, 175-225 lbs.	18.00@19.00
Hogs No. 2, all other weights	17.00@17.50
Lambs No. 1, 55 to 75 lbs.	13.50@15.00
Lambs No. 2, 65 to 80 lbs.	11.50@13.00
Wethers	7.50@9.00
Ewes No. 1	6.50@7.00

POTATOES AND ONIONS

Demand and movement moderate, market firm.

Potatoes: Sales to jobbers: California, Burbanks, sacked per 100 lbs. sales from storage, best 2.00; new stock, sacked per 100 lbs., White Rose, 2.65@2.75.

Carlots: Hauling heavy. Good wire inquiry. Demand and movement good, market firm, little change in prices. Quality and condition fair, carloads f. o. b. usual terms. White Rose, best, mostly 2.25@2.35.

Onions: Demand and movement moderate, market firm. Sales to jobbers: yellow varieties, 100 lb. sacks mostly 4.75, red Italian 4.00@4.25.

VEGETABLES

These are the actual prices obtained July 8, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Asparagus: Northern, green, local fancy, 14@15; fancy, 10@11.
Beans: Kentucky Wonder, best, 6@7.
Beets, doz., bunches, 40.
Carrots, doz., 35@40.
Cucumbers: Local lug, 50@60.
Celery: Local, best, 1.35@1.50 dozen bunches. Poorer low as 75. Crates, best, 4.50@5.00.
Corn, sweet, doz., 1.25.
Eggplant, local lb., 8@8½.
Lettuce: Sales to retailers, best lettuce in cabbage crates, 75@85.
Parsley, doz., 15.
Radishes: Round Red 15@20 per dozen bunches. Long White, 30@35 per dozen bunches. Long Red 20 per dozen bunches.
Rhubarb: Local Giant Cherry, 1.25@1.50 per packed box. Strawberry, fancy 1.00@1.35 apple box.
Spinach, doz., 15.
Squash: Local summer, lug, 40@45.
Tomatoes: Best locals, 1.50@1.60; lugs, 2.00@2.35.
Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained July 8, by Los Angeles wholesalers in restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: New crop. Pear box, 2.75@3.00.
Apricots. Bulk, 5@6; lug 1.35.
Blackberries: Cr., 2.75@3.00.
Cantaloupes: Considerable overripe stock on market. Standards, wrapped and unwrapped, best 2.90@3.10. Ponys, wrapped and unwrapped 2.35@2.60. Flats 1.00@1.25.
Cherries: Beaumont district, Windsor, 13@14; Lambert, 17@20.
Figs, per 10 lb bx, 1.75@2.00.
Gooseberries, 10@12 lb.
Grapes: Imperial and Coachella Valley Thompson Seedless 10@12 lb; Sweetwaters, 8@10 lb.; Malagas, 12@15 lb.
Loganberries: 3.50@4.00 per cr. of 30 baskets.
Raspberries, cr., 3.00@3.50.
Peaches: Demand and movement moderate, quality and condition fair. Sales to retailers: Homegrowns supply market. Bulk, various varieties 6@8 lb.
Pineapple, lb., 13@15.
Plums: Demand and movement good. Climax 4½@5 lb. Santa Rosas, 8@9 lb.; Simoni, 8@9 lb.; Tragedy 8@9.
Strawberries, cr., 2.50@4.25.
Watermelons; Imp., lb., 2@2¼.
Demand and movement good, quality and condition only fair. Imperial Valley Chileans and Angellnos, best 1¼@1½ lb. pack, 4.00@4.50; loose, some tree ripe,
Lemons: Fancy packed, 6.00@6.50; local pack, 4.00@5.00; loose, some tree ripe, 3.00@4.00.
Oranges: Valencias, medium fancy, 4.75@5.00; local pack, 2.50@4.00.
Grapefruit: Local fancy, 2.50@4.00 bx.; poorer, 1.50.

HONEY

Carloads f. o. b. usual terms. New crop, demand and movement moderate. Supplies moderate. Market firm, no change in prices. Orange Blossoms 18@20 lb.

BEANS

Demand and movement moderate, market firm.
Carloads f. o. b. usual terms — pool prices, choice, recleaned, Limas 9.00, Henderson Bush 8.00. Wagonloads cash to growers at country loading points, choice, recleaned, small whites 6.25@6.40, large whites 5.75@6.00. Blackeyes 3.90@4.00; Tepary 2.25@2.50.

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	17.00@22.00
Barley	15.00@20.00
Alfalfa	16.00@20.00
Wheat or Baricy straw	8.00@10.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	25.00@26.00
Standard alfalfa	18.00@19.00
Stock alfalfa	12.00@16.00
Standard dairy	22.00@23.00

GRAIN

Prices on local Grain Exchange, carlots:
Egyptian corn, 3.27½.
Milo maize, 2.96¼@2.97½.
Barley, 3.10@8.11¼.
Corn, sacked No. 1, Yellow 3.75½; No. 2, 3.55; No. 3, 3.52½.
Wheat, 44.00@45.00.

San Francisco Markets

San Francisco, July 8, 1919.

BUTTER

Quotations made daily by the San Francisro Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	55
Prime Firsts	54½

Rcts. wk. ending July 7, 3969 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	30@32
Cal, Y. A. fy.	35
Ore. Tripiets	38
Jack, full cream	25@27

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	51½
Firsts	Nominal
Extra Pullets	45

Rcts. wk. ending July 7, 396,770 dozen.

POULTRY

Hens, 28@32; roosters young, 36@43; old, 20@23; broilers, 31@33; fryers, 30@35; squabs, 2.50@4.00 doz.; ducks and and geese, 25@28.
Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Cattle: Grass steers, No. 1, weighing 950 to 1100 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.
Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.
Calves: Light weight, 12½@13; medium, 11½@12; heavy, 10@11.
Lambs: Yearlings, 10@10½; milk, 13@13½.
Sheep: Wethers, 9¾@10; ewes, 7½@8.
Hogs: Hard, grain fed, 100 to 150 lbs., 18; do, 150 to 250 lbs., 18½; do, 250 to 300 lbs., 18; do, 300 to 400 lbs., 17½.
Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:
Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; canner cows, 4@5; good bulls, 5@6½; calves, 9@10.
Hogs: Today's market on top, packer hogs, hard and well finished, weighed and delivered off cars at our plant, South San Francisco: 175 to 250 lbs., 18½; 150 to 175 lbs., 250 to 300 lbs., 18½. Usual dock and price discounts for other weights and kinds.

POTATOES

Supplies liberal. Old: Demand and movement slow, market weak, prices lower. Quality and condition wide range. Sales to jobbers: California, Burbanks, repacked 1.75@1.85. New: Demand and movement good, market steady, little change in prices. Street sales: Garnets and whites, best 3¼@3½.

ONIONS

Onions: Per ctl.: Reds, 3.85@4.00, at dock; yellow, 3.50@4.00; Bermudas, Crystal wax, 3.75@4.00; yellow, 3.50@3.75; green, 1.50@2.00 per bx.

VEGETABLES

Wholesale selling price:
Artichokes, doz., 15@40.
Asparagus, lb., 6@11.
Beans, String, 8@11; Wax, 7@19; Pole, 7@9; Limas, 10@12½.
Cabbage, doz., 50@60.
Celery, cr. of 5 doz., 3.00@3.25.
Cucumbers: Large box, 1.00@1.75; flats, 75@1.25; Los Angeles, lug, 1.00@1.50.
Corn, doz., 35.
Eggplant, southern, fy., 6@12½.
Lettuce, doz., 30@35.
Okra, green, lb., 6@8.
Peppers, Bell, lb., 5@10; Chili, 7@11.
Peas, lb., 7@10.
Rhubarb, Strawberry, lb., 6, Mammoth, 1.50@2.00.
Spinach, 75@1.25.
Squash: Summer, cr., 40@75; Italian, 75 per 40 lb. bx.
Tomatoes: Sacramento River per 40 lb. bx., 3.00@3.80; Imperial, 75@1.00; Merced, 75@1.00.

CITRUS

Wholesale selling price:
Per bx: Lemons, 5.00@7.00; lemonettes, 3.50; grapefruit, 2.50@5.00; oranges, 3.50@5.00.

FRESH FRUITS

Wholesale selling price:
Apples: Newton Pippins, 2.25@3.00; Red Astrachans bx., 1.25@1.75; Gravensteins, 3.00; Crabapples, 20 lb. bx., 75.
Apricots: Winters, 85@1.00; loose 5@7; Royal, 7.
Bananas, 4@8.
Blackberries, ch., 7.00@10.00.
Cantaloupes: Cr., 3.00@3.50; pony cr., 2.25@2.75; flats, 90@1.10; Honey Dew, 1.75@2.00.
Cherries: 1.00@1.50 per tray and drawer; bulk, black, 12@18; do, white, 9@14; Royal Anne, 10@13 lb.
Currants, ch., 12.00@14.00.
Currants, chest, 10.00@13.00.
Figs, 75@1.00 bx.; Brunswick, 75@1.00; whites, 75@1.00, 30 lb. bx.
Grapes—Thompson seedless, 2.50@3.00 per box of 25 lbs.: Malaga, 2.00@2.50 L. A. lug.
Gooseberries, ch., 9.00; lb., 6@8.
Loganberries, ch., 6.00@10.00.
40@1.25.
Peaches: Sacramento, 50@65 cr.; bx., 40@1.00.
Pears, lb., 5.
Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.50; Santa Rosa, 1.25.
Pineapples, doz., 2.00@5.00.
Raspberries, cr., Los Angeles, 2.00@2.50; ch., 12.00@14.00.
Strawberries: Ch., 12.00@15.00.
Watermelons, lb., 2@2½.

DRIED FRUITS

Price to growers:
Apples: 14@16.
Apricots: Opening prices on 1919 dried apricots to the trade:
Sunsweet Quality: Ch., 25; extra ch., 26; fy., 27; extra fy., 29; fy. Moorparks, 29; extra fy., Moorparks, 32.
Growers Brand Quality: Ch., 24½; extra ch., 25½; fy., 26½.
First Quality: Standards, 19; slabs, 21. Other grades on sample.
Peaches: Packers' quotations, basis price: Standard yellow, 16; Muir, 16¼; ch. yellow, 16½; Mulr, 16¾; extra fy. yellow, 17, Mulr 17½; fy. yellow, 18¼; Mulr, 18¾; extra fy. yellow, 19½; Muir, 20½.
Pears, 16@18.
Figs: Callmyrnas, 18@20; Mission, 11@13; Adriatic, 12@15.
Prunes: Packers' quotations basis price: 30-40s, 19; 40-50s, 17; 50-60s, 14½; 60-70s, 13½; 70-80s, 13; 80-90s, 12¾; 90-100s, 12½; 100-120s, and 120s up, no price quoted.

GRAIN AND FEEDS

Barley, (1918 crop): Feed, 2.55@2.60 per cental; shipping, 2.65@2.70 f. o. b. Port Costa; new feed, 2.45@2.55.
Oats: Red feed, 2.20@2.40 per cental.
Corn: California yellow, 3.15@3.40 per cental. Egyptian, 2.75@3.25; Milo maize, 2.50@3.00.
Rye: 3.65@3.75.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3 66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of July 5, Scott, Magner & Miller says:
We quote today wholesale prices in carload lots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5 wire bales)	17.50@18.00
No. 1 Wheat or Wheat and Oat hay	15.00@17.00
No. 2 Wheat or Wheat and Oat hay	12.00@14.00
Choice Tame Oat hay	15.00@17.00
Other Tame Oat hay	12.00@14.00
Wild Oat hay	10.00@12.00
Barley hay	11.00@13.00
Alfalfa hay	14.00@16.00
Stock hay	9.00@11.00
No. 1 Barley straw, bale	.50@ .80

Citrus Markets

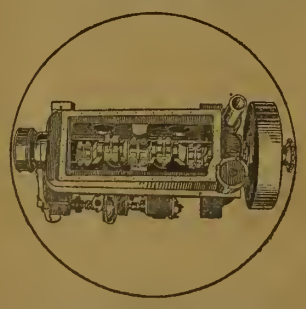
Los Angeles, July 9, 1919.

The orange market is in fair condition, good sound stock commanding satisfactory prices. There are still 7500 cars of Valencias yet to go.
The extremely hot weather has firmed up the lemon market and good prices are being received.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California; oranges 26,731 cars, lemons 7506,

The Lauson Wins Again: at Porterville, Cal.



The LAUSON-BEAVER 4-cylinder Kerosene Burning Engine develops 30% surplus power at a normal speed of 950 R. P. M.

Five well known tractors entered a competitive demonstration recently on the 100-acre orange ranch of Wight & Pfaffinger. Porterville, Cal., and the LAUSON was the *only* tractor able to pull three 14-inch mold board plows anywhere on the ranch. The LAUSON was purchased and is now in every day use.

Some of the grades on the ranch are as much as 20%; the ground is adobe soil intermixed with many large size rocks, presenting extremely difficult conditions. This is typical of LAUSON PERFORMANCE under all operating conditions.

New literature just off the press tells why the LAUSON is "*The Pattern Tractor of the Industry.*"

Distributors for Oregon, California, Arizona and Nevada

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THE JOHN LAUSON MFG. CO.
New Holstein, Wis.

Write for interesting Tractor Bulletin No. 61.

Farmer's Daily Record

Prepared by a Deputy Collector U.S. Internal Revenue Service

Approximately 15 minutes a month to keep complete records of a farmer

Price 50cts. Per Copy
Send Money Order to
FARMER'S DAILY RECORD
340 Douglas Bldg. Los Angeles

total 34,237. To same date last season; oranges 11,775, lemons 4149, total 15,924. Central California this season; oranges 4422, lemons 354, total 4776. Last season to same date; oranges 2539, lemons 115, total 2654. Northern California; oranges 244, lemons 2; last year same date, oranges 203.

AT THE AUCTIONS

July 7

New York: 58 or., 17 lem. Val. 2.80-6.15, Sweets. 2,90, grapefruit 2.90-6.05, lem. 2.60@6.00.

Cincinnati: 2 or., 4 lem. Val. 2.50@4.70, lem. 4.55-6.20.

St. Louis: 3 or., 5 lem. Val. 3.10@5.50, lem. 3.70-5.55.

Boston: 17 or., 12 lem. Val. 3.10-5.35, lem. 3.35-7.25.

Pittsburg: 9 or., 6 lem. Val. 2.80-5.50, lem. 2.95-5.70.

July 8

New York: 50 or., 10 lem. Val. 2.50-6.95, lem. 2.95-6.45, grapefruit 2.65-5.20.

Boston: 16 or., 8 lem. Val. 3.20-5.50.

Pittsburg: 3 or., 3 lem. Val. 4.15-4.95, lem. 3.80-4.95, grapefruit 2.05-2.85.

Philadelphia: 8 or., 3 lem. Val. 3.35-5.30, lem. 5.10-8.05, grapefruit 4.45.

MARKET NOTES

Green and wax beans are netting growers in the San Francisco truck growing district around 6 and 7 cents per pound.

R. G. Risser, federal truck crop specialist, says that cantaloupe shipments for the season have broken all records passing the 600 car mark the middle of the past week. Daily movement declining rapidly especially in the northern portion of the valley. Late crops grown on lettuce and pea land now supplying good stock and year's output expected to exceed 7000 cars unless present hot weather cuts down movement suddenly. There has been little loss this season from aphis and the crop has been handled with less waste than usual in spite of its great size. Root knot caused by nematodes has done serious damage in certain fields.

Green corn is coming in fair supply from Alameda and Contra Costa district. Growers ship to market in sacks containing about 10 dozen and obtain around 50 cents per dozen at packing shed.

Garlic crop is maturing in San Francisco district. Buyers are offering 16 cents per pound for first cars but growers are not selling yet. They are anticipating higher offers when stock is ready to ship.

Potato growers are holding off harvesting as long as possible on account of unsatisfactory market. Heaviest shipments were from the San Fernando Valley where crop is yielding about 6000 pounds per acre.

In the Stockton district early potatoes in small lots are being sacked for local shipments. Carloads will not be shipped in sacks before July 15.

Tomato outlook in Fullerton district is very good. Growers are still planting in San Francisco district. Imperial Valley about cleaned up. In Merced the Stone variety in more liberal supply, selling around $1.25 per 18 pound box. In Alameda and Contra Costa districts fields show excellent growth and vines full of blossoms and set fruits. These districts, however, will not furnish market before August 1.

CAN'T TELL AGE BY RATTLES

How old is a rattlesnake? It has always been a source of satisfaction to believe that a rattlesnake's age could be determined from its rattles. The very simplicity of the theory recommended it. What could be easier? A rattlesnake got a new ring on its rattle every year. Count the rings and you have his age. Now the scientists come along and explode the theory.

"When a rattlesnake is born it is provided with a small button at the tip of its tail. A few months after birth it sheds its skin. In two months more it sheds its skin a second time, and in so doing uncovers the first ring or segment of the rattle which has been developing under the epidermis. Therefore, every time it sheds its skin it uncovers a new segment. Under normal conditions, a rattlesnake sheds its skin three times a year, but unusual climatic or food conditions may vary the number of molts.

"The rattle is a rather delicate organ. The snake wears out the older rings dragging them around over rough, rocky ground. A rattle seldom attains a length of more than ten or eleven rings, as when that number has been acquired the vibration at the tip, when the organ is used, is so pronounced that additional segments are soon worn, broken and lost."—Alfred Westfall, Colorado Agricultural College.

THE CAR WAS ALL RIGHT

"I have a feeling that we ran over somebody back there. Hadn't we better stop and see?"

"What the use? The car is all right, I could tell in a minute if anything was out of order."

MACHINE MADE PIPE

The agricultural experiment station of the University of Arizona has issued Bulletin No. 86, "Machine Made Cement Pipe for Irrigation Systems and Other Purposes." There has been so much making of cement pipe of indifferent quality recently that it is in somewhat bad repute. Cement pipe can be made very satisfactorily, and the object of this bulletin is to discuss methods of greater permanency. The bulletin refers to the fact that many Arizona farmers still prefer the higher priced clay sewer tile and also that in California the use of the tamped cement pipe is increasing. The book gives a most complete treatment of machine and other methods of pipe manufacture; tables as to weight per foot; methods of reenforcing; analyses of material; methods of laying; effect of wetting, of temperature; tables showing pressure tests; in fact, a complete treatise on concrete pipe manufacture.

STRAWBERRIES UNDER IRRIGATION

Strawberries must have an ample supply of moisture, not only during the season of bearing fruit, but also throughout the growing season. For this reason irrigation is necessary to make the crop reasonably sure in most sections. Cultural methods for growing strawberries in the West are described in Farmers' Bulletin 1027, just published by the United States department of agriculture.

As strawberries have a shallow root system the surface soil must be kept moist and irrigation must be more frequent than for many plants whose roots penetrate the soil deeply. The number of irrigations will depend largely on the character and frequency of the tillage used in conserving moisture and on the type and condition of the soil. If the furrows are thoroughly cultivated as soon as the moisture conditions permit after each irrigation, the number of applications of water can be materially reduced, as compared with the number required when cultivation is neglected. In the lighter soils, during the bearing season, the fields may be irrigated as often as every four or six days, and in heavy soils every week or two. During the months when the plants are not fruiting only enough water to keep them in a thrifty growing condition is necessary.

GROWING OF SWEET POTATOES DISCUSSED

Irish potatoes as a commercial crop have a rapidly growing rival in sweet potatoes. Within the last 10 years the farm value of the latter crop in this country has doubled and now is second only to Irish potatoes in commercial importance. To assist growers who are not familiar with the culture and storage of sweet potatoes the United States department of agriculture has recently published Farmers' Bulletin 999, "Sweet Potato Growing," which discusses the subject from the preparation of the soil and growing of the plants to harvesting, storing, and marketing the crop.

Sweet potatoes can be grown under a wide range of conditions for home use, says the bulletin, but when they are to be produced commercially careful consideration should be given to the necessity of suitable soil, favorable climate, accessible market, ample transportation and proper storage. Storage is of great importance, for if the crop is improperly cured and stored it will decay rapidly and the whole year's work will be lost. But it is possible by improved methods to hold sweet potatoes for several months at practically no loss.

This crop is propagated by plants produced by sprouting sweet potatoes in warm sand. Potatoes from which the plants are to be grown should be planted in early spring in hotbeds. In the South, where no bottom heat is necessary, cold frames may be used successfully. Good plants are necessary for a successful crop, for a big harvest depends largely upon the way the plants start off after being removed from the plant bed and set in the field or garden.

ONE THING SURE

A colored boy was taken in the draft last fall and sent to Camp Grant. After a few weeks, he became very homesick, never having been away from home, and one dark night, decided to visit his home without leave. All went well until he neared the outskirts of the camp, when the sentry accosted him thus:

"Halt there, where you goin?"

"Ahm going to Chicago."

"Have you got a pass?"

"No Sah, I haven't."

"You can't leave this camp without a pass."

"Looka heah, boy; I'se got a mother above, and father down below, and a sweetheart in Chicago; an' I know I'se goin' to see one of them three before this night is over."

Any kind of a numskull can be waited on; it takes skill, patience, good judgment, industry and tact to serve.

WEATHER REPORT

San Francisco, California, July 5, 1919.

Stations	Wk.	Season.	Norm.	Rainfall Max.	Temp. Min.
Eureka	.00	.00	.03	58	48
Red Bluff	.00	.00	.00	96	60
Sacramento	.00	.00	.00	90	59
San Francisco	.01	.01	.00	61	48
San Jose	.00	.00	.00	78	44
Fresno	.00	.00	.00	98	58
San Luis Obispo	.00	.00	.01	74	44
Los Angeles	.00	.00	.00	80	56
San Diego	.00	.00	.00	76	60

Borrowing Money On Real Estate

Borrowing money on real estate from a strong, well managed institution like ours, created to transact a mortgage business exclusively, is preferable.

Here are some of the advantages:

—You can deal with this company directly without having to pay a brokerage or commission of any kind.

—You can always borrow at the lowest current rate.

—You can keep the money borrowed as long as you want it—provided your security remains good.

—You can secure releases or pay your loan at any time by paying a small bonus.

—You are under no obligations as this company appreciates your business.

—First mortgage loans are made on improved and productive city or country property as follows:

Business property.
Residence property
Dairy and stock farms.
Alfalfa ranches.
Citrus groves.
Vineyards in raisin district.
Fig and walnut orchards.
Deciduous fruit ranches.
Berry farms and truck gardens.
Choice cattle ranches.

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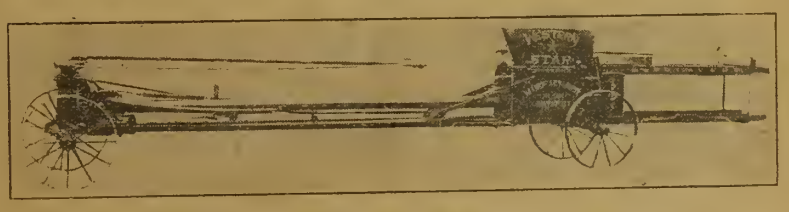
MORTGAGE GUARANTEE COMPANY

James H. Adams, President
Paid Capital and Surplus, $3,000,000
626 S. Spring Street, Los Angeles
Home 10707 Main 6507

Best Hay Baler in California Only $500



No matter how old your Eagle Hay Press is we will make you a liberal allowance for it if you buy the new

WESTERN STAR

with latest improvements, including larger tying space, latest tension device, larger feed hole, lower step for horses. The WESTERN STAR is the lowest priced hay baler in California. Complete your outfit with a TRIUMPH BUCK RAKE and TRIUMPH STACKER.

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1032 East First St. Los Angeles

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Hay, Grain, Potatoes
Cheese, Butter, Eggs
Poultry, Wool, Beans, Honey
and other Farm Produce
Let Us Handle Your Shipments
Quick Sales Prompt Remittance

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No more muscle-straining from a jolting, bumping churn: no more tiresome arm-and-shoulder movement over the separator. Just a turn of the switch and off they go, driven by G-E motors.

There is a G-E Farm Motor suited in size, speed and control to every farm or dairy operation. A man at your lighting company who is experienced in such power problems will help you on yours—or write to our nearest office.

General Electric Company

General Office: Schenectady, N.Y.

A full water tank the year round

ECLIPSE

$1.65 a year

IT'S a mighty still day when the ECLIPSE WOOD WINDMILL does not pump water into your tank. The ECLIPSE is sensitive to light breezes—pumps when other mills stand still.

Powerful, superior construction. Some ECLIPSE WINDMILLS erected 38 years ago are still pumping—without repair expense. Figured on this basis the ECLIPSE delivers a reliable water supply at a cost of about $1.65 a year, the cheapest possible.

The ECLIPSE is time-tried, solidly constructed, and powerful. Requires little attention, and no repairs.

Have your dealer tell you the complete story of the ECLIPSE.

Fairbanks, Morse & Co.
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The power chain

The Gasoline of Quality

"Red Crown" has a continuous, uniform chain of boiling points which gives easy starting, power and mileage. Mixtures have "holes" in the chain. Look for the Red Crown sign before you fill.

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(California)

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Send for Booklet, "Fertilizer Efficiency." Tells You Why.
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Going to build or remodel a barn? Then send for this book. 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Cost over $3,000 to compile. Yours free—for the asking.

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LOUDEN BALANCE GRAPPLE HAY FORK

Lifts an enormous load. Binds it tight. Drops it clean. Spreads it well in the mow. Leaves no litterings to be cleaned up with a pitchfork. Three or four fork-fulls clear the rack. PERFECTLY BALANCED, slender but strong, will not bend or break. A money-saver in haying time.

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Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

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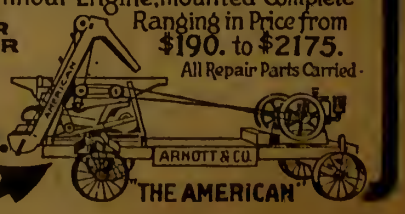
Ask The Grower Who Owns One
Write for Folder, Specifications, Prices Etc.

Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $190. to $2175.
All Repair Parts Carried



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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — July 19, 1919 — No. 3

Big Sister to the American Doughboys

There were 2500 of these big sisters, girls who donned the uniform of the Y. M. C. A., landed in France to brave hunger, fatigue, exposure and shell fire, just for the sake of "doing something for the boys." Some were girls, some were gray-haired mothers, but all knew and loved that specimen of the human race, the American boy, and all went over to dedicate themselves to that boy's happiness and welfare.

The "Y" woman earned first place in the soldier's heart by being to him anything he wanted. If he were depressed, she cheered him; she was always a jolly sort, and good fun. If he were elated she helped him celebrate. If he wanted to talk, she became an ear. If he wanted something to eat, she could always rustle it for him. If he wanted a word of sympathy or advice, she gave it.

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

Vol. LIII No. 3

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The Sacramento office is Room 210 Ochsner Building. All mail pertaining to live stock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member

Eastern Offices:
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S. E. Leith, Fifth Avenue Building, New York
C. A. Cour, Globe Bldg., St. Louis, Mo.

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Saturday, July 19, 1919

OUR ADVERTISERS RELIABLE
We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A drawing of one of the finest of America, the Y. M. C. A. woman, takes honor place on the cover this issue. The comforts of home cannot follow our boys when they go to war, but so far as possible the American people send of their money and their best people that the boys may at least have sufficient to remind them of the comforts when they do come home again. One of the greatest factors in America's success was the Y. M. C. A.

FOLLOWING CALIFORNIA

The college of agriculture at Cornell, New York, is recommending to farmers of that state the study of California cooperative methods. California fruit growers have shown to the world by far the greatest cooperative success of any producing section of the world.

"STANDARD OIL"

The Associated Advertising Clubs of the World is giving warning as to "Standard Oil Company of Texas." The words, "Standard Oil", are to conjure with, and it is asserted by a circular from the Associated Clubs: "This company is in no way connected with the original Standard Oil group." The unwary investor may well keep in mind the warning given and make thorough investigation before purchasing Standard Oil of Texas

DAYLIGHT SAVING

We spoke recently of the passage of the bill by the federal congress repealing the daylight saving act. This was to take effect next October. Now comes the veto of President Wilson, and the farming sections of the United States are in arms and the people of the cities generaly pleased at the result. An effort has been made in the house to pass the bill over the veto of the President, but this was voted down, and presumably the daylight saving law will stand so far as this session of congress is concerned.

BE CAREFUL OF FIRES

The California legislature passed Assembly Bill 445, an act to amend Section 384 of the Penal Code regarding prevention of fires. It is very stringent in its provisions and the punishment is severe to whomever "sets or causes fire to be set to any forest, brush or other inflammable vegetation." Under this law severe fines may be imposed for using any locomotive or engine in a section where there is danger of setting fires, without adequate devices to prevent escape of fires or sparks or burning carbon. Likewise, any one operating a harvester, header, stationary thresher or hay baler shall at all times keep in convenient place upon each said harvester, etc., suitable chemical fire extinguishers, each with equipment of not less than two and a half gallons. Operators of tractors, engines, harvesters, etc., should post themselves fully as to provisions of Assembly Bill 445.

EAT MEAT

Choice and prime beef steers are gradually lowering in price. The department of agriculture takes the position that they will continue to lower unless the American beef consumer ceases to follow the former patriotic appeal; "Eat less meat." The war is over; the boys are coming home; the government is buying no meat for overseas, and England and Italy are making most of their purchases in South America. Hence the department's appeal to the consumer to eat more meat, especially beef and mutton; pork is still in good demand by European consumers, and the United States is the only producer of surplus pork at this moment.

But the consumer comes back with the plea for cheaper meat before he can buy more liberally, and here is the joker in the present beef and mutton situation:

Between March 1 and July 1 medium and good beef steers on foot in Chicago declined 14 per cent; choice and prime declined 23 per cent; likewise wholesale prices of medium and good carcasses showed in Boston, New York and Chicago a decline of 28 and 29 per cent and in most other cities a decline of 23 or 24 per cent. On the other hand retail prices in several cities showed an increase as great as 25 per cent, which was on round steak in the city of St. Paul. The city of Washington showed an increase of 20 per cent; Pittsburg, ten per cent; Philadelphia, three per cent. Slight declines were noted, for instance round steak in Chicago declined eight per cent and in other cities declined from nothing to 20 per cent, but in no case has the decline been equal to the decline of beef on foot.

It's a case for discussing federal supervision, likewise state and municipal laws, for if something is not done there will be serious injury to the live stock industry. Federal supervision of packing plants might be one step in the right direction, but entire government control as with the railroads will be met by rebellion on the part of the people. The people do not want a political farce but relief from extortion. Meantime the beef producer is confronted by the necessity of continuing to feed or sell at a loss.

PHILIPPINE AGRICULTURE

It was recently our pleasure to have a few minutes conversation with Mr. Silverio Apostol, chief of the plant industry division, bureau of plant industry, Philippine Islands. Mr. Apostol is in America studying agriculture in general, but more particularly giving attention to the rice industry. He has investigated conditions and methods of culture in the Sacramento Valley and is now in Coachella and Imperial Valleys learning as to cotton conditions.

The Philippines produce largely of rice, but not sufficient for the entire home supply. While agriculture in general in the Philippines has greatly advanced since American control rice culture is much the same as it has been for generations. The paddies are generally exceptionally small and the power for practically all the operations in rice farming is furnished by the water buffalo, or caraba. As to why the American mule is not used, especially in view of the fact that the losses of cattle from rhinderpest are very great, Mr. Apostol said that it was not possible because the mule or American horse would not stand up under climatic conditions and the fact that much of the work is done on lands covered by water. The seed is not drilled in as in this country but is planted by hand, or rather replanted after it has been grown in seed beds to the height of five or six inches. The replanting is done in soil which is partially covered by water.

Mr. Apostol will spend two years on this trip, much of the time in America, later leaving for the Philippines by the way of Europe and southern Asia.

SELLING FARM PRODUCE

Compared with some other states California producers have a great advantage in this, that our state laws permit of collective or cooperative marketing. These laws permit organization of non-profit associations which have, for the purposes of marketing, all the power which may be secured by the organization of the ordinary stock corporation. These corporations are recognized by federal enactment and to a degree secure immunity from the operation of the Sherman anti-trust law, but even in this state cooperative marketing organizations have used the utmost care that there should be no technical violation of the provisions of the federal anti-trust laws. This has necessitated employing attorneys of ability whose duty has been to outline legal steps necessary to insure observing the letter and the spirit of the federal law.

For these other states where these would-be cooperators are not situated so that they can market collectively there is a measure before congress which will not, if enacted, change the policy of the government as to large corporate interests but will permit collective marketing by producers. At the present moment in both Illinois and New York cooperative organizations of milk producers are under investigation by federal district attorneys. The assumption is that these investigations are to lay the foundation for indictments charging acts in violation of federal anti-trust laws. This situation is preventing the farm associations in those states from securing full advantage of their cooperative organization.

The National Board of Farm Organizations is taking up the fight and endeavoring to secure an amendment to the Clayton act. The particular section sought to be amended provides that only associations having no capital stock may be exempted from the provisions of the act. If the amendment is passed organized dairymen or other producers will have liberty of action under the anti-trust law and can protect themselves from losses and in a large way encourage greater production.

While Californians will not be so greatly benefited as producers in other sections of the United States, they may well encourage its passage, and in doing that encourage a greater cooperative effort on the part of all producers.

Secretary Chas. A. Lyman of the National Board recommends that all who would encourage this beneficial legislation write Congressman Andrew J. Volstead, chairman of the Judiciary Committee, House of Representatives

AUTO GRAPHS

The most welcome sign on the trip was that in the office of one of hotels: "Plunge in Basement. Free to Guests." If there is anything which makes a plunge feel good it's an all-day, mid-summer ride in the San Joaquin Valley.

* * *

Though I am reminded that there was one feature which looked better than a plunge in the basement of a hotel, and that was the Kings River. We were told the water was short because of limited rainfall of the past season, but a look into its depths from the bridge developed a bunch of carp and other fish nearly as long as one's arm. The water, clear as crystal, looked more like the old swimming hole than did the concrete tank.

* * *

But speaking of water we are reminded of the continuous put-put-put heard in every part of the valley. I remarked to Mr. Thomas that with all this "coughing" there would necessarily be a lot of consumption, and he came back with "Yes, and every time they cough they raise a little."

* * *

More correctly, they raise a lot as was indicated by immense fields of green alfalfa, and there is no more beautiful green on earth than alfalfa green.

* * *

Here and there on siding a flat car with tractor indicated that some of the tractor people have been doing the valley and extending efficient power farming.

* * *

At Tulare the street for an entire block roped off, in the center of the enclosure a platform with piano, apparently preparation for a street dance. A few hours later the dance materialized, and people must have come from miles to do their Saturday evening trading and enjoy a bit of recreation.

* * *

One novel feature of a trip through the state is the big sign often located at the entrance of towns, advertising tires. We need not necessarily mention the make of tire, but we may refer to the opposite side of the great book which contains the history of the United States. Plainly, to read the entire edition one would have to travel a great many thousand miles, for the history contents itself with a few pungent sentences touching upon the "history of the town you are now entering." A decidedly unselfish stunt, for it is noted that every one of these great bulletin boards gave vastly more words to the history of the town than to description of the company's wares. Notwithstanding this, it is good advertising.

* * *

Then Lottie Miles took her pointer and informed us that we were now at ———, with a map of the entire section showing all of the good roads traced out on an immense bulletin board. More valuable information, hence good advertising.

* * *

This reminds me that some of the most interesting reading matter in this world is that appearing in the advertising columns of Tho California Cultivator.

* * *

The best of an auto trip overland is the information one secures as to the immense amount of real constructive work now going on in California. But once on this trip we saw the reverse. It was a gold dredger engaged in destroying hundreds of acres of good agricultural land in order to secure the gold dust lying down next to hard pan. We need gold to conduct the business of the world, but we fear the time may come when the world will wish most cordially that we of this generation had regarded with more consideration the bread producing power of these lands which we are destroying.

The Maxwell Plan

By M. E. Bemis

YEARS ago when it was beginning to be apparent that the land area under the canals in the Salt River Valley of Arizona was too great for the available water supply in the dry years, there was one man who persistently advocated a storage reservoir. He was one of those with a vision, a dreamer, if you please, who could look forward into the future and see the possibilities of an ample water supply for the Salt River Valley.

Years later when the Roosevelt Dam was built and people could see the realization of his dream, one of the editors of a daily paper said of him that he was the only man he ever knew who sought to find the pot of gold at the foot of the rainbow and found it. This man is George H. Maxwell. This is the man of whom it is sometimes said that no matter upon what subject he speaks, you need to carry an umbrella and wear gum boots, because sooner or later in his talk he gets around to the subject of irrigation.

The Roosevelt Dam is no longer a dream; it is a reality. Two hundred thousand acres of land are irrigated from the reservoir which this dam has made. Seventy thousand people have found homes in the valley, which was once a desert, but which now is as productive as any spot in the world. The total value of crops produced is more than $20,000,000 a year. To this can be added $5,000,000 for the live stock and live stock products raised on this area.

Maxwell did indeed find the pot of gold at the foot of the rainbow, but now there is still another rainbow, and he has succeeded in convincing many level-headed men that there is a pot of gold at the foot of this rainbow as well.

The plan, which is a broad one and not fully worked out in detail, is to bring under irrigation every foot of land possible within the state of Arizona. Of course it is not altogether new, but any previous plans for irrigation projects have been local and have not taken into consideration the relation of these projects to any other project which might possibly be contemplated in the future, and only so far as was necessary according to law and established rulings have they taken into consideration projects already established.

The new Maxwell plan contemplates the development of land beginning on the Upper Gila, and with thorough investigation of each and every project on this river, together with surveys which will settle without question the practicability of each proposed project. They would gradually work out the best location for storage reservoirs and the land to which the waters from these reservoirs could be supplied in such a way as to irrigate most land at the least cost. Beginning again on the Colorado River, the plan calls for a gigantic dam at the 1000 foot contour which would permit the building of a canal high enough to water 1,000,000 acres and to provide storage capacity for not only this but all that would be required in the Imperial Valley and other projects now receiving water from the Colorado. This will develop power, the gross value of which would be at least $1,000,000 annually.

In addition there would be the development of storage underground water to be located by surveys, and careful calculations indicate that this, together with the conservation of the water of the Salt River and Verde River would result in increasing the area of irrigated land in the Salt River to 600,000 acres. The total area of land which he believes could be irrigated through a broad plan of this kind is two million acres. In order to get this plan into working order a committee is proposed one from each project and one from each civic organization throughout the state. This committee will take up in detail each proposed irrigation project. They will require surveys to be made for the establishment of storage reservoirs and for the location of underground water supplies. All data compiled will then be considered, and with the one thought in view of the greatest possible development for the Southwest they will recommend the establishment of storage reservoirs and building of canals which will accomplish these things.

It is probable that the next legislature will be asked to authorize a bond election to cover the cost of putting these plans into effect. The cost of such a project is estimated to be $100,000,000, a sum that a few years ago would have staggered the public. Today, however, looking backward to the expense of the war, which amounted to $100,000,000 daily, the expenditure of this sum, which would bring into cultivation 2,000,000 acres of land producing crops worth $200,000,000 annually, does not seem an insane idea.

For the coming generation we must look to the desert and the swamps of America for the farms of the future, and the need of more farms and more farmers is becoming greater with each succeeding year. It is only by broad comprehensive plans of this kind that more agricultural land can be made possible.

Is Cooperation Worth While?

THE strength of any cooperative organization lies in the intelligence and integrity of its members. As indicated in the following article by Wylie M. Giffen by far the greater majority of the members of the California Associated Raisin Company are men of intelligence and integrity. Presumably such is the case with the majority of the cooperative associations. It is the case with all that are succeeding, for unless the management knows that it has behind it staunch and true supporters it cannot have faith in its own promises, nor can it build nor make plans for the years' business. Fortunately this lesson has been learned by most producers who have formed cooperative associations, and they have builded accordingly. For the members who lack the true qualifications of cooperators there are clauses in contracts which legally bind them to the performance of their duties.

But with the Raisin Growers' Association—and it is not an exception—there has been effort put forth to discredit the association and discourage its members. This has called forth a very forceful, frank and square statement from the manager of the association. The questions involved concern all cooperators and they are so forcefully stated by Mr. Giffen that we give his entire communication recently appearing in the Sun-Maid Herald.

By Wylie M. Giffen

One of the great benefits to be accomplished by this organization was the elimination of speculation, and in line with that policy the board of directors, sometime ago, decided that the prices of the 1919 crop would not be named until sometime during the month of August. At that time we can tell better what the crop is going to amount to, and we can come nearer judging of the consumer demand and of financial conditions. The raisins cannot be moved until September and October and as we see it there is absolutely nothing to be gained by naming the prices at the present time. We believed also that it was the better policy not only to refrain from naming the prices but to come to no decision and to give no intimations as to what the prices would be until such time as we could act intelligently, but some of our competitors have been so persistent in preaching the gospel of discord and trying to persuade the growers to violate their contracts with us that we now deem it advisable insofar as we can to allay their misapprehensions.

We, of course, do not yet know what the prices will be, but there seems to be no reason now, in spite of the fact that we will harvest the biggest crop in the history of the business, why the prices should not be much more than last year, and yet one of our competitors is busy showing the growers what he claims to be a copy of a circular sent out to the trade by this office under date of May 24, to the effect that 1919 prices would be no higher than 1918 prices and as their prices were four cents higher the grower could pay the $40 per ton indemnity provided for in our contract and be ahead $40 per ton.

In regard to this mysterious circular we can only say that if it is in existence it was not prepared and sent out by this office. In fact no circular, under date of May 24 in regard to the 1919 crop or any other subject, has been sent out. Further than this there has been no circular sent out at any time that in any way furnishes a foundation for this false report. We have gone over the circulars of our sales department carefully and there is not a single circular that in any way indicates that the prices of 1919 raisins will not be higher than the prices of 1918 raisins. In fact this supposed circular reads so much like the circulars that were sent out by our competitors in the good old days when raisins were 1 1-2 cents per pound that we cannot help but believe that their filing clerk has made a mistake and gotten hold of one of their own circulars. At least the packer who is using it was prominently identified with the number who disregarded absolutely the law of supply and demand in the old days, and sold the growers' crops before the bloom was on the vines for much less than the cost of production, and under these circumstances we believe that as growers you are justified in at least waiting to see what the prices of your own organization are going to be, and it is the judgment of the writer that if you regard your honor so lightly as to desire to violate your contract that you will be able to get at least as much money from the outside packers then as now. A few growers whose minds have been poisoned by this propaganda have come to the office to see whether they could not pay us $40 per ton and sell elsewhere. Our answer to this is that under no conditions will we voluntarily agree to the release of any crop. The keystone of an organization of this kind is the honor of the growers. We could not permanently exist without it. Any policy that we may adopt must apply to every grower alike, and if we are to voluntarily release the grower's crop by the payment by him to us of $40 per ton then this should be made a general policy that would apply to every grower alike, and if every grower availed himself of this opportunity to pay us $40 per ton in liquidated damages we would be able to pay the stockholders a good dividend but would be out of business and our usefulness destroyed for all time. As we have already sold at a price to be named later a large percentage of this crop these contracts could not be filled and our written pledge would be worth less than a scrap of paper in the hands of the Huns. However, we have learned by six years' experience that even under the stress of a great temptation at least 98 per cent of the growers are honorable. Thus far there have been but few violations of the contract and we cannot believe that in this, the moment of our greatest prosperity, the growers are going to sacrifice the principles which have made possible the upbuilding of one of the greatest producers' organizations in the world.

It is not the purpose of this article to hold out a hope to the growers that the prices of the association will be as much or more than is now being offered by the independent packers for the few crops that still remain unsold. As we understand our duty it is to sell the entire crop of raisins for the most money that we can possibly get and it is not to try and run a race with the packers to see who can buy and sell a few crops for the highest price, and while our prices may not equal 10 cents per pound, we do believe that what has always been true will be true again and that our price will be more than the average price of the outside growers. A large percentage of the outside growers sold their crops at about six cents per pound, which we all believed at that time to be a good price. There are probably not over two per cent of

Continued on Page 75

Agricultural News Notes of the Pacific Coast

Northern California

Pears are beginning to move in carlots.

Butte County has 150 acres of broom corn on one ranch.

Haywards, Alameda County, is planning for a farm products show.

Corning, Tehama County, reports exceptionally big crop of almonds.

The Haywards Review reports one sale of apricots on tree at $125 per ton.

Recently flooded areas in Sutter County were badly infested with grasshoppers.

The cannery at Corning has a large force of women and children cutting apricots.

Heavy shipments of plums are being made from Suisun, Vacaville and Newcastle.

The California Industries and Land Show will be held in San Francisco October 4-19.

Commissioner Fred Brosius of Sacramento County reports 156,000 trees planted this season.

Canneries are said to be paying $85 a ton for pears in the Lodi and Sacramento districts.

At the recent annual election of the Yuba County farm bureau Cline Bull was elected president.

Modoc County has intensive squirrel campaign under direction of Commissioner Thomas Briles.

The Sacramento Valley has increased its rice acreage over that of 1918 by nearly 25,000 acres.

Eden township in Alameda County is planning a farm products show to be held is the near future.

Martinez chamber of commerce will hold the Contra Costa County Land and Stock show October 6-12.

A new fruit dryer is being erected in North Secramento. It is primarily intended to handle wine grapes.

Concerted fight by all farmers in the Bogue district of Sutter County is being made against grasshoppers.

Butte County's crop of apricots is even larger than anticipated. The hot days caused early harvesting.

Yuba County is sending rice to Korea for seed, for which it is receiving 18 cents above government price.

Plans are being made to ship hundreds of tons of dried wine grapes to other countries for making into wine.

The board of supervisors of Butte County has approved the petition for the formation of the Wyandotte irrigation district.

Larger shipments than ever before are being made to apricot canneries this season from the Vacaville district of Solano County.

Glenn and Colusa Counties are holding meetings looking towards the bringing of 103,000 acres of land under irrigation and more intensive culture.

The board of supervisors of Butte County has appropriated funds for the support of the work of the county adviser for the coming year, but the proposal to employ an assistant adviser was turned down.

At a recent meeting of the Durham Almond Growers Association, it was decided to pay $4 a day during the present season to all male labor for nine hours. Women were voted $2.50 per day for eight hours of work.

Central California

Ceres, Stanislaus County, reports sales of Tuscan Clings at $81.

A Porterville fig grower has sold his crop at nine cents per pound.

Fowler, Fresno County, is building a new fresh fruit packing house.

Kings River is at the lowest stage it has been for 24 years this date.

The eight-hour day will prevail in many fruit growing sections of the valley.

The Associated Dairymen of California have issued bonds to the extent of $180,000.

Johnson grass pasture resulted in the death of several cows at Hanford, Kings County.

The increased acreage campaign is on with the California Prune and Apricot Growers Inc.

Quinces and pears near Porterville, Tulare County, have been seriously injured by fire blight.

Stanislaus County is busy harvesting earlier crops and fitting ground for second crops of the season.

The Mariposa-Big Tree road, on which government surveyors are now working, will run through the apple belt.

The California Farm Bureau Marketing Association recently sold Stanislaus County hogs at the top price of $17.60.

Prune growers of the Santa Clara Valley have installed evaporators or fruit dryers in order to be independent of the weather.

The Ahwanee Valley center of Madera County is planning to hold a big fair in September, at which the stock exhibit is expected to be the leading feature.

The farm bureau of Kerman, Fresno County, is discussing advisability of cooperating with the California Fruit Growers' Association in the building of a community camp for laborers.

The Merced County farm bureau, at its last meeting, made formal protest against nonpayment of dockage loss for oats and other foreign grains which millers find in wheat or barley, and which they sell as a byproduct.

Leroy B. Smith, who has been farm adviser of Fresno County, has been appointed supervisor of farm advisers of the southern half of California. Mr. Smith will continue his duties in Fresno County until the appointment of his successor.

A carload of wool sent to Boston by sheepmen of Stanislaus and Merced Counties brought only 30 cents per pound. It is reported the growers had refused an offer of 45 cents from a local concern expecting to get a good price in the East.

A half car of plums was condemned at Fresno by Horticultural Commissioner Roullard acting under the fresh fruit standardization law. The fruit was small at the bottom and faced with large sizes. It was allowed to be repacked and shipped.

There was a meeting of packers and growers of Stanislaus County the last of June to discuss standardization laws governing cantaloupe pack. The meeting was attended by G. P. Wilson, chief secretary of the state standardization department, and A. S. Hoyt, secretary of the state horticultural department.

Southern California

The apricot crop of Ventura County is expected to amount to 400 dried tons.

Pomona will be the site of a new state institution known as the Pacific Colony.

Imperial Valley will hold a live stock fair sometime during the coming fall.

Cotton acreage in the Imperial Valley is ten per cent greater than last year.

Cucamonga, San Bernardino County, wine grapes have been contracted for at $25 per ton.

The Apple Valley district near Victorville has organized a unit of the county farm bureau.

The Anaheim Sugar Company will manufacture and introduce a new product, orange syrup.

Letters may now be sent to any part of the United States for two cents, post cards for one cent.

A summer course for teachers in agriculture is being given at the citrus experiment station at Riverside.

Two carloads of pure bred Holsteins have been received by dairymen near Arlington, Riverside County.

The Elsinore and Temecula sections are investigating and find that the best of sugar beets can be grown there.

Nearly 7000 cars of cantaloupes have been shipped out of Imperial Valley this season. Last season's output was 4094; 1917, 3148.

The farm bureau of Fallbrook, San Diego County, held a meeting July 1 on the Myers ranch. Irrigation of citrus tres was demonstrated.

The federal labor bureau of Imperial Valley at El Centro reports a shortage of men to satisfy the demands on every day during the past month.

Sawtelle and Inglewood, Los Angeles County, have organized Lima bean growers into an association which will affiliate with the Lima Bean Growers' Association.

Drainage experts from the University of California have been making a survey of the Garden Grove district, Orange County, to find what will be necessary to install a drainage system.

Dr. Whitten of the state university has been delivering talks on orchard pruning with especial reference to summer work in the orchards, before farm bureaus of several southern counties.

Heavy shipments of cantaloupes to eastern markets are said to have seriously affected the sale of Valencia oranges. Packers therefore are holding up orange shipments until the cantaloupes are off the market.

J. F. Warner of Brawley has been elected president of the Imperial Valley Poultry Raisers' Association. The association will first devote its time to cooperative buying of feed supplies, later to marketing and advertising.

Apricot growers of the Fillmore district of Ventura County have decided on a wage scale of $3.50 per day for a nine hour day for field workers. For pitters 17½ cents per box is to be paid for the entire season's work. Where the worker does not remain throughout the season the price will be 15 cents.

The Coast and General

Union County, Oregon, held its annual livestock show at Union, June 11-13.

The beet fields in the lower part of the Yakima district of Washington are being seriously affected by blight.

Klamath County, Oregon, is planning for its county fair which will be held at Kilgore Lane, opening October 2.

Washington dairymen, who are members of the Inland Empire Dairy Producers' Association, are laying plans to distribute their own milk in Spokane.

Pima County, Arizona, is to follow the example set by Maricopa County and has called a bond election for the building of paved roads at a value of $1,500,000.

A new 20 stand gin plant is being built in Phoenix and will be ready for operation by September 15. This will be the largest gin in the Salt River Valley of Arizona.

Chehalis and Centralia, Washington, are becoming the centers of a large berry industry. Strawberries, loganberries, raspberries and blackberries have proved equally successful.

The cabbage worm is said to be doing serious damage to crops in Hawaii. The California state insectary has shipped a quantity of parasites to aid the Hawaiian growers in their fight against the pest.

At the suggestion of the forest service in Arizona, the state land board has relinquished to the federal government all state school lands within the forest reserves. This will amount to 6,322 acres.

The first farm settlement unit in Oregon is a 60-acre plot near Independence. Four other sites will he selected in the state. Two farms will be in eastern Oregon, one on the coast, one in southern Oregon.

The land law passed by the last legislature, permitting the state land commission in its discretion to lease land in larger tracts than 640 acres, has become effective. An effort to invoke the referendum against it failed.

Two representatives of the United States bureau of markets are located in Phoenix, Arizona, during the cantaloupe season to give out market information and assist the distributors in placing their products in the best markets.

The Salt River Valley Water Users' Association is making plans for the extension of the electric lines throughout the irrigated districts of the valley, so that ranchers of the valley may be supplied with electricity for power and lighting.

The county highway commission of Maricopa County, Arizona, has filed an application for $578,590 for federal aid on the roads of Maricopa County. This will supplement the $1,000,000 which will be expended by the county for the building of 274 miles of paved roads.

Summer rains in Arizona have begun. Showers have occurred in the southern part of the state and also in Navajo County. The general condition of livestock on the ranges is good, and sufficient water for stock purposes is reported to be in most of the range country.

Fighting the Walnut Aphis

By Robert W. Hodgson

AMONG the most notable developments in the field of economic entomology in recent years must be counted the new dust spraying method for controlling the ravages of the walnut aphis, as worked out by Professor Ralph E. Smith of the state college of agriculture. The results of the present season's work have clearly indicated that with the new method it is now possible to effectively control this pest and at less than half the cost with the old method of liquid spraying. Moreover, the dust spraying method developed for combating the aphis promises to lend itself very readily to the control of similar pests of other orchard trees and therefore apparently marks a new era in orchard pest control in California.

While the aphis has always been a pest of walnuts in this state, until comparatively recent years it was deemed of little importance. Nor was any other pest, for that matter, with the exception of blight, considered of sufficient importance to arouse any anxiety. In fact, the growing of walnuts, provided the trees were located on good soil, was considered as attended by less risk and expense than almost any other branch of horticultural effort. Although still recognized as comparatively free from serious pests and diseases, there are many who now realize that this attitude of false security has worked serious injury to the walnut industry in general. For to it must be attributed the general lack of care and attention given the orchards and particularly interest in combating injurious pests which have existed in many sections until within the last year or two.

It has taken the advent of a new walnut pest in the form of a strain of codlin moth entirely distinguishable from the ordinary pest of apples and pears, but which has developed a taste for walnuts, to bring home to growers in general the realization that the industry has now reached the stage when its existence as a profitable branch of horticultural effort depends upon systematic campaigns for control or eradication against not only the new menace but all the old and less serious ones as well. And in this renewed interest in walnut pest control fighting the aphis naturally assumes an important place.

Another contributing reason for renewed interest in aphis control is the feeling on the part of growers that of recent years aphis infestation has been much more general and serious than it used to be. Many of the older growers are certain that eight or ten years ago there was much less aphis than there is at the present time. Then, too, growers are beginning to realize that any considerable amount of aphis working on the trees at the time they are carrying the developing nuts, and particularly if especially abundant, must result in a material injury to the trees, not only in a general enervating effect but probably also in a reduction in size and weight of the nuts. To be sure, there are still some who insist that the aphis does little injury other than the topburn which follows the production of large amounts of honey-dew, but a rapidly increasing number of the more progressive growers and experts are of the opinion that large annual losses result from the work of aphis. While on account of the many factors involved it will be extremely difficult to actually determine the loss per acre, such experts as Professor Smith, probably the best informed walnut investigator in the state, and Carlyle Thorpe, manager of the Walnut Growers' Association, and one of the largest growers, feel that a safe estimate of the reduction in crop per acre occasioned by an average infestation is from 75 to 100 pounds of nuts. At present prices this would represent a loss of in the neighborhood of $15 per acre. And not only do they believe the crop to be reduced in weight, but that a severe aphis infestation materially weakens the trees, preventing them from entering the next season in as vigorous and thrifty condition as desirable. There is also a feeling that not only does aphis infestation result in a general devitalization and reduction in weight in the nuts, but also increases the per cent of perforation and number of "blanks." Mr. Thorpe in a recent talk on the subject candidly stated that in his opinion aphis annually causes a loss of half a million dollars to California walnut growers. He even went farther and prophesied that within but a few years growers everywhere would count aphis control measures just as important as irrigation or any other cultural operation.

Demonstrating Aphis Control

In action. Notice how the dust is thrown out in clouds. Recent demonstration under auspices of the Los Angeles County farm bureau. Professor R. E. Smith, supervising demonstration, is standing on rear of platform.

The Old Method

In the past, where control measures for the walnut aphis have been attempted, the only method available has been liquid spraying with nicotine sulphur of approximately the same strength as that used for spraying citrus and other crops for this pest. While if properly applied, the results obtained were entirely satisfactory, the per cent of kill being very high, there are a number of serious drawbacks to this method. In the first place the cost is almost prohibitive, averaging approximately 50 cents per tree. And not only is the cost high, but it is impossible to get over an orchard quickly without the use of a number of spray rigs working at the same time. From five to ten acres, depending on the size of the trees, is about all that a spray rig and two men can cover in a day's work. Minor drawbacks are the difficulties in covering such large trees as old walnut trees and the rather disagreeable nature of the work. On account of these two latter, in some sections it has been almost impossible to get commercial sprayers to spray walnut trees for aphis.

The New Method

The new method involves the use of a dry dusting mixture blown onto the trees by means of a powder duster. The standard machine used at the present time is the dust sprayer run by a three-horse gasoline engine. The duster itself is simply a centrifugal air-blower which is so geared up that when properly adjusted it delivers a cloud of dust which completely envelops the tree so that every leaf is covered.

The outfit is usually set up on a sled or low lying wagon bed pulled either by a team or tractor, and the jet is directed from underneath the carriage, being kept constantly moving, both sides of the row being dusted. Two men only are required, one to drive and the other to handle the nozzle. From 20 to 40 acres a day can be dusted by one outfit, depending upon the size of the trees and the way in which the rig is set up.

The material used at the present time consists of 74 per cent kaolin, 24 per cent hydrated lime, and two per cent nicotine sulphate. The latter is the killing agent, the other ingredients serving as carriers. For several years past Professor Smith has been convinced that the power blower was the solution to the high cost of covering such large trees as walnuts, but the main difficulty has been to obtain a satisfactory dusting material. This material must run uniform in composition, must be thoroughly mixed, must not be injurious under extraordinary weather conditions, and still must be cheap. Various combinations were tried before the present entirely satisfactory material was developed. Mixtures of hydrated lime, sulphur and tobacco dust in various strengths were used and with varying results. It soon became evident that the sulphur must be discarded on account of burning. Equal parts of kaolin, lime and tobacco dust proved fairly satisfactory last season, but different lots did not seem to give the same efficiency, which was later found to be due to variations in the nicotine content of the tobacco dust.

Finally Professor Smith decided that the only way to obtain a uniform product was to make up a suspension of suitable amounts of kaolin and lime and to add nicotine sulphate in any amount desired to make any specified strength. Later came the development of a method of spraying the nicotine sulphate onto a finely sifted mixture of hydrated lime and kaolin. When the material comes out of the factory, which is run by the Walnut Growers' Association, it is in a very finely divided condition so that it blows well.

From two to three pounds of the material is the average application per tree and will give a 95 per cent kill. The cost of the material is five cents per pound at the factory. Costs of application vary, but a number of commercial operators are dusting trees at five cents each, which makes the total cost range between 15 and 20 cents per tree.

The kill is effected largely by the fumes and is very rapid, as within a few minutes after dusting clouds of dead aphis may be seen falling from the trees. The zone of effective killing is comparatively large as for two or three rows beyond the dusted area the trees will be found to be comparatively free from aphis.

In short, the new method has at one stroke cut the cost more than half and made it possible to get over the orchard from five to six times as fast. In fact, it has made it possible to profitably fight the aphis. If the loss per acre is $15 and the cost of dusting $4, one can readily see that it will pay to dust. The new method also gives promise for successful control of the new codlin moth worm, for which it is now being used in infested areas, dry powdered lead arsenate being added to the aphis dusting compound.

It should be pointed out in connection with a discussion of aphis control that it is futile for a grower to dust or spray his orchard when he is surrounded on all sides by untreated and infested orchards. Within a few days his infestation will be about back to where it was from the wind having blown them in from neighboring orchards. Aphis control is, strictly speaking, a community problem. With the new method it seems possible to quickly and effectively cover a large enough acreage to make one application sufficient. This is apparently what has occurred this past season in Santa Barbara County, it being reported that practically every orchard in the county was dusted.

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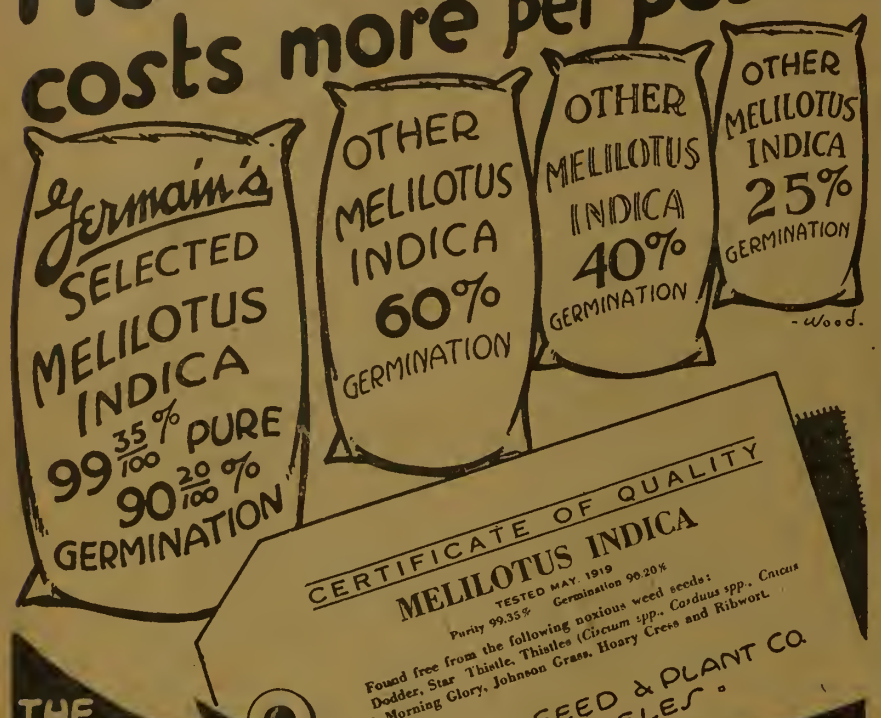

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Methods That Are Different

PEOPLE in commercial life are continually catering to that everlasting desire of the human for something different, and with them it pays—sometimes. The farmer is more inclined to stick to "dad's way," notwithstanding he has been fairly free to supply himself with up-to-date implements and appliances. But when it comes to theories of planting, of pruning or other cultural methods, "the old way is the best." However, Dr. J. C. Whitten, termed "dean of American horticultural teachers" and recently installed head of the division of pomology of the University of California, is making some demonstrations and giving a number of quiet talks which are convincing many that a greatly increased crop of deciduous fruit may be had by methods that are different.

The prevailing custom in deciduous orchards of California and we imagine of all fruit growing sections, has been to use the first three years growth of the tree merely as a foundation structure for the tree which shall grow after these three years, and as a foundation proposition it has been the theory that we must build low, in other words the pruning has been very severe, leaving stubs of only six to eight inches of the preceding season's growth. This has induced exceedingly strong wood growth, which each year has been sacrificed. Now Dr. Whitten says this is all, or at least nearly all, radically wrong.

One of Dr. Whitten's theories is: "When you start anything put it over," and he certainly is putting over the theory that the longer branch with well distributed leaders, two or three of them, from this branch shall be encouraged. Thumb pruning during the growing period reduces the ambitions of all those branches other than the three which have been selected. Two, three, or a half dozen leaves may be allowed on these as a protection to the main branch and to encourage fruit spurs distributed along the branch. The growth of these fruit spurs is also encouraged by the open head which admits sunlight to all parts of the tree. This open head is maintained by continuous summer control rather than by heavy winter cutting.

At first look it appears that this system of pruning would result in pulling the trees to pieces by the first heavy crop, but the general distribution of the fruit spurs close to the leaders, or principal branches of the tree, saves the tree from breaking or being pulled down by the large crop which sometimes sets near the tips of the branches under the old system.

Dr. Whitten is doing much of his work in connection with farm bureau center meetings, and his blackboard talks are almost equivalent to actual demonstrations in the orchard.

Results in Plum and Prune Pollination Tests

General results of five years' testing of 17 varieties of Japanese and European plum types in which more than 100,000 hand pollinations were made and more than 175,000 blossoms were counted have been made known by A. H. Hendrickson, assistant professor of pomology University of California.

The Japanese varieties, Combination, Kelsey, Satsuma, Burbank, Wickson, Sultan and Abundance, are self-sterile to their own pollen, says Professor Hendrickson. Among the European plums and prunes Clyman, Tragedy and Robe de Sergeant are clearly self-sterile, though Imperial, while occasionally setting fruit with its own pollen, is too uncertain to be classed commercially as anything but self-sterile. Grand Duke is said to be probably self-sterile.

Reported to be clear-cut and consistent throughout the five years, the results obtained in most cases are said to show that the French Agen and Sugar prunes are undoubtedly self-fertile. Professor Hendrickson declines to draw any definite conclusions as to the pollination of Pond and Yellow Egg as these were tested for sterility for only one year.

Inter-species crosses were not attempted, but cross-pollination of Japanese as well as European plums is effective, it is stated, if their blooming periods occur approximately on the same date. No cases of inter-sterility were reported found.

Whitewash on Young Trees

Dr. Whitten says: "Whitewash your trees at planting." He and other investigators have demonstrated that the temperature of the sap in the trunk and small branches of the deciduous fruit tree is much higher than that of the air around it. This is especially true in the winter time. This is during daylight hours, of course; when the sun goes down the reverse is true, hence great injury to some trees because of this extreme variation. A whitewashed tree, on the other hand, instead of absorbing the heat from the sun, reflects and refuses to take it up.

This hint may not be exactly timely, but the fruit grower who is today observing some of the results of sunburn on the southwest side of his trees may the more easily absorb the lesson and be prepared with the coming of the next winter season with whitewash. Strange as it may seem most of our sunburn comes from the winter's sun. The variation in sap temperature is far greater in the winter because of the correcting power of the sap continually being pumped through the tissues of the tree when the processes of growth are under way.

INCREASE PRUNE YIELD BY PRUNING SYSTEM

Short courses in horticulture to be given at the University of California Farm, Davis, from December 8 to 20, will explain the new system of pruning advocated by the university whereby the average yield of the trees pruned is said to be about four times as great as that of trees of the same age pruned in the old way.

Questions as to the possibility of changing bearing apricot, peach and plum trees from the old plan of pruning to the new system are dealt with in the course. In general it may be said that this is very easily done. Interested growers are invited to inspect apricot trees growing at the University Farm to see what has been accomplished with these trees five years after the pruning system was changed.

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SPRAYING FOR APPLE PLANT LOUSE

In order to control the aphid in the egg stage the material used must prevent the nymph from hatching or it may be of such a nature as to kill the nymph as it hatches. The preventive may act in several ways. Any substance which will harden the outer semi-transparent shell and thus make it impossible for the nymph to emerge would be satisfactory, or the material used could have the opposite effect, that is, soften or dissolve the outer layer and thus expose the inner, pigmented layer to evaporating factors such as wind, heat or low humidity. Furthermore, many substances are splendid desiccating agents, and any material possessing this quality might be able to extract the water content of the ovum or embryo and thus prevent further development. Again, the use of any toxic substance which will penetrate the egg coverings and attack the living embryo would naturally be a control measure. Another possible means of control would be the discovery of some chemical which will loosen the egg from the twig and cause it to fall to the ground.

DEHYDRATING FRUITS AND VEGETABLES

Greater attention was never given to the study of preparing California products for market than during the last two years. Our distance from even the American markets has made most attractive the drying and dehydrating of products which heretofore have been canned and sent to market at great transportation expense. Unfortunately more delicate flavors could not be preserved when dried and these products were not so popular as the canned. However, improved processes have greatly increased consumption of the dried and evaporated product, and the transporting of thousands of tons of water has been saved. Scarcely a section of the state but now shows the installation of evaporators or dehydrators, and fruits and vegetables of nearly every kind are now going forward sans water.

"PRACTICALLY PEELED" POPULAR

The California Peach Growers Inc. has found its "Practically Peeled" so popular that a large proportion of its output will this year be so processed. In a few years the management believes its dried peaches will practically all go out in this form. Since securing patents on the "Practically Peeled" process the association has proceeded to have perfected the machinery for the work and has just received patents on machinery.

LA HABRA FUMIGATING

M. J. Pickering informs us that the La Habra Citrus Association now has three outfits ready for a clean-up of the orchards of members of the association. Liquid gas will be used exclusively. The fumigation will be under the general direction of Mr. La Follette of the Leffingwell Ranch.

CONGRESS APPROPRIATES $59,000 FOR GRAPES AND NUTS

The federal congress has appropriated $59,000 to be devoted to study of grape and nut problems. $39,000 goes to solving problems of nut culture; $20,000 to study of the utilization of wine grapes in California after prohibition becomes effective.

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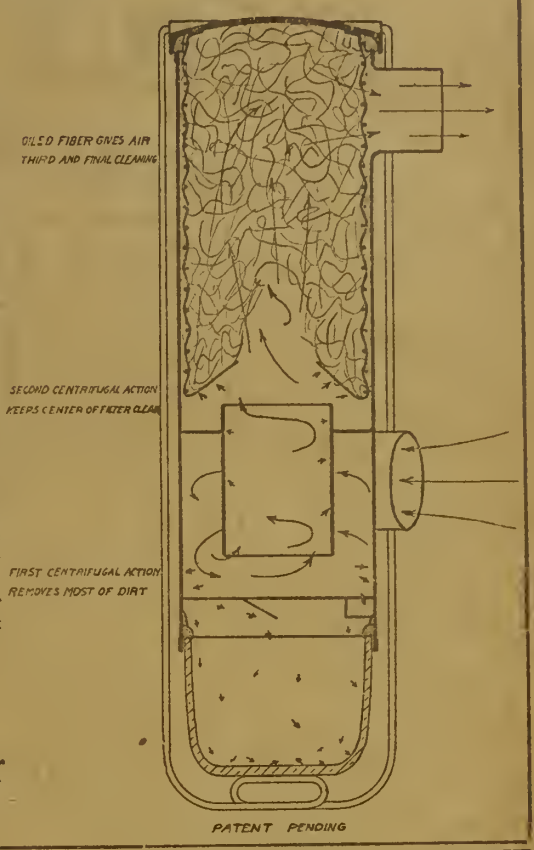
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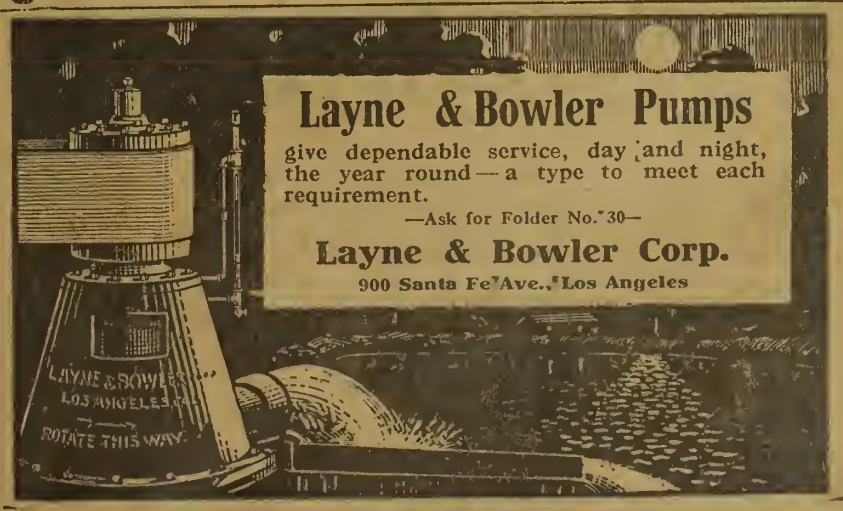

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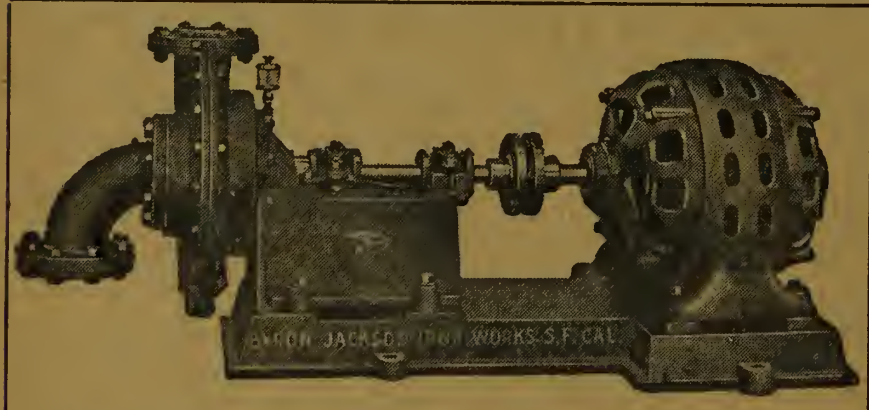

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Irrigation and the Alkali Problem

By W. P. Kelley

Prof. Kelley's article began in last issue of the Cultivator. In a word it consisted of a warning as to the waters used in irrigation. Especially is there danger in overirrigation. Dr. Kelley continues:

Unfortunately the movement of alkali from higher to lower levels through the leaching action of irrigation water is not the only means by which soils actually become injuriously charged with alkali. It is possible for soils which previous to being brought under irrigation were free from alkali to become heavily charged with alkali without the intervention of any seepage whatever. Such, in fact, is actually taking place on a sufficiently large scale in the citrus area today to warrant thoughtful consideration. Reference is made to the use of irrigation water that itself contains alkali.

In the later part of the 19th century considerable attention was given to the quality of irrigation supplies. More recently, however, the main consideration seems to have been given to the quality of water available. Irrigation supplies and systems and localities as well have come to be judged quite largely on the basis of the amount of irrigation water available, and general interest has come to be centered largely on the quantity of the water available, with too little consideration as to its quality. The result has been that in a number of instances, even in the citrus belt, growers have come to apply water of extremely poor quality. In a few extreme cases my attention has been drawn to the fact that growers, while admitting that their irrigation supply is not palatable even to live stock, apply it to the land freely and with apparently no thought concerning its permanent effects. Fortunately the area of citrus land that is being irrigated by such extremely poor water is comparatively small. However, there are considerable areas now being irrigated with water of sufficiently poor quality which with long continued use will almost certainly result in a dangerous accumulation of alkali.

It may possibly be helpful in forming a clearer understanding of this matter, and enable the grower more clearly to see the relationship between irrigation water and the accumulation of alkali, to present the problem in a more concrete way.

In the analysis of irrigation water the results are commonly expressed in parts per million or in grains per gallon. You may be interested to know that grains per gallon may readily be converted into parts per million by multiplying by 17.1. In our work we express the results in parts per million. Whichever method may be used is immaterial.

Now suppose the analysis shows 100 parts per million of a given constituent. One acre-foot of such water will contain 270 pounds of that constituent. As a general rule it is probable that the average citrus grower actually applies to groves eight to ten years or more of age approximately two acre-feet of water per acre per annum as a total of all the irrigations for a single season. At this rate, water containing 100 parts per million, of common salt for example, will supply to the soil 540 pounds per acre per annum.

At first thought this does not seem to be worth considering, but 540 pounds per acre per annum, if repeated annually for 20 years, will equal 10,800 pounds. In this connection it should be understood that no soil has the power to absorb an indefinite amount of alkali; if it be not absorbed either by the crop or the soil or drained away an accumulation will ultimately result, it being merely a matter of time, which in this case will be determined by the amount of alkali in the water and the nature of the soil. Instead of the water containing 100 parts per million, suppose it is found to contain 200 parts per million, then the amount that will be added in one season will be 1080 pounds or about ten pounds per tree. If it contains 400 parts per million the amount will be 2160 pounds, and so on.

If the soil to which the water is applied be located where the rainfall is light, or be of a heavy character, or if it be underlaid with hardpan or even a compacted layer through which water penetrates with difficulty, or perhaps not at all, it is certain that little or none of the soluble materials added in the water will be removed by leaching. Between irrigations the water that has been applied and which did not pass away as run-off evaporates or is absorbed by the trees. When water evaporates the materials which it held in solution are left behind in the soil. They do not pass off with the water and citrus trees do not have the power to absorb any notable amount of the common alkali constituents.

Consequently under such conditions the application of water that contains alkali will be followed by the inevitable tendency for the alkali to accumulate in the soil. In the course of time it is highly probable that an injurious concentration will result.

While I wish to confine this paper mainly to a discussion of the means by which alkali accumulates in soil, having in mind the possibility of an excessive concentration finally resulting, it should be stated that the application of water containing only small amounts of alkali may produce very important and injurious physical effects in soils.

It is evident from the foregoing that the composition of the water is a matter of primary importance in irrigation, especially where the rainfall is light and drainage inadequate. Any grower or district whose irrigation supply is of high purity is indeed fortunate, and I am pleased to state that the irrigation supply is of high quality in a very large percentage of the citrus area. Unfortunately waters of poor quality occur in quite a number of localities, and these are widely scattered over the citrus area. They occur more commonly in some localities than in others, however.

In recent investigations on this subject we have found that with only a very few exceptions all of the large irrigation supplies in use on citrus are highly satisfactory and practically all of the really bad waters now in use are drawn from wells. While I do not propose to dwell on the matter at present the information already assembled abundantly establishes the fact that the water from every well, with the possible exception of those located near a large watershed, should be analyzed before being used. Had

this policy been pursued in the past and its teaching heeded, a number of cases of serious disaster might have been avoided.

There are a number of instances where the owner of a given piece of land either neglected to purchase water rights from already available supplies of high quality or transferred previously existing water rights after having developed a private well of his own. In a number of such cases the results have already proven disastrous. Several hundred acres have already been seriously injured by this very means, and I may state in passing that this applies both to citrus and walnuts and in some cases to soils of exceptionally fine quality. The small annual saving from the use of privately owned wells whose quality happened to be poor has been offset many times over by the later damage to the crop and in more or less permanently injuring the soil for many other crops.

I cannot too strongly urge the importance of using the purest water obtainable, even though it necessitate a heavier annual expense. Certainly it is not putting the matter too strongly to say that the quality of every new irrigation supply that is to be developed in the future should be thoroughly tested before it is actually applied. Our information on the injurious effects of impure water have become so completely convincing as to leave not one doubt concerning the wisdom of this course.

From the foregoing brief statements it would appear to be evident that there is a close connection between irrigation and the alkali problem, both from the standpoint of seepage and the quality of the water that is applied.

It should not be inferred from the above that a definite degree of injury can be positively forecasted from the use of a water of a given composition for a stated period. There are ameliorating influences in soils, the nature of which are under investigation but which are not as yet completely elucidated, which materially influence the effects that will be produced on crops. The important point to remember is that the use of water containing any notable amount of alkali is a matter which should engage the thoughtful attention of the irrigator and that the time is likely to come when injury will result from its use.

In this connection the question naturally arises, what constitutes a satisfactory irrigating water and how much alkali is it permissible for irrigation water to contain? These are pertinent questions for the reason that chemically pure water does not occur in Nature; all irrigation supplies contain at least small amounts of soluble materials. Unfortunately I am not able to give a definite answer to these questions. I can safely say that as a matter of public policy nothing but the purest water that can be economically obtained should ever be applied. In general it may be said that the effects that will follow and the length of time before injury be produced by a given supply of impure water depend on the nature of the soil and the amount of drainage that actually takes place from the soil.

An irrigation supply containing a given amount of alkali will produce injury to citrus on some soils in a shorter time than on others. Where no important amount of actual drainage takes place and the soil was practically free from alkali at the outset an injurious concentration of alkali will usually result sooner on light soil than on heavy soil. Injury is generally felt on shallow soil, if it be not underlaid with an open, porous stratum, in less time than on a deep soil or a well drained soil. The effects are shown more readily on soils containing little or no organic matter than on soils well supplied with organic matter. The presence of large amounts of gypsum appears to ameliorate the effects of alkali. Citrus groves that are well cared for, with the soil kept in good physical condition and liberally supplied with manure or other organic materials, likewise are more tolerant of alkali. Infestation of scale and other injurious insects increases the susceptibility to alkali injury. In fact, any unfavorable soil or climatic factor or tree condition is likely to be more serious where alkali is also to be contended with.

Since the above named conditions are extremely variable, sometimes even in a single grove, it is evident that no hard and fast rule can be laid down concerning the time which will be required to produce injury by an irrigation water containing a given amount of alkali. Ordinarily each case presents a problem in itself and must be judged on its own merits.

One of the important points that I wish to leave with you is this, that any soil which, either through seepage or the application of irrigation water containing alkali, is receiving greater amounts of alkali than are being removed by leaching or absorbtion is on the way toward becoming an alkali soil. Such a soil may never become heavily charged with alkali owing to the intervention of some circumstance which changes the relationship between the income and outgo of alkali, but unless the removal, at least periodically, equals the annual increment the time will come when an alkali problem is inevitable.

From the standpoint of irrigation water containing alkali, as well as from seepage, it is evident that drainage is an indispensable adjunct to permanent irrigated agriculture.

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The Farm Wood Lot

By Ernest Braunton

THERE is no farm on which a woodlot would prove a burden nor is there one on which it would not prove a blessing. Every farm at times is seriously in need of timber and it costs both time and money to run to a lumber yard and often a good pole or log would serve the purpose far better than sawn timbers.

To be sure, times have changed. Auto trucks have nearly removed the need for hastily improvised poles or tongues and reaches. Electric, gasoline and steam power have made horse-power sweeps unnecessary, but a load of loose hay needs a binding pole no matter what power propels the vehicle. Fence posts will always be in demand, for if steel or concrete posts become common it will be because they are cheaper than wooden ones, and better uses will be found for wood. While the woodlot is growing it will provide shade and shelter for live stock or even for the family, perhaps neighbors and friends. A good woodlot provides a fine picnic ground for all who come and in ever so many ways, even as a landscape feature, the woodlot is a blessing. It matters not what tree you use, whether eucalypt, locust, catalpa, cottonwood or what, it will still be both useful and beautiful.

Loss of Bulbs

Much has been written of the loss of bulbs through leaving them in the soil throughout the year. Bulbs have now been in the writer's garden for 14 years without being dried up or rotted. Some are dug up but once in five years and immediately replaced. A variety of kinds have been left in this way and the percentage of loss has been no greater than when dug up each year.

Home Trees

The average house, even though surrounded by flowers and lawn, does not provide a complete home. In the dim past all people have looked to wood and forest for shelter, and because it is natural we shall always seek the shade and shelter of trees. For this reason a home place looks bleak and barren if no trees are in evidence. They need not be placed on all sides of the house; it is usually best not to have any on the front. One or a few may be planted on the sides but the greater number should be at the rear, giving the appearance of the house having been built in the shelter of a wood or grove of trees. Such places always look homelike and inviting to the passerby. They are homes in fact to those who are fortunate enough to dwell therein.

The Best Vine

Someone asked me the best vine for pergola, arbor, or covered seat, where summers' shade and winter's sunshine was needed, and also the biggest possible show at blooming season. There is no vine for such a combination of needs that will equal the Chinese trumpet flower, Tecoma grandiflora. It is now in bloom in local sections and attracts more attention than any vine we grow. No wistaria or other wealth of blossoms arrests the eye of all compared with this orange-red trumpet flower. It is the largest in size of blossom of all the family and no other member produces more flowers. It is hardy over all the south half of California and doubtless will stand much cold. It is a rapid grower, not so much in length of stem but it makes a thick bush as it grows upward and not a string or strings of thin growth. It is not yet common.

Alkaline Hilltops

"A Reader" lives on top of a hill where there is a thin soil of black adobe underlaid with shale some of the strata of which are loose and covered both top and bottom with a white powder. Trees do not thrive even though holes have been blasted several feet deep. Nearly a hundred feet below, on one side, alkali shows on the sides of a ravine. Such conditions are not unusual. A half dozen complaints of like nature have come in from points in Los Angeles. The north side of Westlake Park is at the foot of a shale hill, hardly any soil on top, and no good blue-grass lawn may be grown in that part of the park even though under-drainage has thrice been resorted to. A little strongly-alkaline water constantly oozes into the lake from that side. The remedy would be to dynamite clear across the hilltop so the alkali could be washed down and out. Mere pockets but provide settling basins for it.

Native Shade

For a quick summer shade that costs little it is hard to beat our native clematis. It naturally grows in poor, dry soil and when given a fair garden chance grows faster than any vine in my garden. A root was dug up in a gravelly canyon three years ago and this vine now extends 40 feet, though each year it has been heavily pruned. It holds its leaves merely during the hottest weather and is several months bare.

The Water Question

It is not hard to choose garden shrubs and trees that will safely pass through each year, after the first, without other water than the winter's rains. But there is not one of them but makes better growth and appearance when well supplied with water. Therefore no garden can be made grandly attractive in the summer season except a copious supply of water is given. How much time and water are you willing to exchange for a good-looking garden?

Hardy Limes

In the writer's garden a Bears seedless lime was badly injured by frost last year, while a Eureka lemon, navel orange, and kumquat close by were not harmed. This lime is eight years old and has been frost-damaged each year. It was obtained from one of several firms who advertise this lime as hardy. The writer is not alone in this experience and has never seen a lime as hardy as the lemon. This opinion is written after many years observation and it is folly to advertise plants as hardy which each year are harmed when growing with oranges and lemons that remain undamaged.

Resting Rose Bushes

If rose bushes have been well watered up to the present it will prove profitable to let them go without water until September. Then may you prune them as you wish and irrigate them freely, for fall flowers. You may merely prune out small weakly wood and leave the heavier pruning

until spring. Or you may prune heavily and get a fine fall crop of roses. Last year I did not prune mine until September 25, two weeks late as a rule, yet the fall crop was the best I ever had. They were pruned very heavily, some of the wood was cut where it was a full inch in diameter. The bushes were a dozen years old. The first of September is a good time to prune, and awaken with plenty of water.

Modern Petunias

For the amount of money and time expended no plants have given me better results than a fine strain of petunias grown from seeds. The latter were sown in bare spots in beds of other plants and when three inches high were transplanted. They have grown to large size and are in flower all summer, with large blossoms of good colors, nicely flounced and fringed about the edges. But do not buy common petunia seeds. Get the best. They require no more care or space than the poorest.

Vegetable Seed Improvement

By S. S. Rogers

THE planting of good quality vegetable seed has always been considered one of the most essential influences affecting the value of the crop. During the past decade interest in the proper selection of seed has continually increased until at the present the thoughtful and successful grower considers this of first importance. Good seed true to type means larger yields of high quality crops, with a correspondingly larger net return per acre than when seed of poor quality is planted. It may therefore be readily understood that the initial cost of the seed is neglible as compared to the quality.

In speaking of the quality two conditions are meant, first germination, second the strain trueness to type or pedigree. There are two methods for seed improvement: Crossing, or hybridizing; and individual plant selection. The former method is more or less uncertain and requires considerable time, experience and effort, while the latter is much easier and may be successfully carried on by those who are careful and consistent. The question of hybridizing will not be considered at this time but a few of the more important points upon the subject of seed selection might be of interest.

The first and most important consideration is to have a definite object or ideal to select to. This may be higher yields, better quality, degree of earliness of maturity, uniformity of size, color, etc. In considering the above points, the demands of the market must be met as closely as possible. It is also essential that the selection be carried on by the same person and a written description of the ideal be made in detail in order that the work may be carried on systematically.

If the selection has for its object the continuation of a certain variety of vegetables such as Los Angeles lettuce, Stone tomato, etc., the characteristics of the variety, together with the improvement, should be carefully studied. In order to keep the strain from deteriorating continuous selections are necessary from year to year, for unless this is done the strain will break up and more or less inferior plants will be present.

It is always best to select to one principal quality, but oftentimes it is possible to improve other conditions at the same time. This, however, should not be done at the expense of the main object of the selection. As an example, in selecting tomatoes for earliness it will undoubtedly be found that a number of plants come into bearing at the same time, which gives an opportunity to choose from these the ones which bear the best quality product. This choice, however, should under the above conditions never be made at the expense of earliness.

In selecting such crops as tomatoes, melons, etc., the character and quality of the entire crop on the vine should be considered and not that of the individual tomato or melon. In selecting for earliness it is not necessary to save for seed the first individuals to mature but those vines which are chosen for their earliness should be marked before harvesting starts. In the selection of such crops as lettuce, cabbage, beets, etc., the individual plants should be considered.

To summarize the principles of seed selection: The grower should know before the selection is made what he wishes to attain, and in the choice the demands of the market should first be considered. One should endeavor to confine the selection to one principal object and a written description should be made. Continuous selections should be made each season, and where possible the work should be performed by the same person.

Australia's production of dried fruits for this season is estimated at: Currants, 5,500 tons; Sultanas, 6,500 tons; Lexias, 2,500 tons; total, 14,500 tons.

English buyers are reported in California looking after supplies of apricot pulp which may be shipped to England for jam making.

CALIFORNIA ALMOND GROWERS PROSPERING

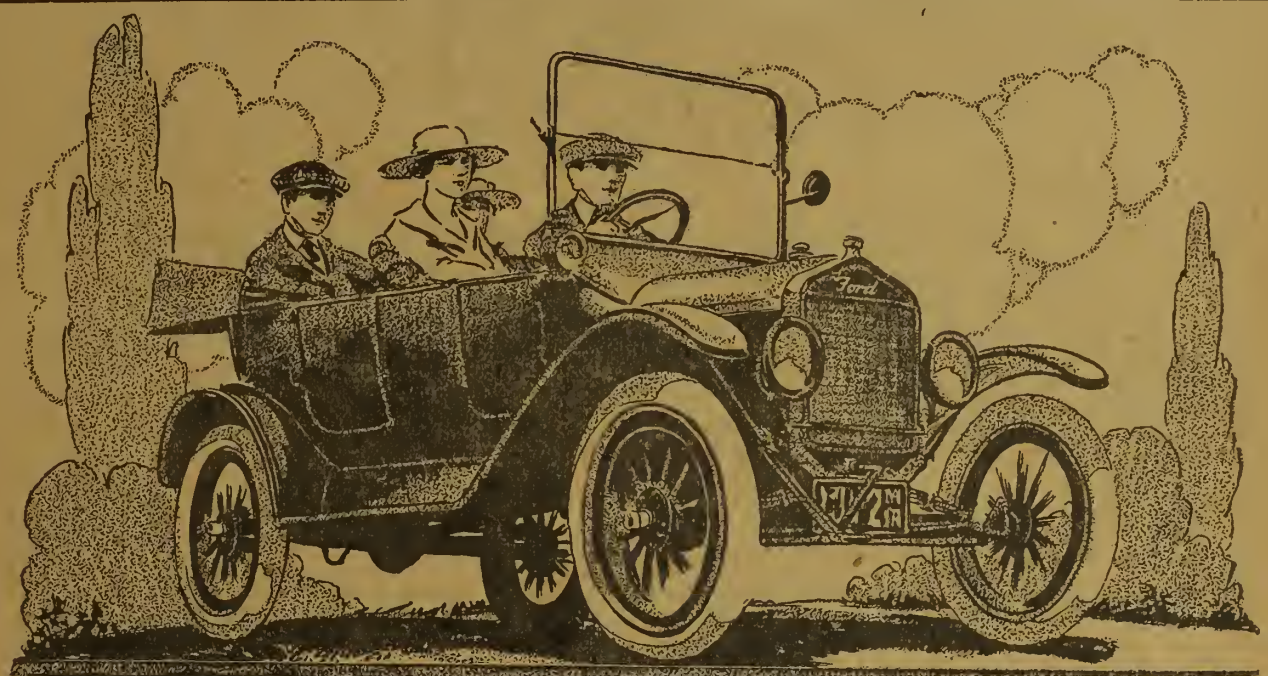
The plant of the California Almond Growers at Sacramento has been erected at a cost of $100,000. Improvements are now being made at a cost of $10,000. In addition the association has purchased land adjoining on which it proposes to erect a four story concrete building.

FRUIT PICKERS WAGES

Fruit growers of Morgan Hill, Santa Clara County, are paying 40 cents per hour for day labor, ten hours, and $6.00 per ton for picking prunes.

One of the first essentials to satisfactory marketing arrangements is standardized products. Cans, jars, and other containers should be uniform in pack, appearance, quality and condition. Every container which is fully up to the standard represented by the label or brand will then be an advertisement in itself and often a guaranty to further purchases.

Last year members of the Prune and Apricot Growers' Association received $37.50 per ton for apricot pits. The management reports prospects for even better price this season.



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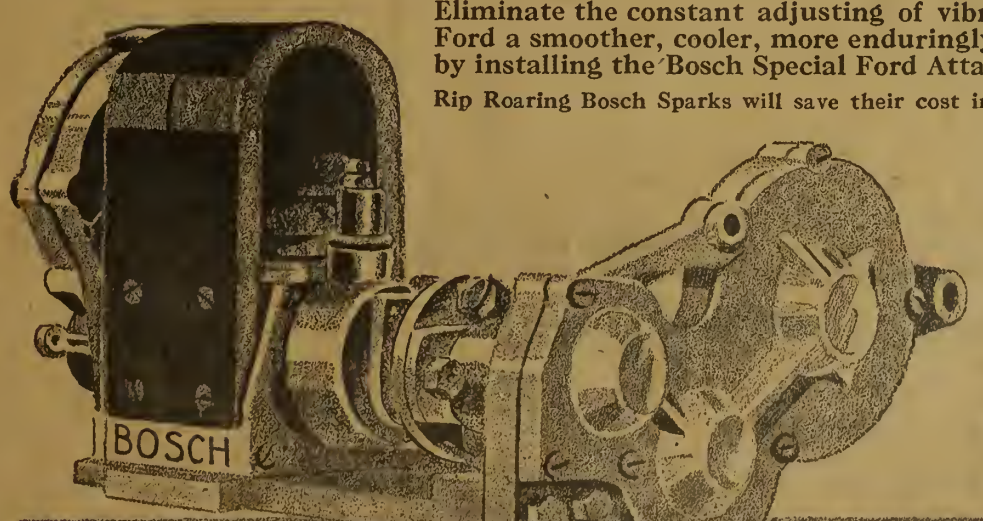

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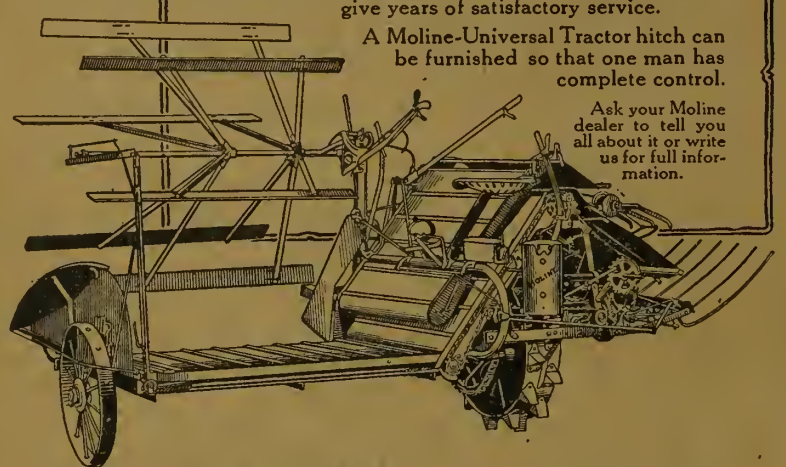

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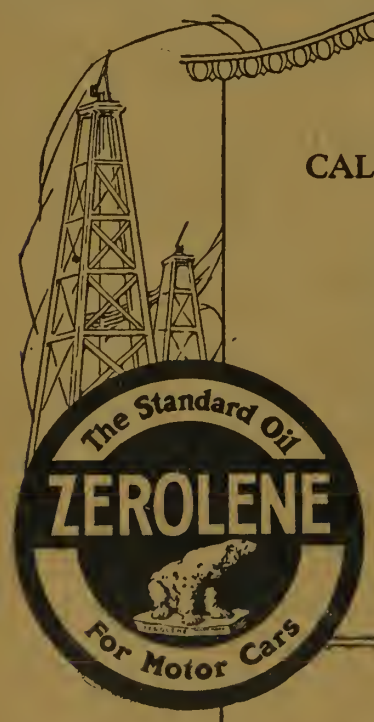

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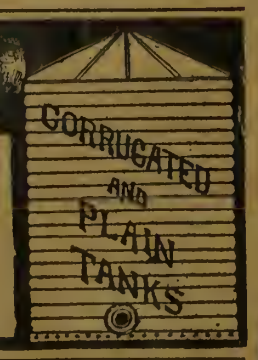

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Review of California Celery Season

By H. H. Warner

CELERY has been produced commercially in California for about 20 years. The early eyperimental plantings were made in the vicinity of San Francisco, but the first real commercial production was in Orange County, in Southern California in 1893. D. E. Smeltzer, who came from Kansas City after an unsuccessful attempt to grow celery in Florida, was the first one to see the possibilities of the industry in this state. Through his efforts the peat beds and river bottom lands of the Santa Ana River, between Santa Ana and Huntington Beach, were drained and the water carried away through flumes and ditches to the ocean some five miles away. This wonderfully fertile soil was well adapted to the production of celery and for a number of years this district was the only celery producing section in this state.

Two Big Growing Districts

In recent years the acreage grown in Orange County has gradually decreased, owing mainly to the increasing losses from celery blight which seems to be very difficult to control. Continuous heavy cropping on the soils in that district has also reduced the production per acre. Most of the celery now produced in Southern California is grown in the truck garden section around El Monte, where shortage of rainfall and presence of insect pests seem to be the limiting factors.

As the shipments from the southern part of the state have fallen off, the production in Contra Costa and Sacramento Counties, in what is known as the Sacramento River Delta section, has increased proportionately. For several years the shipments from Orange and Los Angeles Counties, once the most important producing area, have been scarcely one-third of the total output in the state, and the central district, some 400 miles farther north, has taken its place. The limiting factors in this district are occasional frosts and unseasonable rains, which cause heavy losses.

When the industry was in its experimental stage the mistake was made of planting in the spring for the production of summer celery. After a few years, it was found that the proper time to plant in California is during the months of July and August, which brings the crop to maturity during November, December, January, February and March. This is now the regular time to harvest, in both the central and southern districts. Beginning in the middle of fall, the shipping season is well under way on the first day of the winter months and continues, interrupted only by severe winds, serious freezes or exceptional market conditions, until all the crop is moved or early spring weather develops seed stock of objectionable length.

Eastern Demand Growing

The rapid growth of this industry in California has been due to the fact that the celery can be placed on the Eastern markets in a fresh, crisp condition during the winter months when there is little competition from other sections. California celery commands a good price for the Thanksgiving and Christmas trade when the only competition comes from Eastern storage celery. During February and March it still commands the top price, although it meets some competition in early celery from Florida. In the season 1918-1919, California shipped 480 cars out of a total for the United States of 4528 cars. California's only close competitors are New York with 1260 cars, and Florida with 978.

Eastern consumers are demanding more California celery every year and, if insect pests and diseases of the plants can be controlled in the field, there is every reason to believe that the industry will continue to expand The average yield in the field runs from 1000 to 1200 dozen bunches to the acre. The fields are usually cut over several times and a total yield of one carload, or about 172 crates to the acre, is not uncommon.

Marketing Method

The marketing methods of the two producing sections of this state are very distinct. The grower in the Sacramento River Delta section contracts his crop at planting time to one of several large distributors, who furnishes him with seed and makes advances on the crop through the growing season. In the southern district the grower usually sells right from the field at the time of harvest and seems better able to finance his growing operations. In a good season, such as that which has just closed, there is very keen competition for the crops between shippers at time of harvest.

Growers' Association

In 1901 the Celery Growers' Association of Orange County was formed, with about 75 per cent of the growers in the association selling through one organization. The following year a combination was formed which gave the association practically complete control in the celery output of California at that time. During the past few years some radical changes have been made in the method of marketing the crop, until now, instead of one association controlling the entire output in the southern district, there are many independent factors in the shipping business, bidding against each other for the output.

Last Two Seasons

The year 1917-1918 witnessed the greatest area on record in the state, with a record movement of 2756 cars shipped. That season, however, was an unsatisfactory one for the growers, as facilities for transportation of the immense crop were inadequate, the markets were discriminating and the large proportion of growers who held their crops in the bank for some time, found a surplus of unsalable stock on their hands at the close of the season. In many cases prices failed to meet the high cost of production.

The acreage planted for the season of 1918-1919 just closed, was approximately one-half that of the preceding season, with a total estimated by the bureau of crop estimates of 3000 acres for the entire state. This acreage was divided as follows: Los Angeles County, 754; Orange County, 125; making a total for the southern district of 879 acres; with a total in the central district of 2121 acres.

The season just closed has broken all records for prices, and both high grade and inferior stock has been in strong demand at all times, so that, in spite of the short acreage and the generally light yield, the gross returns to the growers have been practically as large as when they grew the record acreage in 1917-1918. Some grow

ers have received around 65 cents per dozen bunches average for the entire season, which on a conservative estimate of production of 150 crates to the acre, means a gross return of about $600.00 per acre. Even considering the increased cost of labor and material, this represents a handsome net return to the grower, for his efforts.

The yield is less than last year, because the insistent demand prevailing in Eastern markets has resulted in growers shipping their stock in many cases before it had reached full size and maturity. The yield was further reduced in Southern California by dry winter weather, while the January frosts affected the production somewhat in the central district. Total shipments from the state, up to April 1, for the season just closing, have totaled 1480 cars, or a little over one-half of the total movement last year. Of this amount, the central district shipped 1103 cars, and the southern district 377 cars, or about one-third of the total shipments from the state. In any consideration of the celery movement it should be remembered that the figures given here are for solid carloads and that a considerable percentage of this crop, as well as other California vegetables, goes forward in mixed cars.

The principal shipping points in the central district are Antioch, Walnut Grove, Sacramento and Stockton, fully 90 per cent of the movement originating at Antioch and Walnut Grove. In the southern district, the principal loading stations are El Monte, Los Angeles, Smeltzer, Compton and Newmark.

Approximately half the total movement of 1480 cars was originally destined to diversion points, such as Belen, New Mexico; and El Paso, Texas. Primary destinations show that California celery was shipped to about 50 cities in the first instance. No doubt, a record of diversions from El Paso and Belen would greatly increase this showing of distribution. One hundred and thirty-four cars were originally billed to Chicago, and 127 cars to Kansas City, some of which in both cases may have been diverted. It is interesting to note that Los Angeles received 150 carloads of celery; mostly from the central district, and it is safe to say that at least 75 per cent of these shipments represented cars which were unloaded here and reshipped in small lots, in mixed cars.

The season of 1918-1919 just closing was remarkable in the way in which the Eastern markets sustained a high price range on California celery throughout the season. In Chicago the jobbing price started at about $6.00 per crate in November, rapidly advancing in December to $7.00, $7.25, and reaching $8.50, $9.00 by January 1. The top on this market occurred about February 10, when California celery was jobbing, at $12.00 per crate. Following this period, prices declined somewhat to $9.50, $10.00 per crate as the season was brought to an end. Kansas City started at $7.00 in November and advanced slowly, but steadily, to $12.00 during the latter part of February.

Pack

Celery is packed in what is known as the standard California celery crate, measuring 22 by 24 inches, and 18, 20 or 22 inches in height, according to the length of the stock being packed. These crates are packed in the fields. They are commonly known as "fours," "fives," "fives and a half," etc., according to the number of dozen bunches packed in each crate. "Fives" and larger are generally known as "No. 1s," and "sixes" and "sevens" as "No. 2s," and those crates containing eight dozen bunches and more are sometimes called "No. 3s." The highest price is of course paid for the large size, known as "No. 1s," and the other sizes are discounted accordingly. There is no system of grading employed other than this rough classification by size.

California celery is generally sold on the basis of a certain price per dozen bunches for each of the several grades and the cost of the crates is charged in addition. In the following discussion, the price referred to in every case is for one dozen bunches of No. 1 grade (5s or larger), for carloads sold f. o. b. usual terms with the cost of crates charged extra.

Prices Received

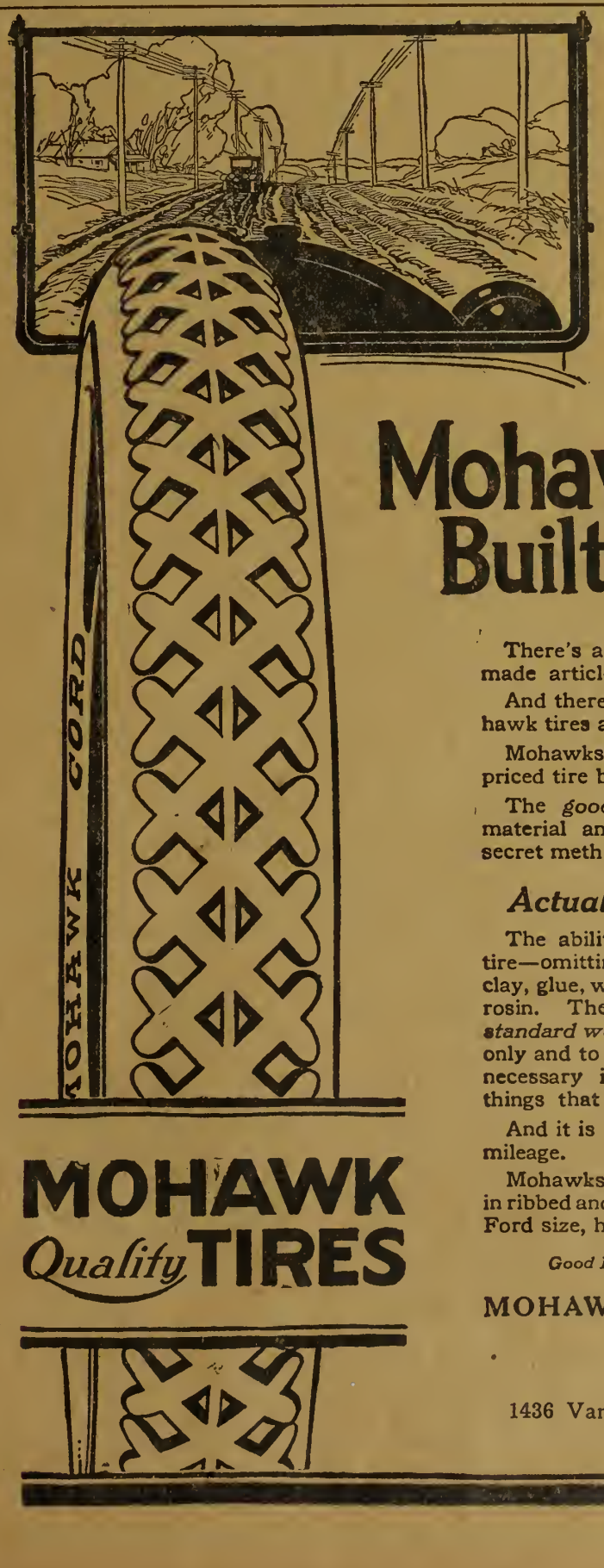
At the opening of the season, about the middle of November, best No. 1 celery from the central district was selling for 50 to 60 cents. This price advanced about the first of December and held steady through the heavy shipments of December at about 65 to 75 cents. The first shipments of southern stock from the El Monte district going forward the latter part of December were rather poorly balanced and of small size, but sold readily at a range of 50 to 65 cents for the largest sizes then available.

About the first of the year it became evident that the remaining supplies in California were somewhat lighter than previously estimated and the price advanced to a range of 85 to 95 cents on best central district stock and to about 75 to 80 cents on southern celery. A small movement of stock went forward at this time from the old Smeltzer district in Orange County, which was of larger average size and better quality than that from the El Monte district and sold for about 10 cents premium. About the 10th of January, the demand from Eastern markets became very insistent and prices on northern celery advanced to $1.00 to $1.10 with best southern stock bringing around 85 to 95 cents. Supplies, especially in the South, were at this time, insufficient to meet the demand and a wide variation in quality was evident, as some celery was cut before it had attained full size. A large share of the El Monte stock which went forward during this period was short and small, running in some cases nine and ten dozen to the crate and selling at a discount from the prevailing price on No. 1s. Toward the latter part of January the price eased off somewhat to 95 cents to $1.00 for central, and 85 to 90 cents for best southern stock.

The central district was practically cleaned up by the first of February, but shipments continued to go forward from the South for several weeks, the price advancing to as high as $1.00 for the best remaining stock at the close of the shipping season in the early part of March.

MONEY IN CABBAGES

Many farmers and gardeners when considering different crops with a view to profits in production may have overlooked the possibilities of profitable returns from growing cabbages. Good plants should attain a weight of five to ten pounds each, and mature in about 90 days from planting. About 5000 plants are usually set on an acre, and may follow a crop of peas, lettuce, or early potatoes.



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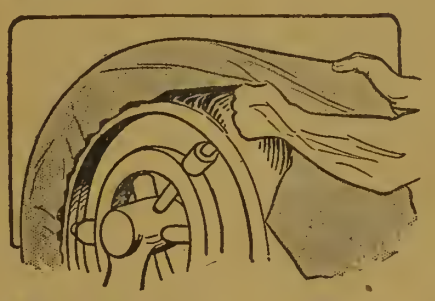

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Farm Name

How and where should I apply in order to have the exclusive right to the name of my orchard?—Subscriber, Yuba City.

Write secretary of state for blank for making application for farm, ranch or villa name. When this is received return to the secretary of state with fee of $1, which, providing name has not been registered by others, will give you exclusive right to that name for farm or home. This merely secures right to exclusive use as a ranch name. The trade-mark right is secured from the same office at Sacramento and requires payment of $5. The form of application is as follows:

To all whom it may concern: Be it known that ..... being the owner of a ..... located at ..... County of ..... State of California, hereby applies for registration as a name for said ..... the following words .....

Rust on Rose Leaves

Enclosed find leaves from two different rose bushes. What is the matter with them, and is there any cure? On the larger the leaves fall off; on the other they curl up and look withered.—Subscriber, Chatsworth.

Professor H. S. Fawcett of the University of California answers:

"The specimens of rose leaves from Chatsworth, which you enclosed, are affected as you suspect with both mildew and rust. You speak of the writer saying that the life of the plant seemed to be threatened. If so, I would suspect something more than the rust and mildew since these are not usually severe enough to threaten the life of a plant. According to my observations, the mildew is, as a rule, more severe than is rust on roses. There is a great deal of difference in the susceptibility of different varieties to both of these troubles and, of course, the most permanent way to correct the troubles is to get rid of the very susceptible ones and plant resistant ones. Considerable relief, however, can usually be obtained by spraying the roses with sulphide of potash (liver of sulphur), one ounce to three gallons of water."

Barbed Wire Injury to Horse

What is good treatment for a horse that has wound from barbed wire injury? The wound is on the left hind leg by the knee and seems difficult to cure.—Subscriber, Tulare.

"Diseases of the Horse," issued by the department of agriculture gives the following suggestions as to this type of wound:

"One essential in the treatment of lacerated wounds is to secure a free exit for the pus. If the orifice of the wound is too high, or if pus is found to be burrowing in the tissues beneath the opening, we must then make a center opening as low as possible. This will admit of the wound being thoroughly washed out, at first with warm water, and afterwards injected with some mild astringent and antiseptic wash, as chloride of zinc, one dram to a pint of water. A dependent opening must be maintained until the wound ceases to discharge. Repeated hot fomentations over the region of the lacerated wounds afford much relief and should be persisted in."

Feed for Young Turkeys

In raising turkeys where they have alfalfa to range in would it be all right to keep a hopper of commercially prepared dried milk before them all the time, for both young and old?—Subscriber, Lakeside.

I do not know of any turkey breeder who keeps feed of any sort before young turkeys all the time. It might do for the stock that is ready for fattening, but I should hesitate to try it with growing stock. If you have found some method of feeding that is fairly successful, better not experiment. This milk may be perfectly good feed for turkeys but I should not dare to recommend it without trying it. The young turkey's hold on life is too insecure. At the Rhode Island station, when the poults are about two weeks old, sour milk is fed night and morning, a quart being allowed for every 35 or 40 poults, and the amount is gradually increased until at four months a quart is allowed for 20 birds. The turkey, unlike the chicken, is inclined to stuff its crop if given free access to any kind of feed except that found on range, and no little turkey should ever have a stuffed crop.—J. A. K.

Feeding to Make Layers

I have some Barred Rock pullets that were hatched in April. If I keep a hopper of growing mash before them and give them this same mash wet mornings, green stuff at noon and wheat at night in straw, will they have enough to eat to make good layers?—Subscriber, Lakeside.

If they get wheat enough to send them to bed with full crops every night it will not be the fault of the ration if they are not good layers. As far as I can judge without knowing the formula of the mash, it is a very good ration. Buttermilk would improve it, but many chicks reach a profitable maturity without milk of any kind.—J. A. K.

Apricots Dying

Ten year old apricot trees are dying. Last year there was much sap exuding; this year set heavy crop but the fruit dried up before ripening and leaves wilted.—Subscriber, Ballard.

The state university has given considerable attention to investigating apricot troubles and has assigned the most serious cause of losses in apricot orchards to blight very similar to the ordinary peach blight. The apricot scab or shot-hole is another serious pest of the apricot. Two sprayings each season with Bordeaux are recommended in preventing this trouble. The subscriber does not refer to the characteristic marks of his troubles, and it is possible that sour sap may be cause of the death of these trees. The sap becomes stagnant in the tissues, full of sugars which induce fermentation and later gum is formed. There is practically no help for a tree which has shown this trouble.

Geese and Games Wanted

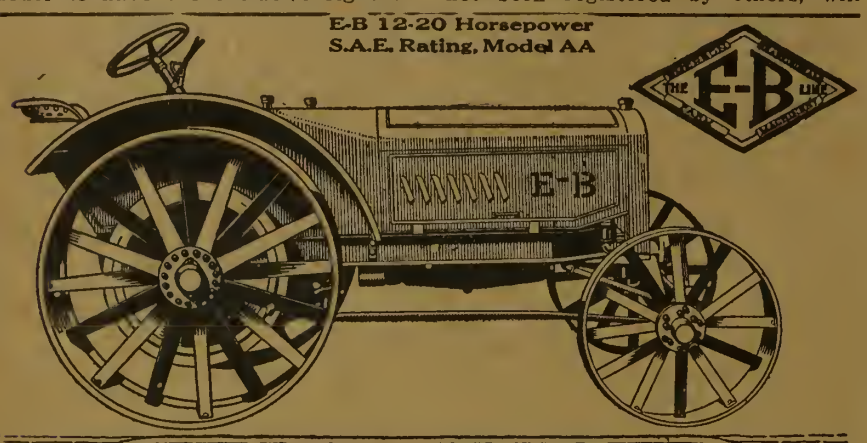
A subscriber is anxious to learn as to where he can purchase pure bred African geese and Cornish Indian games. Here seems to be opportunity for the up to date breeder.

U. S. GRAIN CORPORATION

The Food Administration Grain Corporation has been reorganized as the United States Grain Corporation, but is still under the directorship of Julius Barnes. Herbert Hoover has resigned as chairman of the board of directors and that position is now assumed by Mr. Barnes. The corporation's capital for handling the 1919 wheat crop is announced as $500,000,000. W. A. Starr is now in charge of the San Francisco office.

LABOR CAMP FOR SELMA

Definite plans are being made for the building at Selma in Fresno County of a model community camp for housing farm laborers. It is stated that Selma's packing houses give employment to 2,000 laborers and that with the demand for farm workers there is a labor housing need that cannot be met without a large camp



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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Fence Law

What is the law in San Diego County in respect to fencing against outside stock?—Subscriber, Ramona.

There have been so many of these different questions in reference to fencing, that the writer has taken the trouble to look up the Statute of 1850 and 1855, which still continues in existence as to certain counties. The Statute of 1850 is presumed by the Code of Commissioners to be so in existence as to Amador, Klamath, San Diego, Santa Barbara, Siskiyou and Trinity Counties; it provides as follows:

Every inclosure shall be deemed a lawful fence which is 4½ feet high if of stoue; and if made of rails 5½ feet high; if made upon an embankment of a ditch, 3 feet high from the bottom of the ditch, the fence shall be 2 feet high, said fence to be substantial and reasonably strong and made so close that stock cannot get their heads through it; and if made to turn small stock, sufficiently tight to keep such stock out. A hedge fence shall be considered a lawful fence if 5 feet high and sufficiently close to turn stock.

If any horses, mules, jacks, jennies, hogs, sheep, goats or any head of neat cattle shall break into any grounds inclosed by a lawful fence, the owner or manager of such animals shall be liable to the owner of said inclosed premises for all damages sustained by such trespass, and if the trespass is repeated by the neglect of the owner of such stock, he shall for the second offence be subject to double damages sustained by the owner of said premises.

If any owner or occupant of any grounds injures any animal or animals breaking into or entering upon the grounds which are not inclosed by a lawful fence, or should kill, maim, or mutilate, hurt or injure any animal doing such injury, he shall be liable to the owner for all damages, and also all costs that may accrue in a suit to obtain said damages. The act of 1855 which is probably still in force as to the counties of Sonoma, Napa, Eldorado, and Marin, expressly excepts from its operation the counties heretofore mentioned as to which the Act of 1850 still applies. This Act of 1855 except as to counties heretofore mentioned has probably been repealed, although the wording of the repeal statute is very vague and is also complicated by provisions of the political code continuing in effect as to the laws relative to fencing, but the Act of 1855 merely defines what is a lawful fence in these counties.

A, B, C Farm

A owns a farm. His brothers B and C are in business with him; there is no written agreement between them. Now if A Should die without making a will, what will happen to this farm? If A should leave the farm in the name of himself and his two brothers, would A be required to pay corporation taxes? What form of a will should A make so that in case of his death the farm will go to his two brothers? Does a will need the signature of a notary public or seal to be valid?—A. B. C.

Assuming that A is unmarried, has no children, and that his father and mother are both deceased, the two brothers would then succeed to the property in equal shares in case of his death. A deed from a man to himself is not usually done, but in case the land were deeded to the three brothers it would hold as each having an undivided one-third interest in the land, and in the case of the death of only one, it would be necessary to administer upon his undivided one-third interest, which would be divided among his legal heirs. A very simple method to handle the matter would be for A to make a will, devising the farm to B and C in equal shares. A will which is entirely written, signed and dated in the handwriting of the testator needs no other signature or witness, but as to any other will, it is necessary that two witnesses sign upon the request of the testator asking them to act as witnesses in the presence of the testator and in the presence of each other.

FRUIT GROWERS OF CALIFORNIA INCORPORATE

A new cooperative association has been organized to market fresh fruits, particularly apricots, peaches and cherries. It follows the plan of operation of the California Prune and Apricot Growers' and will work with it, but will handle no dried fruit. J. H. Bone, San Jose, is secretary manager. Directors are: R. P. Van Orden, Mountain View; M. J. Madison, Haywards; C. C. Spaulding, Sunnyvale; J. J. McDonald, Milpitas; F. M. Righter, Campbell; H. N. Shroeder, Mountain View; W. J. Lean, San Jose; W. E. Moore, Berryessa; E. K. Glendenning, Campbell; L. E. Walter, Mountainview.

VALLEY FRUIT GROWERS OPEN IN DINUBA

The Valley Fruit Growers' Association will open an office in Dinuba, probably the coming week, in the Haden & Boone Building. The association will supply labor for fruit growers, members first, others afterward.

Dairy Council Organizes

At a meeting held in San Francisco, July 8 and 9 the California Dairy Council was organized on a permanent basis.

The California Dairy Council is a branch of the National Dairy Council, an organization that was brought into existence for the purpose of stimulating production and consumption of milk and milk products. Primarily the idea back of the national organization and each of the state units is to conduct educational propaganda to acquaint the consuming public with the absolute necessity of dairy products in the daily diet; to assist existing agencies engaged in educational work along production lines; to bring about a better understanding between the producer, distributor and consumer; to spread truth and counteract untruth.

Sam H. Greene, who has devoted the past few months in organization work for the council, outlined the aims of the organization as stated above and pointed out the opportunities for the council to render real service. Greene stated that it was not proposed that the council represent any one element of the dairy industry, but that it would be representatives of all. He showed that the interests of all were in common and that no branch could be affected in any way without affecting the entire business. Following Greene's outline of the aims of the Council, the afternoon and evening sessions of the first day were occupied with addresses by the following men: Thomas F. Hunt, dean of the college of agriculture, University of California; Geo. F. Eberhard, San Francisco; Senator E. S. Rigdon; H. E. Van Norman, dean University farm school; Dr. Wm. C. Hassler, San Francisco; H. Brown, Los Angeles; F. J. Cummings, Ferndale; Coleman Cox, San Francisco.

F. J. Cummings was elected president, George E. Platt of Los Angeles, vice president, and Sam H. Greene of San Francisco, secretary manager. The following men constitute the board of directors:

Breeders: A. W. Morris, Woodland; H. Brown, Los Angeles; Wm. H. Saylor, San Francisco. Producers: Hon. F. J. Cummings, Ferndale; John Denman, Petaluma; Ed. H. Webster, El Centro. Milk Distributors: D. M. Dorman, Los Angeles; C. A. Fieweger, Oakland; E. A. Green, San Francisco. Butter Manufacturers: Geo. E. Platt, Los Angeles; W. B. Hopkins, Petaluma; C. E. Gray, San Francisco. Cheese Manufacturers: C. C. Lester, Gilroy. Ice Cream Manufacturers: F. S. Calkins, Los Angeles; F. H. Ames, San Francisco. Condensed Milk Manufacturers: H. W. Low, Hughson. Bankers: Henry D. Swengel, Arcata. Dairy Produce Dealers: J. T. Freitas, San Francisco. Dairy Machinery and Equipment Dealers: J. N. Gilman, San Francisco. Associate Members: H. E. Van Norman, Davis; R. H. Whitten, San Francisco.

The next meeting will probably be held in October, at which time it is expected that a definite plan of publicity will be launched.

Stockmen Take Notice!

A Valuable Demonstration Plot

Aggeler & Musser Seed Company have a demonstration plot in the 1500 block on West Sixteenth Street, Los Angeles. The following diagram shows what may now be seen growing there:

	CORN AND MILLET	GRASSES	SORGHUMS
PATH	MONSTROUS LIMA BEANS	PATH	PATH
	Red Cob Ensilage corn	Para	Dwarf Broom
	Eureka Ensilage Corn	Napier	Tall Broom
	Orange Co. Prolific Corn	Napier	Wonder Forage
	Orange Co. Prolific Corn	Napier	Wonder Forage
	Hickory King Corn	Napier	Wonder Forage
	Pima Corn	Napier	Wonder Forage
	Pearl Millet	Guinea	Wonder Forage
	Italian Millet	Guinea	Jap. Sugar Cane Sudan
	Hog Millet	Cocksfoot Wild Rye	Jap. Sugar Cane Kaoliangs
	Whip-poor-will Velvet Bean	Fog Paspalum Dilatatum	Amber Sorghum
	Red Millet	Billion Dollar Grass	Silver Tip Sorghum
	Japanese Millet	Rhodes	Ribbon Cane
	Biloxi Soy Beans	Natal Sesame	Honey Sorghum
	Golden Millet	Bromus Enermis	Shaliu
	Brown-top Millet	Merker	Feterita
	Chinese Millet	Red Top	White Milo
	Indian Millet	Perennial Rye	Egyptian Corn
	White Wonder Millet	Italian Rye	Schrock Kaffir Sorghum
	Large Headed Millet	Chewings Fescue	Dwarf Milo
	PATH	PATH	PATH

San Jose Canner Tomato

SEPTEMBER IS THE BEST TIME TO PLANT

SMILO GRASS

IT IS THE BEST PERENNIAL GRASS FOR THE RANGE.

PENNSYLVANIA BROAD LEAF TOBACCO

TEFF GRASS

DWARF SUNFLOWER

PATH

All persons interested in this demonstration are urgently invited to visit the place at once. It is particularly interesting to all who have silos. The merits of each sorghum and Indian corn are plainly indicated. Millets and grasses, too, may be seen in comparison.

It is a very valuable demonstration.

The Wonder Forage Plant excels all others fully two-fold, both in quantity and quality. Call at once and see it. Drive out West Sixteenth Street to the fifteen hundred block; or, take a red car marked "Hill & West 16th St." Be sure to take this chart with you; it is your guide.

YOUR INVESTMENT RETURNS 100% EVERY YEAR

Costs of modern farm equipment, as with other productive industries, must be figured with regard to the returns in profits. Some silos may have proven money losers; over 70,000 successful users of the

INDIANA SILO

back theirs as *money winners.*

To the extra meat and milk profits, and the saving of more expensive feeds, add the *extra savings* that the Indiana Silo makes for you in less spoiled silage. The total is your yearly profit on the Indiana.

The airtight, convenient Indiana doors (patented), the special Indiana tongue-and-grooving of the seasoned No. 1 fir staves, the proven Indiana method of holding the silo in shape and the walls tight and straight with adjustable iron hoops—these features keep silage in the Indiana free from rot, mould and freezing—make it more succulent and nourishing.

Without an Indiana you pay for one every year in less milk and meat profits. Why not have one next season? Now is the time to build and be ready.

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It Makes Them Fat

Hauser Packing Co. Los Angeles

Some Factors in Selection of Breeding Animals

By R. P. Royce.

FOR the man about to enter the business of producing pure bred live stock and who has carefully gone over the problem and decided that the business appeals to him and that his local conditions are such, or can be made such, as to make practical the venture, and who has thoroughly canvassed the situation and decided upon the breed on which he will stake his operations, the big problem remains of selecting the individual animals on which he will build his herd.

In a previous article the writer offered some general suggestions calculated to point out to the beginner a few practical steps to take in familiarizing himself with breed history, pedigrees, and breed type. The real test lies in successful application of such information when it comes to selecting and purchasing herd material, for the initial selections will in a large measure determine the success of the breeder.

Primarily one enters the breeding business for the same reason one enters any other business—for profit. Notwithstanding the fact that a few men take up live stock breeding as a pastime the great majority expect to make their operations pay. This being the case it is well for the beginner, and likewise many "old-timers," to keep constantly in mind the fact that utility is the essential in breeding. A breed or herd will stand or fall or progress to just the extent that its supporters recognize this fundamental fact and order their operations accordingly. The great arbiter of live stock merit is the practical farmer—and he is as cold blooded and merciless and decisive in his opinions as any judge in the universe. It is not difficult to call to mind certain cases where a number of our leading breeds have run afoul the farmer's judgment to their own misfortune. If pure bred live stock is justified, each breed must justify its claim for recognition by its efficient performance at the pail, the butcher's block, or in the collar, and the moment its supporters lose sight of this fact and go rainbow chasing in the realm of fancy points and pedigree fads to the exclusion of the real essentials it will be but a matter of time until they find themselves mired in the muck of public disapproval with nothing to show for their blind folly but a choice collection of pedigrees "that read well" and—say, "six white points" or some "solid reds."

We simply mention the above in passing, not because there is any real danger, but because beginners often fail to catch the true viewpoint in live stock breeding—they sometimes assume that the business is a sporting game, to be played by a few for their own pleasure, and that to be eligible to "sit in" all that is necessary is to own a few registered animals and thus be reckoned as "breeders." We would therefore repeat: Utility is the essential in breeding. If you are breeding beef cattle remember that it is beef that counts; if dairy cattle it is milk and butterfat; if hogs it is pork and lard; if sheep, wool or mutton or both. The true constructive breeder is the man who recognizes these facts and keeps them to the front in his effort to produce the greatest efficiency and who at the same time succeeds in producing such efficiency combined with that degree of conformation and refinement that stamps the work of a master. He is the man whose name on a pedigree means something.

The last statement brings up the question of the value of a pedigree in live stock improvement. A pedigree may mean much or little; a recorded pedigree—the same. A pedigree is nothing more or less than an accurate record of the sires and dams, together with their owners and breeders, responsible for the individual for which the pedigrees is issued. Obviously then the value of a particular pedigree is entirely dependent upon the value of the animals appearing therein and the reliability of the men appearing as owners or breeders. If a pedigree discloses the fact that back of the individual is a long line of carefully selected ancestors that have seen service in the herd of one or more recognized breeders it is rather probable that the animal under consideration can be regarded as valuable when compared to one, the pedigree of which is but a record of matings of little or unknown sires and dams owned in herds of men of slight prominence. It is for this reason that a careful study of breed history is urged in order that one can recognize such animals and breeders when considering a pedigree. One of the most dangerous and at the same time one of the most common mistakes made by beginners—and in some instances by breeders of more mature experience—is the tendency to become faddists in the matter of pedigrees. Pedigree fads are the most dangerous rocks in the course of breed improvement Not only have breeds been almost destroyed by having faddists at the helms, but many are the herds (not confined to any one breed) that have gone down because the owner set his sails to catch the force of a fleeting breeze of "popular bloodlines" without due regard to the essentials.

The only justification for any line of breeding becoming popular is the fact that that particular line has proven and continues to prove a source of efficient animals. And whenever the time arrives that such blood lines do not produce profitable and acceptable individuals there is absolutely no reason why that blood should continue in favor simply because it was one time of value. In weighing the value of a pedigree it is of the highest importance that first of all it belongs to a good individual, one that is representative in every way of the modern type. It is then important that the pedigree be founded on a strong base of good blood and merit, but it is vastly more important that the top crosses, the dames and sires and grand dams and grand sires, be meritorious than that the sires and dams of the more distant generations possess merit if the top crosses have little to recommend them. One swallow doesn't make a summer, neither does one famous sire or dam in the extreme upper or lower right hand corner of a pedigree insure merit in a living animal.

On the other hand it is equal folly for the beginner or the established breeder to ignore the pedigrees of the animals he puts into his herd. In every breed there are certain lines of breeding that are deservedly popular

because of the fact that they have been built up through generations of careful selection by master breeders who have succeeded in firmly establishing the more fundamental essentials. Animals with pedigrees that have been proven and with high individuality are the basis on which successful herds are founded, and for that reason they are sought after by discriminating breeders and their values are established accordingly. In founding a breeding herd every effort should be made to select such animals for the reason that offspring produced in a herd so founded at once command better values and are the object of an active demand. The beginner should therefore endeavor to familiarize himself with the better producing bloodlines and not be content with any of less value. A fair criterion to go by is to make selections from herds that have been before the public for a period of years or from newer herds that have been established along lines suggested above. The very fact that a herd has existed for a number of years is evidence that it must be producing a reliable sort of stock, else the lack of patronage accorded it by the buying public would have caused its dispersal in one way or another.

In selecting foundation animals the beginner will do well to keep on the lookout for dispersal sales. It is rare that an established breeder will consent to part with his best and proven producers, either bulls or females, for the reason that he knows such animals represent his real capital. Occasionally though, a breeder desiring to retain certain offspring is forced, through lack of room, to offer such animals for sale, and the beginner can count himself fortunate if he has the opportunity to buy such animals. Other opportunities are sometimes offered when a breeder, desiring to make a special attraction in his sale, decides to offer a few of his more valuable producers. The above is written with more particular regard to females for, as a matter of fact, proven sires are quite often forced on the market because it is no longer practical to retain them in the herd on account of keeping their daughters. But the beginner's real opportunity comes when an old and successful herd is thrown on the market at public sale. It is then that he has an unrestricted opportunity to purchase the cream of the herd, and such opportunities can not be overlooked.

Los Angeles County Cow Testing Association

The Cow Testing Association of the Los Angeles Farm Bureau is now planning for Dairymen's Day to be held sometime this fall. The plan is to make a great day in dairy and farm bureau circles. Meantime the cow testing association is increasing in usefulness and showing dairymen wherein lies greatest profit. Adviser Hodgson writes:

"Out of a total of some 1034 cows tested last month 240 are on the honor roll, which means producing 1000 pounds of milk, or 45 pounds of butter fat, during the month. So much interest has been manifested in our cow testing work that a new association is now in process of organization, and within two or three weeks we expect to have the two associations well under way. The Orange County farm bureau has joined with us to form this second association. We find the dairymen in this county very much interested in weeding out the boarders and improving their herds generally."

The table showing production of various herds indicates one herd, Number 10, which has 63 cows in the honor roll. Noteworthy is the fact that in this particular herd there is a total of 93. Another herd, Number 7, has a total of 196 cows of which 86 are on the honor roll. Of the 1034 cows in the association 240 are producing over the 1,000 pounds of milk, or 45 pounds of butter fat.

Commenting on the performance of the cows during June Cow Tester Knight says:

"It shows a wide variation in the average butter fat production per cow in the 15 herds under test, as well as considerable variation in the gross returns per cow. An equally great variation is to be seen in the net profit per cow above cost of feed, a variation which shows no great correlation with the average butterfat production. In other words, some of the higher producing herds are not making as much profit per animal as some of the lower producing herds where more careful feeding is the rule. There is a general correlation however, between cheap feeding cost and low profit per animal, indicating that good feeding pays. Of particular note, however, is the fact that the average of the five highest cows is very much above the general average for the herd, indicating that there is still considerable room for improvement in weeding out the poorer producers. A source of considerable gratification is the large proportion of honor roll individuals to the total number of cows tested, 240 to 1034. A considerably larger number of cows is signed up for testing, several of the larger herds in the association not being represented in the table on account of not being ready for testing this month. The highest individual tests of the month were a Jersey from the Burr Creamery with 94.8 pounds of butter fat and a Holstein from the County Farm with 85.7 pounds butter fat. The County Farm herd still continues its remarkably high performance.

EXCURSION COURSE IN ARIZONA

A field course in range livestock production is announced by the college of agriculture of the University of Arizona to begin on August 4 and continue for five weeks During the time students will be given a good knowledge of the actual conditions affecting livestock production on Arizona ranges.

The first week will be spent at the university, where a detailed survey will be given of the entire subject. The remaining four weeks will be spent in studying the methods of range livestock production as conducted by some of the best stockmen in Arizona. Federal foresters will assist.

In connection with this field course the second annual state tour of the "Livestock Squad," arranged by the agricultural extension service, will be held. Public meetings will be held at Patagonia, Oracle, Skull Valley, Williamson Valley, Flagstaff, Springerville, Fort Apache, Fort Grant, Wilcox and Benson.

The schedule is: August 4 to 9, University of Arizona, Tucson; August 11 to 16, Santa Cruz, Pima and Pinal Counties; August 18 to 23, Maricopa, Yavapai and Coconino; August 25 to 30, Coconino, Navajo and Apache; September 1 to 6, Gila, Graham and Cochise.

This course is offered to male university students, practical stockmen and students and instructors in other institutions.

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DE LAVAL

Now that "dog days" are with us, it is no time to bother with a balky cream separator.

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The DE LAVAL Cream Separator is dependable, and with ordinary care it will easily last a lifetime.

The DE LAVAL capacity rating is dependable. Each size exceeds its advertised capacity under ordinary, and even under unfavorable, conditions.

DE LAVAL Service is dependable. Fifty thousand agents the world over see to it that DE LAVAL Separators are properly set up, operated and taken care of. And, above all, the De Laval Company is dependable—the oldest and by far the largest cream separator manufacturers in the world.

More DE LAVALS in use than of all other makes combined

See the local De Laval Agent, or, if you don't know him, write to the nearest De Laval office as below

De Laval Dairy Supply Co.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

ALPHA GASOLINE ENGINES
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Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five gaited saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

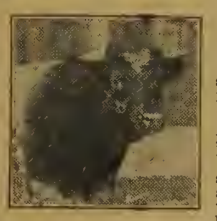
Anita M. Baldwin
Santa Anita Calif.
W. H. Taylor, Supt.

Rosedale Farms
Hampshire Sheep

We offer for this season:
25 Head Ram Lambs.
50 Head Yearling Ewes.
100 Head of Ewe Lambs.
1 3-year-old Butterfield Ram.
10 Head purebred Rambouillet Rams.

Apply to or address:

D. E. Kelliher Eugene, Cal.



At 400 county fairs in this year, 1919, the owners of 400 Shorthorn bulls will walk out of the show rings with a championship ribbon of royal purple fluttering in the breeze and 25 good, hard dollars, tucked away in their pockets — $10,000 in all. Better get your bull ready.

And when the show season of the year has closed a total reaching well up toward $300,000 will have been distributed among Shorthorn exhibitors as prize money.

It pays to grow good Shorthorns. Pure-breds pay the best.

American Shorthorn Breeders Association
13 Dexter Park Ave., Chicago, Ill.
Ask for literature.

Save Labor By Using Holsteins

Whatever the amount of milk or butterfat you wish to produce, is it not better policy to use large yield cows than to feed and shelter the necessarily greater number of small yield cows?

Use Holsteins and you save labor, feed, stable-room, equipment and risk. They are always healthy and ready for work.

Choose cows according to their capacity for converting coarse feed into milk. That is the function of a dairy cow and that is where the big Black and White Holstein excels.

If interested in
HOLSTEIN CATTLE
Send for our booklets—they contain much valuable information.

HOLSTEIN - FRIESIAN ASSOCIATION OF AMERICA, Box 120 Brattleboro, Vt.

The Leading Live Stock Auctioneers

Col. Ben A. Rhoades
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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

Announcement Extraordinary!

=65=

Grand Hampshires

At Public Sale

Wednesday, Aug. 6th

Santa Barbara, Calif.

Sixty-five bred sows and gilts selected from the $25,000 foundation herd, representing the choicest lines of breeding.

The Hampshire Hog is the Farmer's Hog

They are prolific, good mothers, excellent rustlers, quick maturing. Because of their high quality and ability to kill out high, *Hampshires* are eagerly sought after by packers. If you want to make real money in hogs—raise *Hampshires*.

An unusual opportunity for securing foundation breeding animals.

Sale will be held on the ranch located in *Montecito,* four miles east of Santa Barbara. Free transportation from Santa Barbara.

Sale starts at 1:00 P. M.

Francis T. Underhill, Proprietor — **O. U. R.** — Thomas T. Dinsmore, Manager

Ortego-Underhill-Rancho Registered Hampshires

For Catalog and full information address:

Thomas T. Dinsmore, R.R. 2, Santa Barbara

Ord L. Leachman, Auctioneer, 1004 5th St., Sacramento

Live Stock News Notes

SALE CALENDAR

Shorthorn Cattle

August 2, Butte City Ranch, Butte City.

October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

August 20. Fresno County Poland-China Breeders' Association, Fresno.

September 17, John M. Bernstein and W. L. Haag & Son, Hanford.

October 7, Bassett, Ross and Crawshaw, Hanford.

October 18, Trewhitt, Vaughan and Nehis, Hanford.

October 29, Tulare County Poland-China Breeders' Association. Tulare.

October 4. Marsh & McCracken, Modesto.

Berkshire Swine

August 2, Butte City Ranch, Butte City.

Hampshire Swine

August 6, Francis T. Underhill, Santa Barbara.

Shropshire Sheep

August 2, Butte City Ranch, Butte City.

Scribner Returns

F. H. Scribner who recently went to the Middle West to purchase dairy animals for Los Angeles, San Bernardino, Riverside and Orange County dairymen has returned. Likewise four cars of heifers have been received. Mr. Scribner's instructions from dairymen were in effect to secure young cows bred to freshen this fall, and with a limitation on price. This limitation prevented the general purchases anticipated. Two carloads of young Jerseys and one car of Holsteins were received by Riverside dairymen, and one carload of young Holsteins was purchased for San Bernardino dairymen. All the animals came across in fine condition.

Get Your Bull Ready

At 400 county fairs throughout the United States this year there will be offered for Shorthorn bulls championship prizes, $25 at each fair, a total of $10,000. Why don't you get your bull ready and try and land the championship at your county fair? This prize is offered as a special by the American Shorthorn Breeders' Association. This association has appropriated $100,000 for Shorthorn prizes for the current year at fairs and shows in all parts of the country. As most of this is based on the fairs and shows giving double the amount it will result in a total not far short of $300,000 to be offered as cash prizes for Shorthorns this year. Nothing like this has ever been made available for prizes for any breed before. It is in line with the broad policies which the Shorthorn association is working out.

First California Hampshire Sale

On August 6, Francis T. Underhill will hold the first public sale of Hampshire hogs to be made in this state. The sale will be held at his ranch in Montecito. The Underhill herd was established something over a year ago by the purchase of some of the highest priced Hampshires ever brought to California. Mr. Underhill, who has large holdings in Santa Barbara County, made a most painstaking investigation of the various breeds of swine and says that his conclusions led him to determine to handle this breed. The offering to be sold next month will consist of 65 head of bred sows and gilts that have been carefully selected from his high priced foundation herd. Walter Folk, a representative of the Hampshire Record Association, is now at the Underhill ranch preparing the offering for sale. Secretary E. C. Stone is expected to be present and an effort will be made to organize a strong state association for the purpose of pushing the breed in this territory.

Secures Imported Shorthorn Bull

Shorthorn interests will be interested to know that Edward Cebrian of San Francisco, who maintains one of the largest herds in the West on his ranch near Sacramento, has secured the great imported bull Caledonia from Anoka Farms, Waukosha, Wisconsin. Caledonia was imported by Carpenter and Ross of Mansfield, Ohio, and sold in their June 1917 sale to F. A. Gillespie and Sons of Oklahoma for $7000. When the Gillespie herd was dispersed last December Frank W. Harding of Anoka Farms and secretary of the American Shorthorn Breeders' Association purchased him. Caledonia, a roan, was calved May 16, 1916. He was bred by Wm. Anderson of Aberdeenshire, Scotland, and was sired by the great Duthie bull Proud Emblem and his dam is Rosewood 105th, by Newton Model. He is counted one of the most valuable imported bulls in service in America. In addition to Caledonia, Cebrian has purchased from a Canadian breeder the bull Gainford Matchless, a son of Gainford Marquis. Gainford Matchless was first as senior yearling at the last International. Bringing such bulls to California should mean much to the breed and it is expected that they will be given wide opportunity in the Cebrian herd

Hopland Shorthorns to Conaway Ranch

While at the Carruthers sale, C. Harold Hopkins, manager of the Conaway Ranch Company, Woodland, stated that he had closed a deal for the entire herd of Shorthorns maintained by A. W. Foster of San Francisco. This sale marks the passing of one of the best known California herds.

Buys 90 Ayrshires

Bailey McFarland of Steybrae Farms, San Mateo, arrived at Auburn July 13, with the largest shipment of Ayrshire cattle ever brought West. The shipment consisted of 90 head and is to be divided equally between McFarland and the Penobscot Farm Company of Cool, El Dorado County. The cattle were shipped from the East by express and required three cars. Detailed mention of the shipment will be made later.

Berglund Buys Johnson Durocs

In a recent letter from Frederick M. Johnson, Napa, he states that he has sold his entire herd of Duroc-Jerseys to Harvey M. Berglund of Dixon. In commenting on the sale he says: "Mr. Berglund's herd consisted almost entirely of hogs of our own raising and now with the addition of my complete herd he has one of the largest and best herds in the state. This sale does not mean that I am retiring from the business. To the contrary, I expect to visit Nebraska herds this fall and buy a carload of as good Durocs as I can find."

Anchorage Farm's New Herd Boar

In their new boar, Champion Value 10th, recently purchased from E. J. Barker, the well known Berkshire breeder and judge, Mrs. Hardy, manager of Archorage Farm, Orland, believes they have secured the right blood lines for mating with the daughters of their famous sire Star Leader. This new boar is a litter mate to the sire of that famous Berkshire sow champion Lady 4th, shown by Hamilton Farms, Gladstone, New Jersey, in 1916, and grand champion at seven of the big Eastern fairs, the National Swine Show and International Live Stock Exposition, Chicago. Star Value, one of the greatest boars the breed produced, sold at public sale for $4000 and was largely responsible for the great success of Mr. Barker as a breeder. The mingling of this blood with that of Star Leader should leave a lasting impression on the Berkshire breed in this state. Anchorage Farm has recently sold to Harvey P. Goodman, Walnut Creek, a bred sow and a young boar; to C. A. White, Lincoln, a boar ready for service; to Mrs. E Tremourieux, Fair Oaks, a boar; to Rodney Savage, Halsey, Oregon, a boar and a son of Star Leader to J. H. Hay, Sacramento.

A Whiz-Bang Boar

The Poland-China breeder, J. H. Cook of Paradiso, has sold his ranch and expects to locate in the vicinity of Sacramento. However, until the new location is secured, he will maintain his herd at its present location where he is busy preparing his show herd for the fall shows. Mr Cook

expects to show in all classes for sows, senior and junior boar pigs, and in both futurities. He is paying particular attention to his young sire Whiz-Bang, named by a soldier just returned from France who has considerable experience with the whiz-bang shell. This boar is by Forrest View Bob by Caldwell's Big Bob, and so well is he thought of by Mr Cook that he has eight sows bred to him for early fall farrow. The spring pigs from which he expects to select a part of his futurity candidates are in a thrifty condition and are by such boars as King's Big Bone Leader, Cook's Hancherdale Jones and Giant Bob.

News From Key Duroc Herd

H. P. Slocum and Son of Willows have abandoned the idea of holding a public sale this year due to the depletion of their herd by the heavy demand for bred sows and gilts. Their boar, Sensation Wonder 1st, will be included in their show herd this season and is a litter mate to Mammoth Sensation by Top Sensation owned by Dan Kane, Wisner, Nebraska, and for which Kane refused $2500. Mammoth Sensation was first as junior yearling at the Nebraska state fair last year and is the sire of Mammoth Sensation 2nd recently purchased by W. R. Gatton for the Diamond Bar Ranch at the published price of $3000. Owing to their inability to secure help on the ranch they are undecided as to just what shows they will make but present plans include the state fair at Sacramento, the Oregon state fair and the California International Live Stock Show in San Francisco. Recent sales are three bred gilts and the second prize boar at the Oregon state fair in 1918 to J. W. Atterbury, Woodland; two bred gilts to Durham Colony and one to Frank J. Tetreau, Red Bluff.

Keep on Jerseys

In the recent record breaking sale of Jerseys held by Ed Carey, Carlton, Oregon, Dr. W. H. Hand of Orland, added to his present herd of Jerseys the cow St. Mawes Susy Olga with a record of 698.51 pounds of butter fat. This cow is one of five sisters all of which have made fine records. Dr. Hand states that the five owners will endeavor the coming year to place these five cows in the gold medal class. A four months old son of this cow sold in the same sale for $1550. He also secured in the same sale the heifer St. Mawes Rosalind, a daughter of Poppy's St. Mawes and bred to Rosaires Olga Lad. The doctor has arranged with an experienced herdsman to handle his herd the coming year and expects to make some high records. He has recently sold two well bred young cows of show quality to Ross Flintzer, Anderson, and two young heifers to Fred C Steiner, Haywards. The Hand herd will be seen at the fall shows.

Shows Value of Pure Bred Hogs

The breeding herd of pure breds on the Mills Berkshire Farm, Hamilton City, has recently been worked over and the least desirable weeded out and the herd reduced to 130 top sows and 30 gilts. All animals not coming up to the standard required for the pure bred herd were placed in the grade herd for the production of pork James Mills, Jr., manager of the ranch, states he had a very striking example of the value of pure breds for pork production. In a recent shipment of two cars to the market one car was made up entirely of grades and the dressing per cent was 73.4. The second car contained 15 pure bred Berkshire barrows and according to a letter received from the packer these 15 Berkshire barrows increased the dressing per cent of the second car to 78.8. The two cars were practically of the same age and weight and had been fed in the same lot. Mr. Mills states that they now have on the ranch 1550 head of hogs of all ages and that just as rapidly as possible all grades will be discarded and replaced by pure breds. R. J. Ramsey, recently a student at the University Farm, has been placed in charge of the swine department, and from the foundation already laid expects to be able to develop one of the largest herds of pure bred Berkshires in America. The herd boars in use at present are Ames Rival 70th, the grand champion at the 1918 state fair; Winona Compton Champion 8th by Laurel Champion, the sire of more first prize winners than any other living Berkshire boar; Improver 2nd by Improver B and Penrith Lustre 1st by Penrith Champion, a boar that won several grand championships for his breeder Chas. Talmadge.

Yates Will Not Show Polands

Owing to the scarcity of labor which has prevented him from giving his show herd the attention necessary to properly fit it, R. J. Yates breeder of Poland-Chinas, Orland, has decided not to show this fall. It had been his intention to have a complete herd at the leading fall shows and he regrets that he will be unable to do so. He states, however that he may bring his junior sire and some young animals to the state fair just to let the people know he is still in the game.

LOS ANGELES LIVE STOCK SHOW

While Los Angeles has definitely decided not to hold a general fair it has been decided to hold a live stock show at State Exposition Park, Los Angeles, October 18-26. The show is to be financed by live stock men and business men of Southern California and with sufficient liberality to guarantee a thoroughly representative Western live stock show. Chas. R. Thomas has been chosen as secretary and manager. The directors are: E. W. Murphy, Fred H. Bixby, Harry Chandler, Frank Wiggins, Irving Hellman, Harold Braly, Walter P. Story, Clinton E. Miller, H. A. Jastro, L. M. Cole, F. E. Lewis, 2d, Chas. H. Hill, H. B. Woodill, Geo. M. Brown, Walter M. Ross, Frank Simpson, W. I. Hollingsworth. The officers are: E. W. Murphy, president; Clinton E. Miller, first vice president; Walter P. Story, second vice president; C. R. Thomas, secretary and manager; Irving Hellman, treasurer. Executive committee: Fred H. Bixby, Frank Wiggins, H. A. Jastro, Chas. H. Hill, Harold Braly.

The premiums so far offered aggregate $33,000. It is thought that many additional offerings will be made within the next few weeks, this largely from directors of breed or record associations. Mr. Thomas has opened offices at 128 South Broadway, Los Angeles, in the building of the Los Angeles Chamber of Commerce.

YOU CAN'T CUT OUT A BOG SPAVIN OR THOROUGHPIN but you can clean them off promptly with

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF

and you work the horse same time. **Does not blister** or remove the hair. $2.50 per bottle, delivered. Will tell you more if you write. **Book 4 R free.** ABSORBINE, JR., the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Wens, Cysts Allays pain quickly. Price $1.25 a bottle at druggists or delivered. Made in the U. S. A. by

W. F. YOUNG, Inc., 108 Temple St., Springfield, Mass.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
El Monte, Cal.

Brighton Farm Herds
Registered Shorthorns
and
Berkshires---Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

For Clean Cut Silage
ACME
Feed Cutter and Silo Filler

BEFORE you purchase a silo filler be sure to get our cutter catalog. Study it. Know why this Steel Frame Cylinder Cutter excels in the following essential requirements of a reliable feed cutter:

1. Quality Cutting
2. Convenience
3. Durability
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The Acme Combined Silo Filler, Hay Chopper and Alfalfa Meal Machine

DE LAVAL DAIRY SUPPLY CO.
61 Beale St., San Francisco

The Hampshire Hog

This hog has become America's most popular hog through the quality of the Hampshire alone.

The 1918 International Livestock Show was his last great record, winning grand championship over all breeds, and selling for $2.25 per hundred above his nearest competitor.

Public Sale of Hampshire Bred Sows

Underhill Ranch, Santa Barbara, California, August 6th.

Free information, free literature, and public sale catalogue by addressing

WALTER FOLK, Western Representative,
Hampshire Record Association,
SANTA BARBARA Route No. 2 CALIFORNIA

Raising the Standard of California Bacon

MONTELENA HERD
Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

A. L. TUBBS CO.
Calistoga - California

THE KEEP ON

herd of registered Jerseys offers a two year old bull by a grandson of Champion Flying Fox. One or two yearlings can be spared. Don't let this opportunity pass—every one from R. M. dams. Complete description on request.

Dr. H. W. Hand Orland, Calif.

Some of the finest
GUERNSEYS
In the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

CALVES

The ONLY Calf Meal using pure dry milk solids as a base: feed
Red Horn Calf Meal
Wean calves from milk in four weeks. Send for free literature.
GLOBE MILLS, LOS ANGELES

It's a Source of Satisfaction to Know Where to Find the Right Kind of Hogs When You Want to Buy

King Jones Over

A son of the great King Jones. Dam by Long King out of a Big Bob sow. He possesses all the qualities of the modern Poland-China, weighs 600 pounds at 14 months, stretchy, deep, well hammed and right up on his toes.
He leads the best herd of strictly big type sows in California.
Some extra good fall boars for sale now. Cholera immune.

McCarty & Starkweather
P.O. Box 2250, San Francisco
Ranch, Paradise Road, Modesto

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

WHIZ---BANG

A real big type Poland-China boar by Forrest View Bob by Caldwell's Big Bob. Bred big. Is big. Two litter mates now for sale at a reasonable price. His pigs a little later. Write for price and description.

J. H. Cook Paradise, Calif.

Secure Profitable Berkshires

We say profitable Berkshires because we have thoroughly demonstrated on our farm that our Berkshires are profitable. We have assisted many farmers in starting a herd and they are making money. AMES RIVAL 70TH, the Grand champion of 1918 and five other boars equally as well bred do service in our breeding herd.
JUST NOW we are fortunately situated and can offer you young animals or bred sows and gilts. The price we are asking will afford you a profitable investment. Can furnish one animal or a foundation herd. Write us and we will send you full particulars.

MILLS BERKSHIRE FARM
Hamilton City, Calif.

ANCHORAGE FARM BERKSHIRES ARE PROFITABLE

Future Champions Can Be Secured NOW

by placing your order for a young Berkshire boar from the famous Anchorage Farm herd. Star Leader and several of his sons have been mated with our large type Berkshire sows. Star Leader is famous wherever good Berkshires are known.
One of these young boars will not only add size and vigor but will add the quick maturing qualities demanded by pork producers.
Write immediately for full particulars and breeding and secure your future herd boar. Priced within reason.

Anchorage Farm Orland, Calif.

Lark Meadow Ranch

Berkshires are bred on this ranch that spell profit for the purchaser. Big bone, strong backs and right type.

Geo. A. Stingle El Monte, Calif.

Look to the Future

Many good sons of King's Big Bone Leader have gone to head good herds. If you want big type Poland-Chinas come where they are bred. Wakeen Herd of Champions.

Les McCracken Ripon, Calif.
Bred Sow Sale in October

All Good---We Sell

No animal leaves our ranch for breeding purposes unless it is of the correct Duroc-Jersey type and breeding.
That's one reason, and a mighty good reason, for our large business.
Write me just what you want and I will send you full description and price them reasonable.

Allen Thompson Tulare, Calif.

Greenwood DurocS

It is possible to secure as good but none better.—We not only breed them right but grow them properly. It will be well worth while to write Greenwood Farm for the kind of Duroc-Jerseys you want.

H. C. Witherow, Mgr. Live Oaks, Sutter Co., Calif.

Carruthers Shorthorns Break Records

By R. P. Royce

Pacific Coast, and Western, Shorthorn values were materially advanced last week at Sacramento, when W. M. Carruthers of Live Oak, sold 39 head for $31,985, an average of $820. The sale not only established a new record for Western Shorthorn sales, but established a record for all breeds of beef cattle heretofore sold on the Pacific Coast or in the Western states. In addition to the above, the selling of the top female, Countess Lavender, to the Conaway Ranch for $2050 established a new record for females of the beef breeds sold in any California or Western sale.

The sale had attracted a great deal of attention and as soon as the quality of the offering became generally known, it was a foregone conclusion that new values were certain to be established. Carruthers, who has long been identified with Shorthorn interests on the Pacific Coast realized that there was a genuine demand for Shorthorns combining the better sort of bloodlines and high individual excellence, and having the courage of his convictions he assembled an offering that at once lifted the sale from the ordinary. The large and representative crowd of breeders and others interested in cattle improvement was a splendid tribute to the enterprise displayed by the seller, and the prices they were willing to set serve to indicate the advancing and solid progress the breed is making in this state and should serve to encourage a wider expansion of activity on the part of other California Shorthorn breeders.

The sale which was held at the state fair grounds was opened by the auctioneer, Col. Fred Reppert of Indiana, assisted in the ring by Scotty Milne of Missouri. Professor Gordon H. True of the University of California made a few remarks touching the general live stock situation. He was followed by W. A. Cochel, Western representative of the American Shorthorn Breeders' Association, who told of the opportunities open to Shorthorn breeders and discussed the basis for values now obtaining in all classes of live stock.

The sale started with the selling of the great three year old cow Broadhooks Sultana 2d to Edward Cebrian of Sacramento at the very conservative price of $1500. Throughout the sale, which was conducted in perhaps shorter time than any previous California sale of like caliber, there were a number of rare bargains obtained, but on the whole prices were highly satisfactory.

One of the disappointments of the sale was the lack of appreciation accorded the white bull, Hallwood Villager. It had been hoped that breeders of this state would regard his selling as an opportunity to strengthen their herds, but at $2700 he became the property of the noted breeder, J. W. McDermott of Missouri. California has too few such bulls that she can afford to lose their services. He was the only bull sold.

The 38 females sold were quite the most attractive lot offered in any Western sale, and the ease with which they were absorbed was a keen source of satisfaction to all.

The top price paid for a female was, as noted, $2050 paid by C. Harold Hopkins, manager of the Conaway Ranch, Woodland. This firm selected four of the choicer females. Lady Ruberta, the white daughter of Ruberta's Goods was purchased by Reppert for L. E. Morse and Son, Caldwell, Idaho, for $1800. Mayfield Victoria 2d, a red two year old daughter of Count Glory was one of the top buys, going to Wm. Bond of Newark at $1850. Senator B. F. Rush secured the richly bred Ravenswood Lady 3d, at $1000. H. M. Elberg made a number of critical selections, securing among other the good cow Red Queen 4th, at $800. Ormondale Company paid $1300 for Avondale's Gypsy. Paul R. Sims, Gait, paid $1125 for Overlooks Bloom. George E. Diersen was the heaviest individual buyer, securing ten head, among which were a number of exceptional bargains.

The sale was under the management of C. L. Hughes of the California Breeders' Sales and Pedigree Company, and adds another record sale to the long list established by that organization.

Mayfield Victoria 2nd

A richly bred two year old daughter of Count Glory, purchased by Wm. Bond of Newark for $1850.

The detailed report follows:

Bulls

Hallwood Villager, Oct. 1915; J. W. McDermott, Kahoka, Mo., $2700.

Females

2. Broadhook's Sultana, June 1916; Edward Cebrian, Sacramento, $1500.
3. Lady Ruberta, Sept. 1916; L. E. Morse and Son, Caldwell, Idaho, $1800.
4. Roan Lavender, Nov. 1917; J. F. Dunne, Gilroy, $625.
5. Avondale's Gipsy, Mar. 1917; Ormondale Co., Redwood City, $1300.
6. Cumberland Girl, Sept. 1916; Pachero Cattle Co., Hollister, $525.
7. Countess Lavender, Sept. 1917; Conaway Ranch, Woodland, $2050.
8. Stamp's Victoria, April 1917; Conaway Ranch, $950.
9. Ravenswood Lady 3d, Oct. 1917; B. F. Rush, Suisuin, $1000.

Long Jumbo and Yate's Big Orphan

have sired some wonderfully fine pigs. Big type Poland-Chinas by these two boars for sale at a reasonable price. Write immediately for full description. Fully guaranteed to satisfy.

R. J. Yates, Orland, Cal.

Duroc-Jersey Pigs

from both Eastern and Western Registered Sows of Best Blood Lines. Sired by LEADING BOARS

Ranch: Van Nuys, Calif.
W. Chas. Swett, 7256 Franklin Ave., Hollywood, Calif. Phone Holly 4115

Duroc Jerseys

In San Diego County

Great Model

The Most Popular Sire in the West

Winsor Ranch

Bonita, Calif. Address R. K. Walker

DUROC JERSEYS

IMMEDIATE SHIPMENT
YOUNG BOARS, WEANLINGS
BRED OR UNBRED GILTS
WRITE FOR PRICES
GARDINER RANCH
R D No 4 BOX 735
SACRAMENTO, CALIF

10. Queen's Gem 2d, Mar. 1918; J. F. Dunne, $750.
11. Red Queen 4th, Mar. 1917, and B. C.; H. M. Elberg, Woodland, $800.
12. Red Morning Glory, Dec. 1916; H. M. Elberg, $525.
13. Lady Sulton, Dec. 1916, and B. C.; George E. Dierson, Sacramento, $750.
14. Mayfield Mary, Feb. 1917; Wm. Bond, Newark, $560.
15. Mayfield Mysle, Feb. 1917; Wm. Bond, $560.
16. Mayfield Victorla 2d, Apr. 1917; Wm. Bond, $1850.
17. Live Oak Violet, Sept. 1918; J. F. Dunne, $500.
18. Cholce Princess, Oct. 1917; Foster Bros., Denver, Colo., $550.
20. Lady Grace, May 1914, and B. C.; J. E. Montgomery, Davis, $560.
21. Lancaster Snowball, Mar. 1915, and C. C.; Ormondale Co., $1000.
22. Red Sybil, June 1911, and C. C.; George E. Dlersen, $725.
23. Crimson Flower, Jan. 1918; Wm. Bond, $750.
25. Gloster Miss 3d, Mar. 1918; J. F. Dunne, $875.
26. Llve Oak Dorothea, Nov. 1917; Foster Bros., $725.
27. Live Oak Eveline, Oct. 1917; Butte City Ranch, Butte City, $500.
28 Live Oak Fashion, Mar. 1918; J. E. Montgomery, $450.
29. Live Oak Ringlet, Sept. 1918; George E. Diersen, $430.
30. Live Oak Jane, Sept. 1918; George E. Diersen, $310.
31. Live Oak Maria, Oct. 1917; Conaway Ranch, $800.
32. Live Oak Daisy, Sept. 1918; George E. Diersen, $310.
33. Live Oak Florence, Sept. 1918; George E. Diersen, $310.
34. Live Oak Queen, Sept. 1918; George E. Diersen, $310.
35. Red Emerald 2d, Sept. 1917, and C. C.; H. M. Elberg, $650.

Countess Lavender

Sold to Conaway Ranch, Woodland, for $2050, the record price for a female of any beef breed sold in California or the West.

36. Overlook's Bloom, Aug. 1914, and C. C.; Paul R. Sims, Galt, $1125.
37. Mistress Maria, Nov. 1916; Conaway Ranch, $1025.
40. Eveline 5th, Mar. 1914, and George E. Diersen, $525.
41. Mayfield Rose 2d, Apr. 1917; Butte City Ranch, $210.
43. Henrietta, Mar. 1912; George E. Diersen, $525.
44. Maggie Murphy, June 1914, and C. C.; George E. Diersen, $525.

RING SIDE REFLECTIONS

It was a hot sale from start to finish—the auctioneers could not be convinced that the thermometer registered less than 130 degrees—Milne brought his overcoat, too!

Judging by the character of the four females selected by C. Harold Hopkins of the Conaway Ranch, at an average of $1200 each, they intend to give their bull, California Model, purchased at the spring sale at Davis for the record price of $5500, an opportunity to prove his ability. This firm contemplates establishing one of the top herds of the West. They now own the highest priced bull and female sold in the West.

No Shorthorn sale would be possible without that veteran breeder, Senator B. F. Rush of Suisuin, but those looking for the choicer things would just as soon he would stay away as he always makes them pay full values—and it is pretty generally conceded that he can spot value as keenly as any one. He selected a particularly valuable lot in Ravenswood Lady 3d, one of the choicest bred females of the whole offering and in calf to Lord Julian, crack son of Lord Avondale one of the best breeding bulls in America.

J. F. Dunne of Gilroy who is starting a herd made a number of carefui selections aided and abetted by C. N. Hawkins of the Pacheco Cattle Company, Hollister Hawkins, who is president of the California Shorthorn Breeders' Association, and one of the largest breeders in the West, makes a highly satisfactory mentor for anyone.

When Henry M. Elberg of the Roselawn herd at Woodland and his herdsman Carl Johnson start bidding it is a good cue that something choice is in the ring—and they usually get what they go after. In the sale they got three of the best bred females in the offering. Elburg will make a sale of Shorthorns October 16, at Woodland.

One of the most critical buyers at recent Shorthorn sales is Wm. Bond of Newark. Bond has greatly strengthened his herd in the past year and apparently is determined to have as good as the best—and he knows how good the best are. He made a particularly fortunate selection when he got the corking good Mayfield Victoria 2d.

James M. McDonnel, manager of the Ormondale Company, Redwood City, was out after the good ones, and got one in Avondale's Gypsy, a Dustin Gypsy Maid sired by Avondale's Heir—and another in Lancaster's Snowball, a very sweet and breedy cow with a clinking bull calf at foot by Rockwood Monogram.

Master John Elmo Montgomery of Davis, accompanied by his father, is becoming a familiar figure around Shorthorn auctions. He made his start at Davis last spring and followed it up last week by assisting his father select the good cow, Lady Grace and the junior yearling heifer, Live Oak Fashion.

George E. Dierssen of Sacramento made his entry into the Shorthorn ranks with quite a pronounced splurge. Dierssen selected ten head and it is doubtful if any buyer got more for his money.

W. S. Guilford of the Butte City Ranch, Butte City, was the most persistent bidder at the sale. Billy started nearly every lot at good stiff figures and continued to bid until he reached his limit. He secured two head. If every breeder was as strong a supporter and booster for Shorthorns as Guilford the breed would be farther advanced than it is. Guilford will sell Shorthorns, Berkshires, Shropshires and ponies at the ranch, August 2.

Visitors at the sale had an opportunity to meet Col. Ed. Patterson of Missouri. The colonel is manager of the famous Ravenswood herd at Bunceton. That herd is the oldest in existence and has been responsible for many of the best cattle the herd has produced. Colonel Patterson is a gentleman of the old school and past master in the art of cattle breeding.

Scotty Milne, one of the greatest authorities in America on Shorthorn pedigrees acted as ring man. Scotty has been identified with many of the greatest Shorthorn herds of this country. For years he was with the George Bothwell herd in Missouri, later with the world famous Tebo Lawn herd. He was with the last herd at the time of its disposal when the mighty Choice Goods, and the balance of that wonderful collection were sold. Milne has been identified with more famous Shorthorns than perhaps any other man.

The directors of the state board of agriculture met the day of the sale and attended the auction. President Roeding and Secretary Paine stated that the board was anxious to stimulate the live stock industry in every way—and particularly welcomed the holding of pure bred sales at the fair grounds.

Don't Let Your Stock

Lose their early Summer Gain through neglect now

Pasture is getting short. Your animals must go on dry feed—hay and grain. It's a big change from the succulent, nutritious grasses of summer which supply the needed laxatives and tonics.

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Experiments on live hogs prove that a 2 1/2 per cent dilution of Kreso Dip No. 1 will kill virulent hog-cholera virus in 5 minutes by contact.

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We will send you a booklet on how to build a hog wallow, which will keep hogs clean and healthy.

We will send you a booklet on how to keep your hogs free from insect parasites and disease.

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True to Manage the San Francisco Live Stock Show

The board of directors for the California International Livestock Show to be held at San Francisco, Nevember 1 to 8, have announced that Professor Gordon H. True, head of the animal husbandry division of the University of California, has acccpted the management and secretaryship of the event. The announcement will be looked upon with great satisfaction by all the live stock interests of the West as the selection of Professor True at once insures that every detail of the show will be conducted on the highest possible level and to the interest of all.

It is doubtful if any man in the West, available for the management of such a show, has a wider or more intimate acquaintance with live stock affairs than True. True first came West over 15 years ago and for a number of years was connected with the University of Arizona. Later he was in charge of the animal husbandry department of the University of Nevada, and while at that institution his work was of such a character that he was offered the place he now holds with the University of California. His work in this state is too well known to all to require mention. Since coming to California he has been largely responsible for the rapid development of the live stock industry and his faith in the possibilities of California as a live stock state has been justified by the sensational exhibits from his institution at the International Live Stock Exposition.

Prof. Gordon H. True

The success of California animals in competition with the world has served as an inspiration to breeders throughout the West.

True believes that live stock shows play an important part in live stock development — not merely as shows for breeders, but as powerful educational factors. Believing thus, True is planning to establish the San Francisco show on broad policies and hopes to make the show more than a San Francisco or even a California show.

The show is backed by ample financial resources, and the board of directors consists of some of the biggest men in the West. The management has been fortunate in securing the California Building as a home. Offices have been established in the Lachman Building and True expects to issue the classification and premium list at an early date.

The University of California has generously granted Professor True a five months leave of absence.

FAIR DATES

Ventura County, Ventura, August 13-16, Secretary L. P. Hathaway.
California State, Sacramento, August 30-September 9, Secretary Chas. W. Paine.
Humboldt County, Ferndale, September 16-18, Secretary W. S. Moore.
Antelope Valley, Lancaster, September 17-20, Secretary, R. B. Cameron.
Napa County, Napa, September 18-20, Secretary E. P. Locannini.
Kings County, Hanford, September 22-27, Secretary Frank C. Russell.
Glenn County, Orland, September 29-October 4, Secretary E. A. Kirk.
Fresno District, Fresno, September 30-October 4, Secretary C. G. Eberhart.
California Industries and Land Show, San Francisco, October 14-19, Secretary E. H. Brown.
Tulare County Live Stock Show, Tulare, October 6-11, Secretary R. C. Sturgeon.
Southern California, Riverside, October 7-11, Secretary W. W. Van Pelt.
Los Angeles Live Stock Show, Los Angeles October 18-26, Secretary C. R. Thomas.

BIG SALE AT BUTTE CITY RANCH

The next big event on the sale calendar will be the second annual auction sale to be held at Butte City Ranch, Butte City, on Saturday, August 2. Butte City Ranch, which is owned by W. P. Dwyer and W. S. Guilford, is developing into one of the important breeding establishments of the Sacramento Valley.

The owners who have large interests in Northern California have long recognized the value of better live stock in the general scheme of development and have undertaken to produce at their ranch a class of live stock that will prove profitable Herds of Shorthorn cattle and Berkshire hogs as well as a large flock of Shropshire sheep are maintained, and the surplus is offered the public through the medium of auction sales. The forthcoming sale will consist of 12 head of registered Shorthorn bulls and 38 females. As a whole the lot represents a very desirable collection of useful cattle, a number of which represent blood lines that have long

A scene at the Llano Vista Farm of F. A. Langdon at Perris, California. These pure-bred Hampshires are being fattened with "Quick-Fat."

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Redlands Junction: S. P. Dallas
Nuevo: Nuevo Mercantile Co.
Murietta: R. W. Tarwater.
Temecula: G. A. Burnham & Son
Harbor City: J. A. Pifer
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been popular in this state. The offering has been selected with special regard to the needs of the beginner. The sale will include 125 head of Shropshire sheep, perhaps the largest single offering of Shropshires ever sold in California and they are of a character to attract a wide range of shepherds, from the small flock masters to the larger range operator. Butte City Ranch has been identified with Berkshire swine for so long that today Butte City Ranch claims the distinction of being instrumental in making Glenn County the Western Berkshire center. A few nicely broken Shetland ponies will be included as a special attraction for the children. It is expected that the sale will attract one of the largest crowds ever attending a California auction.

EUROPE BUYING AMERICAN HORSES

In a letter sent out recently by Wayne Dinsmore, secretary of the Percheron Society of America, he comments on the European demand for American work horses. Mr. Dinsmore says in part:

"Decided improvement in the horse market is manifest. Exports to Europe have already begun, despite very high ocean rates. Marx and Hammel have forwarded three shipments to Havre, France, part of which were billed directly to Belgium via Havre, as the port of Antwerp is not yet available. Vanlandengham, of Belgium, who formerly acted as interpreter for many Americans purchasing pure bred horses in France and Belgium, has begun buying horses on the Chicago market and expects to ship at least 100 per week. Another firm, the identity of which has not yet been disclosed, will begin July 7, so that from the known arrangements of these three exporting firms, from 400 to 500 horses will be purchased and shipped abroad each week from Chicago alone. St. Louis will undoubtedly be in the game soon, so that farmers may look for a good demand for surplus drafters.

"The Marx and Hammel consignment of 200 head which left Chicago July 1 were a good useful lot of work horses, ready for immediate service. All were broken and most of them right out of farm work. They ranged from 15.3 to 16.3 hands in height, and from 1500 to 1800 pounds in weight, in good working flesh. The majority were geldings, but mares are just as acceptable, or a little more so. The best type of draft horses is wanted, but the less desirable ones are accepted at a discount in price. Harry McNair, in commenting on this, said: 'It is easier to sell a real good drafter for $300 than a mediocre one for $225.' Horse row comment credited the cost price of this last lot of 200 head at $265, average on the Chicago market, which means a cost of about $240 each in the country. There were a number of horses in the shipment which cost over $300 per head and a good many that did not cost over $225, for the spread between the good ones and the medium kind is great.

"The horse that is most sought for is the one that will stand 16.3 to 17 hands, with depth of chest equal to one-half his height, and well proportioned throughout. Such a horse must be strong backed, powerful in build, deep middled and well let down in the flanks, with good underpinning, and weigh over 1700 pounds in working flesh. Such horses will bring from $325 to $350 each. Short, steep pasterns, small constricted feet or crooked hocks are not wanted, and unsound horses are also declined with thanks, although a slight puff about the joints will get by if the horse is otherwise sound.

"One fact of especial interest to farmers is that the exporters will take the mediocre stuff if they can not get the best. No man can afford to sell the best if he expects to improve his horses. It is therefore good policy to cut out all of the smaller, less desirable work horses, and dispose of them as buyers appear; and they will come more and more frequently, for there is a steadily growing demand for drafters for city and construction work, as well as for export. Shrewd judges of the market predict that by 1921 good draft horses will be higher in price than ever before: and then, five years too late, there will be a frenzied stampede of farmers to breed their mares and with this will come a widespread demand for good stallions, which the pure bred horse breeders of America must meet."

Imp. Scottish Lord

The Shorthorn bull calf purchased by T. S. Glide, Hillcrest Farm, Davis, in the record breaking Carpenter and Ross sale held at Chicago. Scottish Lord is a red junior yearling bred by Robert Anderson of Aberdeenshire, Scotland. He was sired by Lord of the Ring and his dam is Bright Bess of Collynie (Imp.), a Marr Bessie bred by Wm. Duthie and sired by Knight of Collynie. It is expected that the addition of such a bull will add much strength to the Hillcrest herd.

The California Tractor and Implement Association recently met in San Francisco and discussed matter of selecting permanent secretary, forms of order blanks, future demonstrations, and giving punch generally to the whole farm power campaign.

Butte City Ranch

Owned by W. P. Dwyer and W. S. Guilford

Butte City Glenn County California

Second Annual Sale

Saturday August 2, 1919

50 Registered Shorthorns

38 Females—12 Bulls

These Shorthorns present a splendid selection for the breeder who wants to found a registered herd with modest investment. They are of uniformly good type, in excellent physical condition, and are sired by Victor Stamford, Vermillion, Gloster Archer, Roan Chancellor, Crescent Dale, Gibson's Goods, Ringleader, Sir Type, and other bulls of approved breeding.

There are choice cows with calves at foot, bred heifers, and a very desirable lot of open heifers. All of the bred females are in calf to the Butte City Ranch herd sire Victor Stamford, who is by one of the best sons of Whitehall Sultan and out of a Stamford dam.

Every Shorthorn sold as a single lot is guaranteed to be a breeder, and is tuberculin tested; every young animal permanently immunized against blackleg by Purity Blackleg Aggressin made by the Kansas process.

125 Registered Shropshires

35 Mature Ewes—40 Ewe Lambs
35 Yearling Rams—20 Ram Lambs

This is the first time within the history of public sales in California that buyers have had an opportunity to buy such well bred registered Shropshires of splendid type at public auction. The offering is in high class condition throughout, and represents Broughton, Cavendish, Minton, and Wardwell breeding, the best obtainable. The owners of Butte City Ranch have selected some of their very best Shropshires for this sale, for they believe that nearly every farm in California can profitably own a farm flock, and that the foundation should be of the best.

50 Registered Berkshires

The Berkshire offering is composed of a choice selection of gilts and young boars, in thrifty, vigorous condition, well grown and of the breeding and type that will meet favor with buyers on sale day. An outstanding feature of the offering is the uniformity of breeding. Every animal in the sale is sired by a son of the world's famous imported English boar Epochal, or by a grandson of the world's grand champion boar Grand Leader 2nd. Besides this the animals in the sale are out of some of the very best breeding sows ever owned at Butte City Ranch.

Every Berkshire in the sale is permanently immunized against hog cholera by Purity Hog Cholera Serum and Mixed Vaccine.

10 Shetland Ponies

Scores of youngsters have been made happy by the purchase of Shetland Ponies from Butte City Ranch, and the owners have selected some of their very best for this sale.

Catalog of Sale Free on Request

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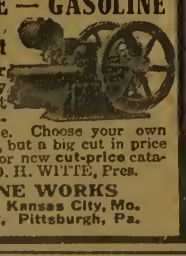

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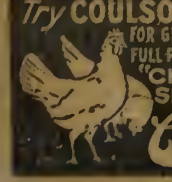

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Shade in the Henyard

By Jean A. Koethen

CHICKENS, both young and old, like the sun. On even a very hot day you may see them stretched out in the hottest place in their run, enjoying a sun bath. Possibly this liking for an ocasional soaking in the sunshine has led them to be misunderstood by some of their friends, for nothing is more trying to all feathered creatures than exposure to the sun at all times. In our climate protection from the sun's rays is a vital part of the equipment of a poultry yard.

Three kinds of shade may be provided for hens; that which any poultry house furnishes, inside and out; that which may be artificially provided by the use of cloth or lumber; and that furnished by growing things. The last is so much more desirable than either of the others that the first two may be dismissed with a word.

A poultry house, unless it is fitted with removable windows that abundant circulation of air may be secured in hot weather, may be shady, but it is hot. To force hens in an excessively hot spell to crowd into the house for shelter is to invite disaster. In ordinary weather they may manage fairly well, but when that trying annual hot wave comes and the mercury runs up to 108 or 110 degrees, reports of casualties are only too general.

Circulation of air, with green shade, is the only thing that saves hens in such weather. In that June hot wave two years ago a near neighbor of mine lost a dozen hens out of a backyard flock while my own were fit as ever the next day. What was the difference? Merely that hers were in a small house and run with a high board fence on the windward side, while mine were under pepper trees with all the breeze there was blowing through.

It is possible to build shelters which protect the flock from the actual rays of the sun. Burlap or canvas stretched on four posts is often recommended. The objection to all such shelters is that they do not prevent the radiation of heat from the ground that is not shaded, and the hens have not only to endure this radiation, which is considerable from a light-colored soil, but are forced to go into the sunshine whenever they desire to move about. In a yard shaded by trees there is no radiation, the occasional unshaded patches of ground can be easily avoided, and, best of all, the breeze, as it draws through under the trees is cooled as much as any outdoor air can be.

This cooling effect of heavy shade is more obvious in winter than in summer. On the lot adjoining our home stands an immense live oak with a spread of nearly 50 feet. In summer this is a wonderful place for chicks. In the spring all coops must be placed so far from it that they receive no morning or late afternoon shade. If they do the chicks are chilled. A brood of late chicks is making very rapid growth in its shelter now. They are hardly in the sun from morning till night. Not all of us can have live oaks for summer shade, but we can plant peppers or if we object to them, walnut, fig or some of the smaller deciduous trees.

Peach, apricot and plum trees are not altogether satisfactory for chicken yards, though far better than nothing. Their shade is not as dense as chickens like in the hottest weather, and it is difficult to keep the birds from roosting in them, to the great detriment of the crop. I have never had a walnut in a chicken yard, but two planted near the fence help shade the yard and I have never seen the chickens that were privileged to range under them try to roost in the branches or those of a fig. We made the mistake of planting both peppers and peaches in our chicken runs, and while the shade is all that could be desired, the peppers have killed out the peaches. The orange gives a fine shade for chickens and the branches offer less inviting perches than do some other trees. I hope the day will come when a flock of hens will have the run of every orange grove in Southern California.

We have tried a good many vines on chicken fences. Those that were carefully protected from destructive beaks grew; those that were not protected did not last long. After more than one rose had been nibbled off till it finally gave up the struggle, it was with a good deal of satisfaction that we saw a climbing Cecil Bruner reach the top of the fence. Once up, its troubles were over. Honeysuckle is the most satisfactory vine I have tried. It covers the fence, gives a good deal of shade and asks only a start.

Where fruit trees are not desirable the castor bean makes a good shade. The plants are not as easy to start as one would suppose, but when they get a start they are there to stay. It is sometimes objected that they are poisonous, but this is not a valid objection, for chickens have too much sense (or is it instinct?) to touch them.

It is quite generally agreed after some years of bickering that utility and fancy qualities can be successfully combined in the same bird. If this is true, is it not equally true that poultry yards can be made beautiful as well as useful? Must hens always choose between bare yards or none at all? A bare, glaring yard is not a pretty place, even when it is clean, and who can count the bare, filthy, unshaded poultry yards in this state of ours? Why not fill them with trees and cover the fences with vines? In a land where it takes only a little labor and a little water to make any tree or vine grow, why not make all our backyards and henyards and barnyards beautiful I cannot believe but that even chickens will thrive better for beautiful surroundings and the shade Nature meant them to have.

TEST EGG PRODUCTION AT UNIVERSITY FARM

During the six weeks' poultry short course beginning September 29 at the University of California Farm, Davis, various methods for testing for egg production will be shown, it is announced by Dean Thomas Forsyth Hunt of the college of agriculture.

One of these tests, known as the color test, and based on the theory that the bright yellow color in the shanks of yellow legged fowls fades out in proportion to the number of eggs the hen lays, is said to be of great value in culling out the slacker hens in July and August.

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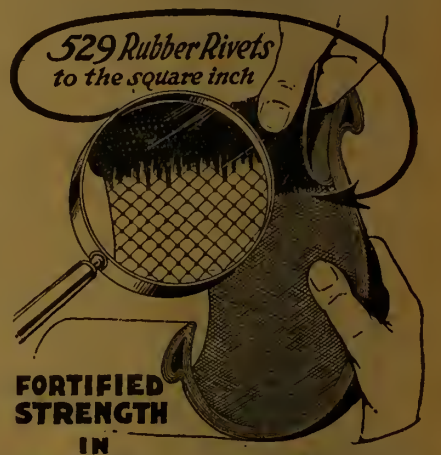

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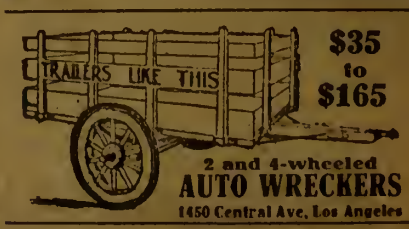

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1450 Central Ave. Los Angeles

Fresno County is planning for her district fair September 30 to October 4.

the poultry division of the University of California college of agriculture are declared to show that in all yellow legged fowls, such as Leghorns, Plymouth Rocks, Wyandottes and Reds, the yellow color in the shanks, beak, ear lobes and skin slowly fades out as the number of eggs increases during each laying season. While this method is not as accurate or as expensive as trapnesting, flocks of layers can be culled quite accurately by the use of this color test in connection with other physical indications, according to poultry experts.

A HOME-MADE CHICK COOP

A clever design for a backyard chick coop is shown in the accompanying cut. It consists of a coop 30 by 36 inches to which is attached a wire run 36 by 48 inches. Both coop and run are one foot high. This coop is so light that it can be moved daily to clean ground. As will be seen from its height, it is not designed to accommodate a hen, but is useful for a small brood of hand-raised or brooder chicks. A home-made brooder used with this coop is made of a large tin can, cut in two in the middle to make of suitable height for the coop. A door is cut in one side, and the chicks are kept warm by a hover made of strips of outing flannel tacked on a round board.

SCIENTISTS DISCOVER RARE FISH

Fish and game commission experts are discovering fish hitherto unknown on the Pacific Coast. Fish looking more like worms than fish, square-headed fish and flying fish are among those discovered for the first time.

Deep in the seclusion of the Long Beach laboratory with nothing but the murmur of the ocean to disturb their operations, Will F. Thompson and Elmer Higgins, well known fish experts, have been busy identifying specimens of various fishes secured by the new patrol boat "Albacore," which is making a scientific investigation of the Southern California fisheries. For example, one rare fish which recently came into the laboratory was a specimen of Tetragonurus cuvieri Risso, which these experts termed "The Squarehead" for lack of a better name. This fish was found near Catalina and is according to reports the first of its kind found in North Pacific waters. Although we hear this species mentioned as a rare fish existing in the Mediterranean by the naturalist Rondelet as early as 1554, and although since that time it has been taken several times in the Mediterranean and near the Madeira Islands, yet never before has it been caught off the western coast of North America. In her finely meshed nets, the "Albacore" has taken a specimen of Stylophthalmus paradoxus, a native of the Indian Ocean, also a member of the genus Trachypterus (king of the salmon), which is supposedly very rare. Nor did the Exonautes rondeletii, a kind of flying fish, formerly found only in tropical seas escape the "Albacore's" nets. She also obtained from the deep a species of sandab hitherto confined solely to Mexican waters.

The best thing to say when you have nothing to say is to say nothing and stick to it. It was Chuck Connor's policy when in doubt to "say nothin' to nobody about nothin'."

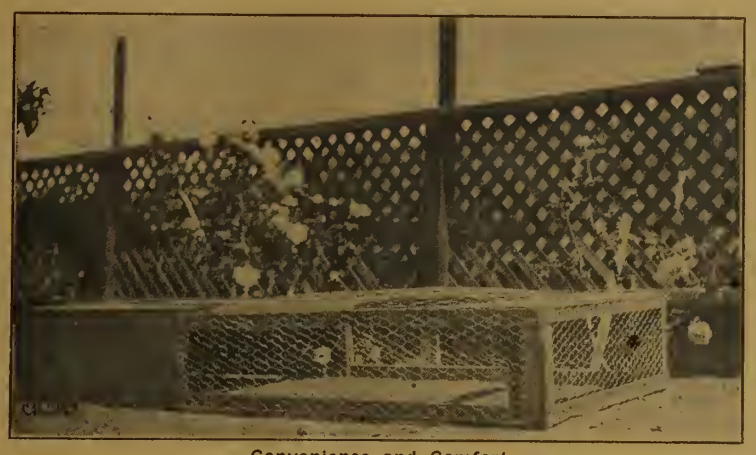
Be careful how you jump at a conclusion. It may knock you down.

INTEREST IN LAND SETTLEMENT COLONY

During the last six months the state land settlement board has been receiving at its Berkeley and Durham offices, from 20 to 40 letters a day asking for information about the state land settlement act, to know what progress has been made in the colony at Durham and when and where settlers, and especially soldier settlers, can obtain farms.

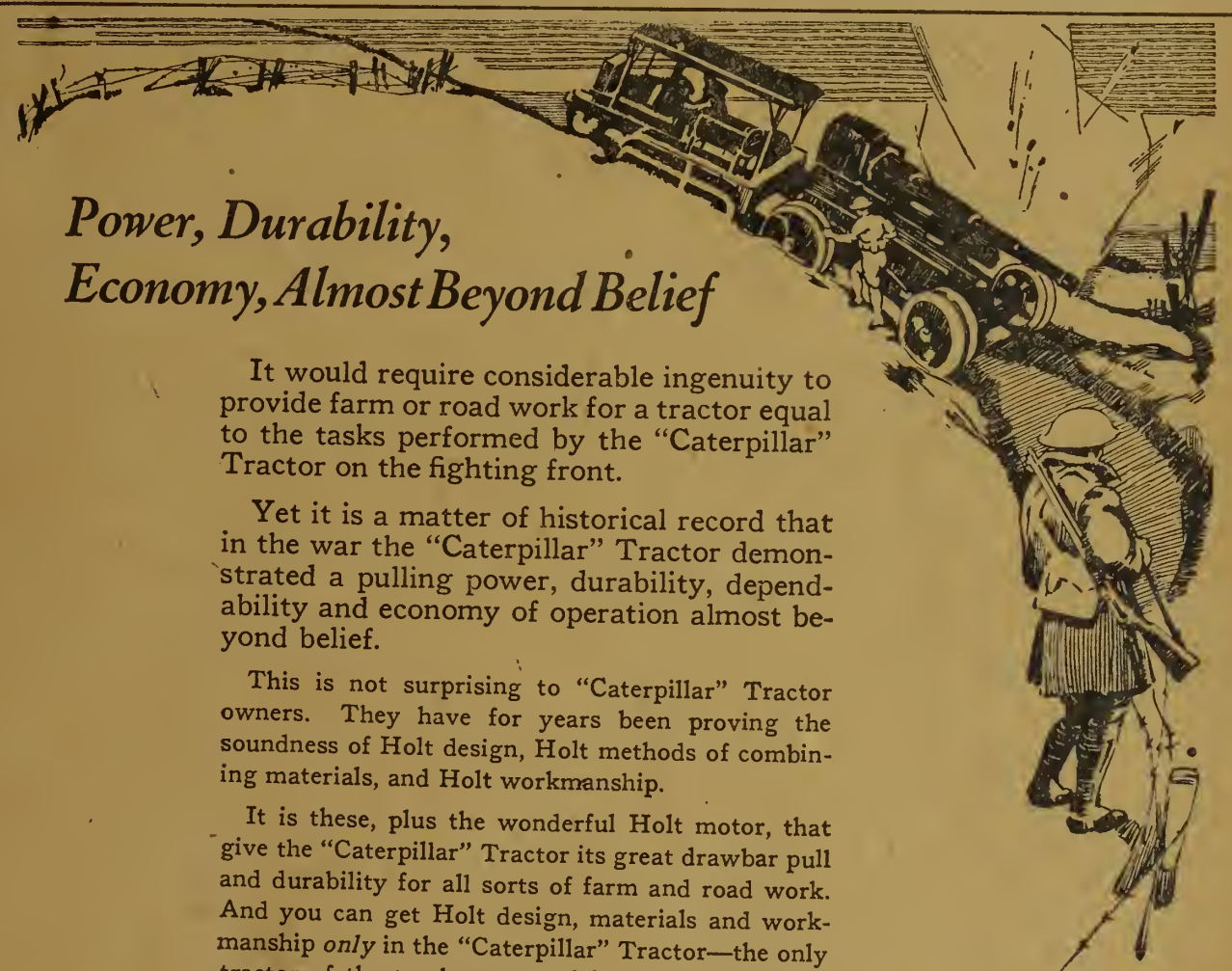
The interest in the act has been increased by the agitation for similar legislation by congress and in other states. State officials from ten other states and from several foreign countries have visited Durham and, without a single exception, have made favorable reports on both the settlement policy which this act embodies, and on the development which has taken place under it. The correspondence has now become so heavy that the board has prepared a statement which gives the history of the board's operations and the progress of settlers up to date and outlines the plans for the future. It is accomplished by a map showing the subdivisional plan, soil map, and is illustrated by a number of views of houses and works on the settlement.

It appears that the appropriation of one million dollars for continuing settlement work does not become available until August and the board cannot until then officially invite offers of land, but it is examining all lands offered informally and will be glad to do this so that it can proceed with the purchase and development of a new area as soon as possible. Among the offers thus far received, the most important is from the Northern California Counties Association, which offers from 10,000 to 40,000 acres in Lassen County, 20,000 to 40,000 acres in Modoc County, 10,000 acres in Shasta County and 20,000 acres in Siskiyou County. Offers of three areas have also been received from the San Joaquin Valley.



Convenience and Comfort
This chick coop is easy to handle and warm in cold weather.

The alfalfa meal mill at Kerman, Fresno County, is now busy grinding.



Power, Durability, Economy, Almost Beyond Belief

It would require considerable ingenuity to provide farm or road work for a tractor equal to the tasks performed by the "Caterpillar" Tractor on the fighting front.

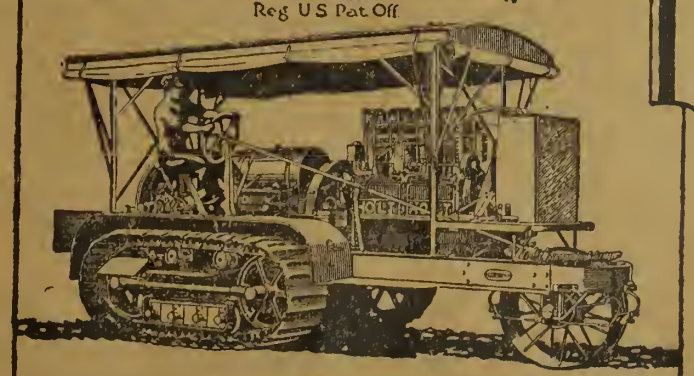
Yet it is a matter of historical record that in the war the "Caterpillar" Tractor demonstrated a pulling power, durability, dependability and economy of operation almost beyond belief.

This is not surprising to "Caterpillar" Tractor owners. They have for years been proving the soundness of Holt design, Holt methods of combining materials, and Holt workmanship.

It is these, plus the wonderful Holt motor, that give the "Caterpillar" Tractor its great drawbar pull and durability for all sorts of farm and road work. And you can get Holt design, materials and workmanship *only* in the "Caterpillar" Tractor—the only tractor of the track-type used by the Allies in the great war—chosen and proved by severe and prolonged tests.

Get your "Caterpillar" Tractor now. Send for Catalog 403.

CATERPILLAR
Reg U S Pat Off



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MANUFACTURING CO. Inc.
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The direct selling method from producer to consumer, and a clearing house for over 33,000 readers, weekly.
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TREES

For Sale — Budding Cloth 50c yard; also leading varieties citrus nursery stock. Selected and pedigreed buds. Order quick for early delivery. Cyrus W. Wilhite, Citrus Nurseries, Glendora, California, Box 154.

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

400 Late Valencia, ½ inch to ⅝ inch, one year old buds. Edw. H. Rust, 1625 Bank St., So. Pasadena, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

MISCELLANEOUS

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

War Pictures, best ever brought over. Postpaid each 25c, set of 10 for $2.00. Cash Nurseries, Sebastopol, California.

WANTED

I WANT A GOOD FARM

Will give some one an excellent deal. Take their farm and mortgage included, on an excellent three story new, strictly modern, clear, close in, Los Angeles brick apartment house. Including good furnishings and paying $500.00 per month gross, always filled. We both save commission as I am no broker, but am in the Farm Loan business. If your farm is large or small, write me. I can adjust differences. James Brown, 423 Hollingsworth Bldg., Los Angeles.

Wanted—Salesmen and Agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1.00. W. Porter Barnes, Santa Rosa, California. Dept. A-11.

Wanted — Poultryman, very successful, wishes to meet ranch owner desirous establishing modern, up-to-date poultry and hog ranch, particularly turkeys. Will build, equip, stock, run same. Furnish one-half capital. Can make this best investment on ranch. Highest testimonials and evidence furnished. C. T. Johnston, 831 S. Flower Street, Los Angeles.

Wanted to Hear From Owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Feeder Hogs Wanted. R. B. & N. Ranch, Waukena, Tulare Co., California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Box 501, Fowler, California. Write for circular, prices on seed and plants, Sudan, Dwarf Milo Maize, Honey Sorghum, Amber Cane.

For Sale—About 1000 RHUBARB ROOTS, can be sub-divided into three or four times the amount, make offer. Mrs. Lee, Box 49, Lathrop, R. 1.

Seed Potatoes for August planting: True White Rose, British Queen and Earliest of All. Stock limited, order early. H. A. Hyde, Watsonville, California.

RABBITS

N. Z. Reds — Registered Pedigreed from prize winning stock. Registered buck 9 months old $10.00, wt. 9½ lbs. Registered bucks 5 months, wt. 7½ lbs., $6.00. A few fine utility does bred $3.00. Write your wants. E. Peppin, 86 Cambridge Ave., San Leandro, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock, Paul Kruger, Watsonville, California.

FERTILIZER

EARL A. HOLCOMB
SOIL LIFE

Fertilizer and materials mixed to balance every soil. Bureau of testing and advice free on all horticultural and agricultural subjects. 1022 Washington Bldg., Los Angeles. Phone 62907; res. 16116.

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101, Watsonville.

GOATS

61 Head of Angora Goats for sale. K. J. Easby, Jr., Merced, California.

MACHINERY

Used Engines and Plants For Sale. Replaced by electricity.
8 horse power R. & V. complete with pump $300.00.
15 horse power Samson complete with pump $400.00.
20 horse power Samson engine $150.00.
6 horse power International engine $75.00.
6 horse power Upright Fairbanks $50.00.
25 horse power White & Middleton $290.00.
32 horse power N Type Fairbanks engine $400.00.
15 horse power New Western complete with pump and all accessories ready to install $550.00.
4 1½ horse power Bull Pup engines (new) $25.00.
2½ horse power Gilson engine $50.00.
20 horse power Simplicity engine, A-1 condition and mounted on heavy trucks $500.00.
28 horse power Lauson engine and 8-in. pump (almost new).
1 Samson tractor, size 12-25 working every day $600.00.
24-in. Samson geyser grain separator with 20 feet extension feeder. Price on application.
8-in. Krogh pump $120.00.
6-in. Gould pump $90.00.
Come and see for yourself. Phone at our expense or write us when you will be here that we may be able to give you the proper time and attention. Harry Crowe. Phone 90. Tulare, California.

SPECIAL BARGAINS
GALV. SURFACE IRRIGATING PIPE
4-in., $16.50; 6-in., $24.50; 9-in., $38; 10-in., $43. 6 hp. Lambert gas engine, $115; fine 8-in. double acting cylinder new, $150; 4-in. hor. cent. pump, $69; 5-in., $88; 6-in., $125; No. 3 Ames double acting plunger pump, $275; pipe and rods extra.
WINDMILLS-TANKS-STEEL TOWERS
8-ft. mills $29 up; 10-ft., $39 up; 12-ft., $65 up; 16-ft., $135.
New, Used Redwood Tanks Guaranteed. 1000 gal., $19.50; 2000, $28.50; 3000, $35; 5000, $48; 25,000, $125.
NEW, USED GALVANIZED TANKS.
Used 1000 gal., $28; 3000, $55; new 1000 galv., $42.50; 2000, $56.
SHALLOW SQUARE & OBLONG TANKS
RANCH MACHINERY.
10-ft. grain drill, $95; 4 row beet drills, $35 to $45; 3 and 4 gang disc plows, $95 to $125; bean, beet cultivators, $35; potato planters, $75; cider mill, $17.50; cable. Nearly new Bean spray outfit cost $75 for $35. Many other bargains. Trade tools you don't need for material you do or pay with Liberty Bonds. Also want to buy. Material guaranteed as represented or money refunded. DEMMITT CO., 120 No. Main, upstairs, Los Angeles.

Corn Harvester — One man, one horse one-row, self-gathering. Equal to a corn binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kansas.

One No. 40 Eagle Typhoon Ensilage Cutter. This machine has been used by us only a short time and is as good as new. Can be seen at our stables, 727 Commercial St., Los Angeles, California Truck Company.

CATTLE

BUTTE CITY RANCH
SHORTHORN CATTLE, SHROPSHIRE SHEEP, BERKSHIRE HOGS, SHETLAND PONIES. Stock for sale at all times. Second Farm Sale—all breeds—August 2, 1919. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show Herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Elkhorn Farm Ayrshires — Choice registered young bulls at reasonable prices. J. H. Meyer, 440 Montgomery Street, San Francisco, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale at a Bargain—One 4 year old registered Guernsey bull from W. H. Dupee's noted herd. Apply to W. E. Borden, Oceanside, California.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale, John Lynch Ranch, Box 321, Petaluma.

Ayshires—Registered Yearling Rob Roy bull. Farmer's price. Redwoods Ayrshire Farm, La Honda.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

Send For Free Booklet—"All About Patents and Their Cost." Shepherd & Campbell, Patent Attorneys, 734 L 8th St., Washington, D. C.

SHEEP

Sheep For Sale—500 ewes with lambs by side. Have rented my ranch and want to sell. A good buy for a small place. John M. Cox, R. F. D. No. 1, Box 160, Brawley, California.

HOGS

CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rockwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, Calif.

POLAND-CHINA BARGAINS

BRED SOWS GILTS BOARS
In order to reduce our herd and to make room for young stuff we find it necessary to offer for immediate sale a choice lot of Poland-China sows, gilts, and boars. The offering represents as good blood lines as we could buy and has been nicely grown out. All are cholera immune. Prospective buyers should not overlook this opportunity. You will be surprised at the extremely reasonable prices we are quoting. Scrub hogs are not profitable. Our registered hogs are money makers. Write now for prices. Act quick. These hogs must be sold. AMERICAN HOG CO., 920-922 CROCKER BLDG., SAN FRANCISCO.

BERKSHIRES BERKSHIRES
ANCHORAGE QUALITY

We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

TWO SOWS AND A BOAR
$100 the trio.
Two sow pigs from ten raised, sired by Baron Duke 201st, 780-pound $1100 Grand National Champion, from Rival B. Princess, a prize winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion Boar from Symboleer Belle, and of Superbus blood lines; a boar from a litter of ten raised, big, long typy, stretchy pigs. Sandercock Land Co., in charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, California.

Billiken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

For Sale—Registered Duroc-Jersey pigs, McKee Bros., Pilot Defender blood, owned by C. T. Thompson, Bishop, farrowed April 3rd, 1919. Very fine. For particulars and breeding, write: W. E. Detrick, Bishop, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Just a Few Left of those choice Berkshire pigs, sows and boars, all registered. A few bred and unbred open gilts. Lark Meadow Ranch, Geo. A. Stingle, El Monte, California.

Pathfinder and King's Col. Stock, immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Have Sold All the Pigs advertised recently. Will have fine pigs from spring litters for sale in June. Fine Shropshire ram lambs, pure bred, for sale. J. J. Prendergast, Redlands, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Duroc-Jersey Swine For Sale, best blood lines. Bred sows and gilts, service boars. Jersey Queen Farm, San Jose, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

HOGS

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724, Sacramento, California.

POULTRY

Baby Chicks For Sale—250,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock. 25, $3.50; 50, $7.00; 100, $12.50. Special prices, 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition. No money in advance; pay on delivery. Shipped safely anywhere West of Rockies. Finest hatchery in the world. Established 1898. Must Hatch Incubator Company, 438 Seventh Street, Petaluma, California.

White Leghorns are the most profitable breed of poultry. If you are in the business for profit you will eventually have them. Early broilers; early payers; early PROFITS. We sell only WHITE LEGHORN BABY CHIX from heavy laying HOGAINZED hens. Safe delivery of full count live chix guaranteed. Prices per 100; February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

It's like groping in the dark to attempt raising poultry successfully without some knowledge of the business. Poultry for Profit tells you how to house, feed and raise chickens, ducks and turkeys successfully in California. It contains 225 pages with 18 pages of illustrations and bound in cloth $1.00 postpaid. Cultivator Publishing Co., 115 N. Broadway, Los Angeles, California

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
It's our business to improve egg production for you. We have the stock planned for your success. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trapnested S. C. White Leghorns every day in the year since 1912 Box B 337. Inglewood, California

THE MISSION HATCHERY
August and September Baby Chicks
White and Brown Leghorns, R. I. Reds, White and Barred Rocks. Priced reasonable—quality stock. Supply limited BOOK EARLY. The Mission Hatchery, Box 27, Campbell, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Baby Chicks From My Thoroughbred, heavy-laying strain of S. C. White Leghorns. Am booking orders now for July delivery at $12.00 per 100, $110.00 per 1000. Prices for August and September delivery on application. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Baby Chicks—Our large, bred to lay S. C. White Leghorn hens will produce the pullets that will bring in the dollars this winter. Tupman Poultry Farm, Ceres, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

For Sale: Silver Campine Cockerels, also eggs for setting. Roy Ward, Lindsay, California.

ENGINES

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

Gas Engine 6o H. P. Commercial, also 8 inch horizontal pump used one day. Sell at bargain. Prentice Ranch, Escondido, California.

For Sale—20 Horse Gasoline Engine (Olds), perfect condition, with belt and pump; cheap for cash. H. M. King, Anaheim.

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 South Los Angeles Street, Los Angeles.

FARM LANDS FOR SALE

$10 to $25 An Acre, Good Land, 160 acres and up, some improved, oak timber, watered by streams and springs, fine climate. W. W. Baldy, Raymond, California, Madera County.

For Sale — Imperial Valley's finest fruit and alfalfa farm for sale at a bargain, 160 acres. Earliest grapes and apricots in the United States. C. A. Myers, 1119 Haas Building, Los Angeles.

880 Acres mountain stock ranch, well watered and partially fenced—government land adjoining which can be homesteaded. C. P. Gould, Southerland Apts., 334 East Ocean Avenue, Long Beach, California.

JACKS AND JENNETS

For Sale or will exchange for land fine bunch black registered Jacks and Jennets. No better bunch to be found in California. A. L. Allen, Perris, California.

FARM LANDS FOR SALE

400 Acres, run down ranch but a good one if developed. Price will astonish you. All fenced, 125 acres farming land, balance pasture, and timber land, old house, old barn, good water, well at house, and good spring at upper end of ranch, running sufficient water for all stock purposes. Quantities of wood. This a pick up in the way of ranches. S. P. R. R. Co. drilling oil well within 10 miles of this property. C. P. Gould, Southerland Apts., 334 East Ocean Ave., Long Beach, California.

CITRUS LAND FOR SALE
You can buy citrus orchards at Escondido as well located, as productive, for one-half to two-thirds you must pay elsewhere. Why pay more? Walnut land at $200 per acre. All kinds of properties for sale. Bargains in three citrus fruit orchards. You must see to appreciate. Also a 26 acre tract I have for sale. MOTTO: ALWAYS FOR LESS. Escondido Valley is the famous Sun Kist Vale. Theron J. Smith, Real Estate, Escondido, California.

AGED OWNER MUST SELL
193 acres $2800, including 4 cows, bull, team horses, wagons, harness, long list implements, hay, grain, etc., near R.R. town. 160 acres productive loamy fields, wire fenced pasture, home-use wood; apples, pears, plums, grapes, etc., 7 room house, 2 basement barns. Low price, $2800 gets all. Easy terms. Details page 43 Catalog Bargains 19 states, copy free. STROUT FARM AGENCY, 831 A. G., New York Life Bldg., Kansas City.

For sale Stock Ranch—4000 acres near San Bernardino, California. Land is level and excellent for alfalfa and stock. Several artesian wells. Price $300,000 including fine improvements and some stock now on ranch. Owner will consider some city property as part payment. Easy terms on balance. F. P. Turner, 119 East Colorado Street, Pasadena, California.

For Sale—High Class Bearing Orange Grove of Eight Acres, fronting on boulevard—El Camino Real—just outside city of Anaheim; the Valencia section. In fine condition, and pays 20 per cent. Price $24,000 including balance unpicked crop, about three-fifths. I have also a 3-year-old grove, ten acres, $10,000. H. M. King, Anaheim, California.

Mountain Ranch—334 Acres, 90 acres under cultivation, 30 acres Bearing Orchard, balance in Timber, Oak and Pine. Free Water, deep, rich soil, eight-room house, 100 tons hay, barn and out buildings. Will subdivide. Price $7500. Terms. Address, Paradise Ranchita. P. O. Box 123. Paradise, Butte County, California.

For Sale by Owner—18 Acres, improved, about 5 miles south of Williams, 11 miles southwest of Colusa, county seat of Colusa County, near State Highway. Alfalfa, abundance of water for irrigation. Ideal poultry and dairy ranch. Address: C. A. Hanson, Williams, California.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

FARM LOANS

There are Advantages in Borrowing Money secured by real estate from a strong reliable and well managed company of long standing, organized to transact a mortgage business exclusively. You can deal direct with this company and no commission or brokerage is charged. Money is loaned at lowest current rates and you can keep it as long as wanted, provided the security remains good. You are under no obligations in borrowing here, as we always have money of our own to loan and are constantly seeking new and acceptable acquaintances. Borrowers are assured here of that security, safety and protection under all circumstances that only a well-established company of large capital and surplus can offer. Loans are made from 3 to 5 years on ranches, orchards, business blocks, residences, etc. We would be pleased to have you call or write your needs. MORTGAGE GUARANTEE COMPANY, Mortgage Guarantee Bldg., 626 So. Spring St., Los Angeles. Tel. 10707.

PAY OFF THAT MORTGAGE.
PLENTY OF MONEY WITHOUT COMMISSION.
Loans made for 5 years at 6½ per cent. Pay off all or part at any time—will loan to build, house, put down well, or take up present encumbrance—make new arrangements while available. Write today for details. James Brown, 423 Hollingsworth Bldg., Los Angeles.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.
The Yellow Front. Established 1892
112-118 S. Los Angeles St. Los Angeles.

Sell Cheap One Owens 16x20 double cylinder bean thresher used only on 100 acre crop. Prentice Ranch, Escondido, California.

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BEST OF BUSINESS TRAINING
Munson School
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It's Easy to Prepare For a Bookkeeping position while earning. Write for Booklet X 21. It's free. Pacific Extension University, Spokane, Washington.

MULES

For Sale — Twenty-five young mules, one and two years old. Chas. Hubbard, Riverdale, California.

DOGS

Collie Dogs For Herding, cattle, sheep and turkeys. John G. Mee, breeder of Bronze turkeys and Embden geese. St. Helena, California.

DUCKS

Mammoth Pekin Ducks extra heavy breeders, 3 months old, $3.50 each. August Surtman, Merced.

GOVERNMENT LAND

300 Million Acres of "Free" land in U. S. "The New Homeseeker" a 104 page book WITH MAPS and ILLUSTRATIONS, showing millions of acres of vacant public homesteads, timber, mines or grazing lands. Founded on historical facts. DOES NOT MISLEAD. Read warnings "official," eliminates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico, Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico. Describes water, soil and climatic conditions, all the principal U. S. land laws. A marvelous publication, just off the press. Mailed anywhere, $2. Address "THE HOMESEEKER," Dpt. M, 3rd floor Grant Bldg., Los Angeles, California.

IS COOPERATION WORTH WHILE?

Continued from Page 51

them who are getting ten cents per pound so that after all the average cost of the outside packer and the average price of the outside grower is far less than 10 cents per pound. As a matter of fact, the present price of ten cents per pound, from an industry point of view, means nothing at all. There are at least three packing firms who could buy all of the raisins that are still unsold in the state of California for 25 cents per pound and not materially affect their financial standing, and it does not take a very courageous man to offer ten cents per pound when he knows there are no sellers and it is the judgment of the writer that there is not a single concern in the business today who would buy 10,000 tons of raisins at 10 cents per pound without knowing what the association prices are going to be. In fact less than a week since the writer, in response to an inquiry from one of the independent packers, offered to sell them 10,000 tons at the same price they were paying the growers, which was ten cents for Muscat raisins in the sweat box. The matter was referred to the head office in San Francisco and the answer came back that they would not be willing to buy the raisins unless the association guaranteed the price. In other words it is the old familiar proposition worn threadbare in this community that you can walk out into the rain with impunity as long as you have a friend who is willing and able to hold an umbrella over you, but in the past this phrase has been applied to the outside growers only, now, however, it seems that even the packers, who boast so much of their superior knowledge and great financial ability, are not averse to standing under the umbrella also.

And finally we are appealing to you as growers for your wholehearted support given in an ungrudging way. This is your organization and as it prospers you will prosper, and when it fails you will fail, and your support is needed as much in the hour of prosperity as in the hour of adversity. You cannot build an organization on lawsuits and liquidated damages, but the undivided loyalty of the 9,000 growers with whom we now have contracts will make our position impregnable. A little over a year ago 9,000 of us banded ourselves together with a common purpose and entered into agreements, each with the other, to do a certain definite thing for six years, and certainly these agreements that were entered into then with such enthusiasm are not now to be thrown aside as mere scraps of paper. It is still our opinion, as it was then, that if the whole of life were to be measured by a money standard that the contracts are worth while and if lived up to with fidelity will make the San Joaquin Valley the richest valley in the world, but there are things in life so much better than money that we do not care at this time to use that standard, and our appeal to you is to do right for right's sake, as absolutely the finest thing in life is an untarnished name and we do not believe that the growers of raisins will barter it away for a mess of pottage.

CALIFORNIA BEANS

A special investigation of bean production has just been concluded by the United States bureau of markets. This covers all varieties of beans in all bean growing states.

California's acreage of all varieties in 1918 was 592,000, the largest of any state in the Union. Michigan was a close second with 543,000 acres. Then came Colorado with 252,000, New York with 200,000, New Mexico 149,000, Idaho 43,000. The total acreage for the United States was 2,050,000.

California's 592,000 acres in 1918 produced 8,584,000 bushels of beans, while Michigan with almost as much acreage, 543,000, produced only about half as much, 4,887,000 bushels.

As to varieties in California, Limas, of course, lead with 33 per cent (includes Henderson Bush, 2.6 per cent). Next came Small White, 19 per cent; Pink, 14 per cent; Large White, 12 per cent; Red Mexican, 3 per cent; Cranberry, 2 per cent; Bayo, 2 per cent; miscellaneous, 15 per cent.

COLORADO BEAN GROWERS PROTEST

Colorado bean growers have found that the name "Pinto" is being applied by many dealers to any imported bean, whereas it properly applies only to a distinct variety of Colorado bean.

Therefore the Colorado State Farm Bureau has registered formal protest addressed to the Colorado Bean Growers' Association and the United States bureau of markets. Also it protests "against the policy of the United States government in purchasing any foreign beans as long as there is any considerable quantity of home-grown beans not marketed."

ENGLAND HEAVY BUYER OF CANNED FRUIT

English buyers are making large purchases of 1919 canned fruits, but they are not waiting for that fruit to eat; they are buying all they can get hold of of the 1918 pack. In April England secured shipment of $1,544,182 worth of canned fruits, $523,433 worth being peaches.

The California Cooperative Canneries are under the management of R. W. Crary and Vernon Campbell. James Madison of San Francisco has resigned as president.

We are, many of us, fooled by what men say, and we find out what they mean often when it is too late.

The fellow who waits for something to turn up has his eyes fixed on his toes.

Do Your Hauling with an Auto-Wheel

Don't strain your back pushing a heavy load on a wheelbarrow. Get an Auto-Wheel Coaster. You can move a big, heavy load with ease, with speed.

And when through working, you can have worlds of fun playing with your Auto-Wheel. It's a speedy, classy Coaster, as well as a sturdy Roadster. Has genuine roller bearings, oval spokes and steel axles and tires. If you're a REAL boy, you're going to insist upon an Auto-Wheel.

Want a Beautiful Felt Pennant?
Write us the names of three coaster-wagon dealers, mentioning which one handles the Auto-Wheel. We'll send you beautiful booklet, showing Auto-Wheel Convertible Roadster, too. Write TODAY. Address

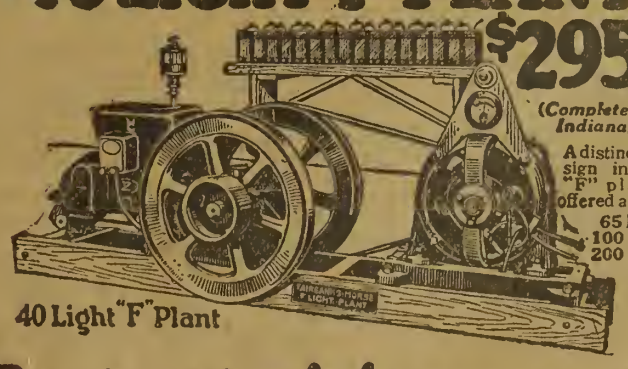
THE BUFFALO SLED CO.,
In Canada: Preston, Ont.
173 Schenck Street, N. Tonawanda, N. Y.

The Latest Plant for Farm Light and Power

Now you can get the plant that you long have wanted—one to furnish ample light and dependable, flexible power. This 40 light Fairbanks-Morse "F" outfit is quality all the way through—simple in design—exceptional workmanship and materials. Low speed engine, ball bearing dynamo—assure long life, less attention—lower maintenance cost.

Plant comes completely mounted on base and includes our famous "Z" throttling governor engine which can also be used to drive a cream separator, washing machine or churn, independent of the dynamo, either direct or through a line shaft. Instrument board is conveniently mounted over the dynamo and the simple construction throughout provides for a touch of a button to start and stop. We consider this new "F" plant the greatest value in the farm lighting field—and you get the added advantage of mechanical power. Your nearby dealer will further explain all details of the "F" outfit and demonstrate conclusively the many features your plant should have.

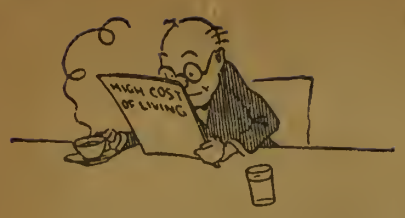
40 LIGHT "F" PLANT $295
(Complete F. O. B. Indianapolis)



A distinctive design in larger "F" plants is offered as below;
65 Lights
100 Lights
200 Lights

40 Light "F" Plant

Fairbanks, Morse & Co.
MANUFACTURERS CHICAGO



Water is the cheapest beverage, tea next.

"Why, how can that be? A pound of tea costs—"

Excuse us for interrupting you, but the way to count the cost of tea is not by the pound, but by the cup. A cup of fine strengthening invigorating delicious tea costs only ⅓ cent per cup, because a pound makes so many cups.

Schilling Tea is the fine practical economical tea of this country.

There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

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USTUS

Covers Them All

California Cultivator

24 to 32 Pages

One Dollar Yearly in Advance

THE SLEEPYTOWN EXPRESS

Just beyond the rainbow's end a river ripples down
Beneath a bridge, around a bend and flows through Sleepytown—
Through Sleepytown, where goblins toil to fashion wondrous toys
And make up fascinating games for little girls and boys.
And automobiles, just the size for little hands to drive
Await to whirl you all about as soon as you arrive.
But no one ever is allowed in Sleepytown unless
He goes to bed in time to take the Sleepytown Express!

I know a foolish little boy who always starts to whine
When he is asked to trot upstairs before it's half-past nine.
And often he will stamp his feet and shake his tousled head,
And make a racket, even then, when he is sent to bed.
Of course, when he has said his prayers it always is too late
To catch the Sleepytown Express — it starts at half-past eight,
And so, in all his long, long life—he's five years old this fall—
That little boy has never been to Sleepytown at all.

But other wiser little boys, and little girls as well,
As soon as 8 o'clock has struck rush right upstairs, pell-mell,
Get off their clothes and say their prayers, just of their own accord.
And, when the train comes rolling in, they're there to climb aboard.
Then, through a long, delightful night they wander up and down
And have a most exciting time in queer old Sleepytown;
And not for cake or anything that children could possess
Would any of them ever miss the Sleepytown Express.

—James Montague.

METHODS OF CLEANING

THE day of manual "help" seems to be past; the day of mechanical equipment is surely here. Housekeeping, perhaps more than any other business, has been slow to claim the help of mechanical aids. But more and more it is coming to be a case of necessity, not of choice, to find some means of accomplishing more work, more quickly and more effectively by fewer people—and generally by just one, the housekeeper. Perhaps some day the housekeepers will cooperate, as the grocers, the laundrymen, the ice men, the furniture men, the gardeners, and all the rest have done, but at present, as in the past, they are strictly in the position of workers and givers and sometimes it seems as if the whole world outside were the takers. The good days of "give and take" seem far in the future. Meanwhile we will have to do some taking for ourselves.

A guide book to the busy housekeeper has been printed by the Oregon agricultural college, written by Ruth McNary Smith. We have decided to give it to Cultivator house keepers entire, for while many, perhaps most, of its suggestions are already common knowledge, yet they will serve as reminders and a timely urge to avail ourselves of the help we may have for the taking.

* * *

Since the entrance of dust and dirt into a house seems unavoidable, and the housewife must spend so much time in merely keeping things clean, it is important that she be able to do this work as easily and quickly as possible.

General Equipment

Through the use of better equipment, a more systematic plan of work, and better methods, housework is losing much of its drudgery. It is difficult to care for a house properly without undue fatigue if the antiquated cleaning equipment found in most homes is used. In spite of the increasing use of machinery in every field of labor, women continue to be handworkers. The broom, dust pan, and mop, supplemented perhaps by a carpet sweeper and a hand washing machine, are certainly not adequate when used for the great variety of cleaning necessary in the average home. For example, in considering the broom from the standpoint of efficiency, it is evident that it can not be used with equal success on polished floors, rugs, linoleum, and matting. Originally designed to remove such coarse refuse as paper and sticks, it will not serve as well to remove the finely pulverized dirt found most commonly on the floors of the house. It is also evident that the broom merely redistributes a great deal of this dirt, much of which may be inhaled by the worker, and hence it can not be considered a sanitary means of cleaning.

The carpet sweper is useful in a limited way, in removing threads and lint from carpets and rugs, but fails to remove the quantities of dirt and dust carried onto the floor of a house. Recently a large number of so called "vacuum cleaners" operated either by hand, water, or electric power, have been offered for sale. These machines are designed so as to remove dirt from floors by suction into a dust bag, the mechanicism for producing this suction being of various types, that is, bellows or revolving fans in the lower-priced hand and power machines, pumps or turbine blades in the more expensive power apparatus. Some of these cleaners are very efficient, removing practically all the dirt from rugs and carpets in a dustless manner. Others are fairly satisfactory, while a great many are not worth buying because they are not based on a correct mechanical principle. There are really no good electric cleaners of low price, but there is a hand machine which removes dirt very well through suction produced by a bellows, and lint and threads by means of the brushes attached to the back. Some women might find this a little heavy to push over a carpet but it would certainly be less laborious and more sanitary than sweeping. Of course a machine run by electric or water power is much more desirable than the hand-run variety.

To remove dust and lint from a bare floor or around rugs, the oiled or dustless mop is very useful. The price of these mops is low.

Other examples of useful and medium-priced cleaning apparatus are the string mop, pail with mop wringer attached, cleaning brushes of various kinds, the dustless duster easily made at home according to the directions given later, and a chamois skin for cleaning windows.

For Laundry Work

There is probably no kind of house work so utterly fatiguing and back breaking as the laundering of clothes, usually because there is so little to work with, and the arrangement is so poor that every part of the process requires enough stooping, lifting, and carrying to exhaust a strong woman.

When there is plumbing, stationary tubs should be considered as necessary as a bath tub, or a sink. Those made of cement and covered with zinc are moderate in price. Tubs should be placed high enough to make stooping unnecessary, even if pipe is used for supports instead of the legs furnished. If the separate galvanized iron tubs are used, a base should be provided of the correct height.

Many hand washing machines are unsatisfactory because of the labor required to run them, the difficulty of keeping them in repair, and their doubtful efficiency. However, it is possible to purchase cheaply a simple suction apparatus. The lever and clamp for adjusting to the tub are most desirable. Excellent water power machines having a wringer attached to be run by the water motor as well may be bought for a little more. The electric machines are splendid, as a rule, but more expensive than those metioned. In general, that washing machine is good which cleans by means of the rapid passing of air and water through the clothes, rather than by any process of rubbing, twisting, or other motion likely to cause wear on the fabric.

Glass washboards wear better than metallic ones and if the grooves are not too sharply defined, injure the fabric less.

Copper boilers or block tin with copper bottom are more economical in the end than tin.

A securely built, collapsible ironing board is desirable. The same style may be simply folded against the wall and can be easily made by riveting the brace onto an ordinary board and hingeing it to the wall on a narrow shelf.

The weight of irons should suit the user; if too light, much extra pressure is required to smooth the clothes. Those covered with asbestos hold the heat better than the older type. An alcohol iron which burns wood alcohol as a fuel may be used where the electric one is impossible, but care should be used in its selection.

The electric iron is an economy in many ways and wherever electric power is obtainable should replace the old fashioned sad iron. In selecting an electric iron the following points should be considered.

There should be no exposed asbestos.

The porcelain plug should be well protected.

When the current is turned on, the bottom of the iron should feel uniformly warm to the hand; if hot in any spot scorching is more likely.

From six to eight pounds is a comfortable weight.

The voltage marked on the iron should be near that of the current in use.

Cleaning Materials

The housewife, formerly, used soap and sapolio for almost all kinds of cleaning, without much regard as to the qualities of the different kinds of surfaces with which she was dealing. There are a great many materials and compounds now offered for sale to suit every form of cleaning. Many of these mixtures are good, others are no better than one or two of their important ingredients used alone. Every dwelling should have a cleaning closet in which to hang mops, brooms, etc., with shelves for cleaning material where they may be stored together in labelled bottles instead of their being scattered through the house. The simple cleaning aids listed below cover the necessities but commercial compounds may be added.

Kerosene, ammonia, bath brick, rottenstone, whiting, turpentine, gasoline, washing soda, oxalic acid crystals, borax, alum, chloride of lime, boiled linseed oil, paraffin, soap (white laundry, naptha, cold starch, bluing, wood stain. (To make an oxalic acid solution add 3 oz. crystals to 1 pt. of water and allow to dissolve. Bottle and cork well. Label the bottle "Poison").

Schedule of Work

System in doing work is just as important as good equipment, and the housekeeper whose duties "are never done" is often one who never stops to plan out her work to save time, nor tries to prevent unnecessary steps by thinking ahead. Of course where there are small children it is much more difficult to organize the work well than where the family consists of adults. At first thought it may seem that housework is so varied, and made up of so many different duties that it would be almost impossible to make a list of these duties, much less assemble them into a definite program. Probably every woman has some working plan according to which she bakes on one day, washes and irons on another, and cleans at the same time each week. With some housekeepers this plan is practically unchangeable, and Monday being wash day is used for that purpose, even though another day might temporarily, at least, be more convenient. It is time for each housewife to decide whether her plan of work has been adopted because it is the most convenient and least tiresome to her or simply because a similar plan has been her mother's custom. It is possible to save much time for more important things by fitting in the work of the day so as to save unnecessary walking. Many people have found it helpful actually to write out a program of work for a week, seeking to systematize as much as possible.

(Next week "Methods of Work.")

Summertime

There is no lyric can surpass
Morning wind in orchard grass
That dips and swells and dives along,
And winnows out a silver song
Of sun and air and orchard grass;
This no lyric can surpass.

There is no epic that can be
Half so epic as the sea
That chants in caverns green and old
A story that is never told,
Of cities dead and ships at rest,
And moons that rode upon her breast.

—June Bookman

"STAMPED AND SELF-ADDRESSED"

"And that was what she said!" declared Mary, trumphantly. "Didn't I tell you last night, Uncle Jim, that Mrs. Barnes was a horrid, disobliging woman, and that I knew it wouldn't do the least bit of good to ask her to help?"

"Why, yes," said Uncle Jim, slowly, over the top of his newspaper. "If I remember correctly, you did say something like that. Well, then, congratulations, my dear. That's another stamped and self-addressed envelope come back."

"Congratulations?" said Mary. "I guess you didn't understand. I said that Mrs. Barnes had turned out just as horrid and disobliging—"

"As you expected her to be," finished Uncle Jim, briskly. "Yes, I understand. I merely connected it with something I heard the other day. Every day we send out mental messages all round us; and we always inclose a stamped and self-addressed envelope, which brings us in return something of the same nature as the one we dispatch—what we sent for, really!

"I don't believe in swallowing things whole, you know, and so I've been watching myself and my own reactions—and I'm getting a good deal of amusement out of them. There's one newsboy, for example, just outside my office building who, for some reason, has seemed to take a particular fancy to me. Whether I buy or not, he always give me a specially cheery greeting. Of course, I soon began to send him back a special greeting, too, though it wasn't until recently that I realized it was in his own self-addressed envelope.

"And there's one of my clients who always comes to me as if he thought I knew everything about the subject in hand. I'd do almost anything rather than disappoint that man and shake his confidence. That's what he draws in his envelope.

"And there's another person—did you ever experience that kind, Mary?—who looks me over critically from head to foot when I begin to talk. There's nothing in the world, as far as I know, that dries up the springs of one's inspiration like that critical stare. I am just as stupid as that person expects me to be! And I send back her envelope."

"Why, that must be why everybody loves mother so!" cried Mary, eagerly. "She brings out the best in people. I've heard people say so again and again. That's because she looks for it, isn't it? And probably that's why she gets on so well with Delia. Lots of other people have tried Delia for a cook but couldn't stand her because of her temper. You know mother never loses hers—so there's no temper envelope to come back."

"Exactly," agreed Uncle Jim with a smile. "You've got the idea, Mary Ann. Moreover, you're already touched on the other side, which is the really important one: not the kind of envelopes we receive, but those we send out to other people. Suppose we tried to get ours there first? Eventually, we'd raise the level of the whole transaction."

"Yes, I see. But to take a concrete case, Uncle Jim, what sort of envelope, as you call it, could I have sent to Mrs. Barnes? I couldn't think 'She'll be sweet and generous.' I know her too well."

"You might, though, think something like this, mightn't you? 'Nobody could be intentionally disagreeable about a real charity like this. Of course she'll help if she possibly can. It's a privilege!'"

"Humph!" said Mary, doubtfully.

Uncle Jim laughed. "What do you really think as you go round to get contributions?" he asked.

"Really and truly," said Mary, "I guess I think, 'I hate to ask you, and I'm sure you'll hate to help, but I think it's your duty, and I'll be furious if you don't; and I think myself quite superior to you!' Well, no wonder I get the results I do. My envelope says, 'Return a disagrceable answer in two minutes to Mary Mason!' You've given me a great deal to think over, Uncle Jim."

"At least,' 'said Uncle Jim, "that's what the flattering little envelope that you send me always calls for."—Youth's Companion.

HOUSEHOLD QUERIES

How Are Sweaters Worn?

The fashion magazines show very pretty sweaters which seem to be worn instead of waists. We are planning to go to a beach resort for a month and I think that a sweater would simplify the clothes question if I can wear it instead of a waist most of the time. But of course I want to do what "they" are doing.—Reader, Arizona.

"They" are most certainly wearing sweaters instead of waists, especially at the bcach. The hand knit ones can be made very attractive, even beautiful. As you have no doubt noticed in the fashion magazines they are inclined to run to a sort of glorified, frilly Russian blouse with loose sleeves. They are also made sleeveless and collarless in jumper effect; also crocheted of cotton thread in open filet pattern in dainty pinks, blues and yellows.

A SUBSTITUTE FOR A THERMOS BOTTLE

This is the season of the year when numerous picnic parties make a thermos bottle almost a necessity. Unfortunately for many these conveniences are too expensive for the occasional use required, and to these the following will be found a very satisfactory substitute—and the cost nothing at all:

Take two quart fruit jars and fill with cracked ice; wrap each jar with several thicknesses of newspaper and then wrap the two with several thicknesses of papers. It will be found that ice or ice water or iced tea will keep cool as long as in a thermos bottle that costs several dollars.—M. E. Bemis.

RUNNING FOR OFFICE

Away down in Georgia a candidate for county commissioner filed his statement of campaign expenditures, as by law required, which contained among other things the following items: Lost 1349 hours sleep thinking about the election. Lost two front teeth and a whole lot of hair in a personal encounter with an opponent. Donated one beef, four shoats and five sheep to a county barbecue. Gave away two pairs of suspenders, four calico dresses, $5 cash and thirteen baby rattles. Kissed 126 babies. Kindled fourteen kitchen fires. Put up four stoves. Walked 4,076 miles. Shook hands with 9,508 persons. Told 10,101 lies and talked enough to make in print 1,000 volumes. Attended sixteen revival meeting and was baptized four different times by immersion and twice some other way. Contributed $50 to foreign missions, and made love to nine grass widows. Hugged forty-nine old maids. Got dog bit thirty-nine times and was defeated.—Exchange.

WHY HE DOESN'T HEAR IT

"This is the fourth morning you've been late, Rufus." said the man to his colored chauffeur.

"Yes, sah," replied Rufus. "I did ovahsleep myself, sah."

"Where's that clock I gave you?"

"In m' room, sah."

"Don't you wind it up?"

"Oh, yes, sah. I winds it up, sah."

"And do you set the alarm?"

"Ev'ry night, sah, I set de alarm, sah."

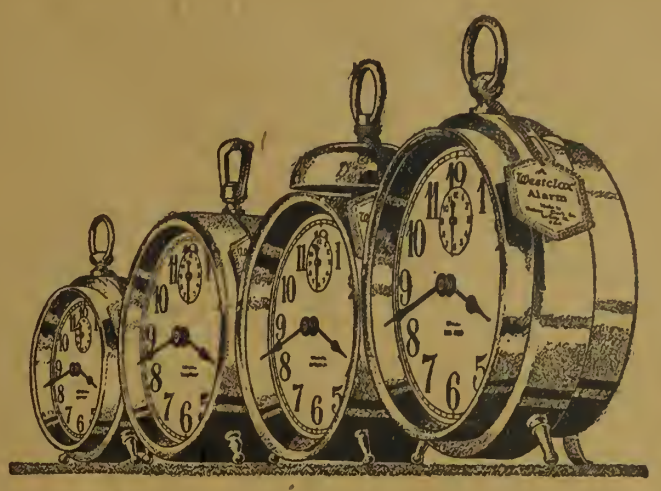
"But don't you hear the alarm in the morning, Rufus?"

"No, sah. Dere's de trouble, sah. Yer see, de blame thing goes of while I'm asleep, sah."—Yonkers Statesman.

THERE'S A DIFFERENCE

"They also serve," blind Milton wrote,
"Who only stand and wait."
This may be so, though why it is
I cannot clearly state.
But there's a proverb quite as true
That in our minds should stick;
They also serve (the devil well)
Who only stand and kick.
—San Diego Union.

A little borax added to the starch gives a gloss to the cothes and prevents sticking when ironing.



Westclox

WESTCLOX is a short way of saying Western clocks. It means a line of good alarm clocks made by the Western Clock Company. Every clock in the Westclox family is manufactured by the patented process that made Big Ben famous. Whether you select Big Ben, Sleep-Meter, America, or Baby Ben you *know* you're getting a good clock because each one is a Westclox.

To make it easy for you to recognize our clocks, we print the family-name, *Westclox*, on the dial right above the name of the clock. We also attach an orange colored, six-sided Westclox tag. These are marks of good time-keeping. Look for them on the alarm you buy.

Western Clock Co.—makers of Westclox
Offices at La Salle—Factories at Peru, Ill., U.S.A.

Stock Raising in Western Canada
is as profitable as Grain Growing
In Western Canada Grain Growing is a profit maker. Raising Cattle, Sheep and Hogs brings certain success. It's easy to prosper where you can raise 20 to 45 bu. of wheat to the acre and buy on easy terms,
Land at $15 to $30 Per Acre
—Good Grazing Land at Much Less.
Railway and Land Co's. are offering unusual inducements to home-seekers to settle in Western Canada and enjoy her prosperity. Loans made for the purchase of stock or other farming requirements can be had at low interest.
The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta extend every encouragement to the farmer and ranchman.
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TESTED AND GUARANTEED

Pacific Pipe Co. Main and Howard Sts. San Francisco

Los Angeles Markets

Los Angeles, July 16, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price, 56 lb.; prices to retail merchants in 1-lb. squares, 56@57.

Dairy Exchange prices last week on extras:

July	9	10	11	12	14	15
'19 ...	55	56	56	..	56	56

CHEESE

Brokers' prices:
California fresh, lb., 31; price to retail merchants, 33@34.

EGGS

Fresh extras, Produce Exchange closing price 51 doz., price to retail merchants, 54 doz.; case count, Produce Exchange closing price, 49 doz.; price to retail merchants, 51 doz.; pullets, Produce Exchange closing price, 45 doz.; price to retail merchants, 47.

Dairy Exchange prices last week on extras:

July	9	10	11	12	14	15
'19 ...	51	51	51	..	51	51

POULTRY

Prices to producers: Hens, 23@34; broilers, 25@28; fryers, 30; roasters, 35; old roosters, 16; capons, 42; ducks, 23; ducklings, 23@25; geese, 25; turkeys, 34@40; squabs, 45.

Belgian hares, 14.

Sulphur

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100 per cent pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR, 100 per cent pure. This has increased various crops up to 600 per cent.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc.

And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 DEGREES BE., Sulphur Paste, Nicotine, Blackleaf 40, etc. Fungicides and Insecticides.

Carried in stock and mixed to order.

San Francisco Sulphur Co.

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We are equipped to make immediate shipments. Send for "ILLUSTRATED BOOKLET," also booklet "NEW USES FOR SULPHUR", Price-list, and Samples.

Please state for what purpose you use the sulphur, quantity needed, and date of shipment preferred. Telephone Kearny 871.

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Sulphate of Ammonia

Men who applied ARCADIAN Sulphate of Ammonia to their grain are beginning to reap the profits.

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼ per cent. Made in U. S. A. Arcadian is the great American Ammoniate.

For sale by all the principal dealers.

For information as to application, write

The Barrett Company

Agricultural Department

510 First National Bank Bldg.

BERKELEY, CAL.

POTATOES AND ONIONS

Demand and movement moderate, market firm.

Potatoes: Haulings probably at height, expect falling off. Demand active, movement good, market firm. Quality and condition fair. Carloads f. o. b. usual terms—White Rose, No. 1s sacked, mostly 3.00; decking and icing extra.

Onions: Demand and movement moderate. Homegrown green onions 35 doz. bunches. White Globes 1.40@1.50 per lug box; 5.00@5.25 per cwt. Stockton, Yellow varieties, 4.75@5.00 per cwt. Italian Reds mostly 4.50.

Sweets, Coachella, lb., 7½@8.

VEGETABLES

These are the actual prices obtained July 15, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Asparagus: Northern, green, local fancy, 14@15; fancy, 10@11.

Beets, doz., bunches, 40.

Beans: Kentucky Wonders 4@6 lb., practically no demand.

Carrots, doz., 35@40.

Cucumbers: Local lug, 40@50.

Celery: Local, best, 1.35@1.50 dozen bunches. Poorer low as 75. Crates, best, 4.50@5.00.

Corn: Roasting ears 65@75 per lug of 3 dozen.

Eggplant, local lb., 5@6.

Lettuce: Sales to retailers, best lettuce in cabbage crates, 75@85.

Parsley, doz., 15.

Radishes: Round Red 15@20 per dozen bunches. Long White, 30@35 per dozen bunches. Long Red 20 per dozen bunches.

Rhubarb: Local Giant Cherry, 1.25@1.50 per packed box. Strawberry, fancy 1.00@1.35 apple box.

Spinach, doz., 20.

Squash: Local summer, lug, 40@45.

Tomatoes: Best locals, 1.00@1.75 cr.; lugs, 2.00@2.50.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained July 15, by Los Angeles wholesalers in restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: New crop, pear boxes, No. 1, 2.75@3.00; apple boxes, B grade, 2.75@3.00.

Apricots: Bulk, lb., 6@7; lug, 1.65@2.00.

Blackberries, cr., 3.00@3.50.

Cantaloupes: Market dull. Quality and condition poor. Demand and movement slow. Sales to jobbers: Imperial, Coachella and Arizona, green meats wrapped and unwrapped, standards 45s 1.50@1.75; ponys 45s and 54s 1.25@1.50; flats 12s and 15s 60@70.

Phoenix, Arizona: Shipments slightly increased. No demand. Quality and condition of very wide range, ripes not being shipped. Season practically ended—practically all shipments consigned.

Cherries: Beaumont district, Windsor, 13@14; Lambert, 17@20.

Figs, per 10 lb bx. 1.75@2.00.

Gooseberries, 10@12 lb.

Grapes: Imperial and Coachella Valley Thompson Seedless 12@13 lb.; Malagas, 15@16.

Loganberries: 3.50@4.00 per cr. of 30 baskets.

Raspberries, cr., 4.00@4.50.

Peaches: Demand and movement good, for homegrown stock. Sales to retailers—various varieties, best 2.00@2.25 per 30 lb. lug. Poorer low as 1.00.

Pineapple, lb., 13@15.

Plums: Demand and movement good. Climax 7@8 lb. Santa Rosas, 8@9 lb.; Simoni, 8@9 lb.; Tragedy 8@10; Wickson, 8@9.

Strawberries, cr., 3.75@5.00.

Watermelons; Imp., lb., 2@2¼.

Demand, and movement moderate quality and condition only fair. Imperial Valley Chileans and Angelenos, best 1½@1¾ lb.

Lemons: Fancy packed, 6.00@6.50; local pack, 4.00@4.50; loose, some tree ripe, pack, 4.00@5.00; loose, some tree ripe, 3.00@4.00.

Oranges: Valencias, medium fancy, 5.00@5.50, local pack, 2.50@4.00.

Grapefruit: Local fancy, 2.50@4.00 bx.; poorer, 1.50 up.

HONEY

Carloads f. o. b. usual terms. New crop, demand and movement moderate. Supplies moderate. Market firm, no change in prices. Orange Blossoms 18@20 lb.

BEANS

Demand and movement slow, market firm. Carload f. o. b. usual terms: Pool prices, choice stock recleaned basis, Limas, sacked 9.00; Henderson Bush 8.00; choice, recleaned, Small Whites 6.25@6.40; Large Whites 5.75@6.00; Blackeyes, 3.90@4.00; Tepary, 2.25@2.50.

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	17.00@22.00
Barley	15.00@20.00
Alfalfa	16.00@20.00
Wheat or Barley straw	8.00@10.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	25.00@26.00
Standard alfalfa	19.00@21.00
Stock alfalfa	12.00@16.00
Standard dairy	22.00@23.00

GRAIN

Prices on local Grain Exchange, carlots:

Egyptian corn, 3.35.

Milo maize, 3.00@3.02½.

Barley, 3.07½@3.08½.

Corn, sacked No. 1, Yellow, 3.70; No. 2, 3.70; No. 3, 3.65; White No. 2, 3.77½ No. 3, 3.70.

Wheat, 46.50@47.50.

Feterita, 3.20.

San Francisco Markets

San Francisco, July 15, 1919.

BUTTER

Quotations made daily by the San Francisro Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	56
Prime Firsts	55

Prices extras past week and year ago:

July	8	9	10	11	12	14
'19 ...	56	55½	56	56½	56	56
'18 ...	48½	..	49½	..	50	..

Rcts. wk. ending July 14, 2694 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	30@32
Cal, Y. A. fy.	35
Ore. Triplets	36
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	51
Firsts	Nominal
Extra Pullets	46

Prices extras past week and year ago:

July	8	9	10	11	12	14
'19 ...	52	52	51	51½	51½	51
'18 ...	48	..	49½	..	47	..

Rcts .wk. ending July 14, 299,460 dozen.

POULTRY

Hens, W. Leghorns, 28@32; roosters, young, 40@45; old, 20@23; broilers, 32@33; fryers, 34@35; squabs, 2.50@4.00 doz.; ducks and geese, 25@28.

Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1100 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.

Calves: Light weight, 12½@13; medium, 11½@12; heavy, 10@11.

Lambs: Yearlings, 10@10½; milk, 13@13½.

Sheep: Wethers, 9¾@10; ewes, 7½@8.

Hogs: Hard, grain fed, 100 to 150 lbs., 19½; do, 150 to 250 lbs., 20; do, 250 to 300 lbs., 19½; do, 300 to 400 lbs., 18½.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; canner cows, 4@5; good bulls, 5@6½; calves, 9@10.

Hogs: Today's market on top, packer hogs, hard and well finished, weighed and delivered off cars at our plant, South San Francisco: 175 to 250 lbs., 18½; 150 to 175 lbs., 18; 250 to 300 lbs., 18½. Usual dock and price discounts for other weights and kinds.

Fresh beef: (Carcass beef), per lb.: Fancy steers, 500 to 700 lbs., 16; choice steers, 450 to 650 lbs., 15½; good steers, 450 to 700 lbs., 15; medium steers, 450 to 700 lbs., 14½; fair steers, 14; common steers, 14; fancy heifers, 14; choice cows, 13½; good cows, 13; fair cows, 12½; cutter cows, 12.

POTATOES

Supplies liberal, demand and movement good, market steady. Street sales, White varieties, Garnets, lug boxes 3@3¼ per pound.

ONIONS

Onions: Per cental, yellow, 4.00@4.75; Bermuda, Crystal wax, 3.75@4.00, green, 1.25@1.50 per box. Garlic, 20@22½.

VEGETABLES

Wholesale selling price:

Beans: String, 9@11; Wax, 9@10; Pole, 7@10; Limas, 10@12½.

Cabbage, doz., 50@60.

Celery, cr. of 5 doz., 3.00@3.25.

Cucumbers: Large box, 1.25@1.50; flats, 75@1.25; Los Angeles, lug, 90@1.25.

Corn, doz., 25@35.

Eggplant, southern, fy., 6@12½.

Lettuce, doz., 30@35.

Okra, green, lb., 6@8.

Peppers, Bell, lb., 10@20; Chili, 7@11.

Peas, lb., 5@10.

Radish, 10 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, 1.50@2.00.

Spinach, 75@1.25.

Squash: Summer, cr., 40@75; Italian, 75@1.25 per 40 lb. bx.

Tomatoes: Sacramento River per 35 lb. bx., 2.50@3.00; Merced, 75@1.25.

CITRUS

Wholesale selling price:

Per bx: Lemons, 5.00@7.00; lemonettes, 3.50; grapefruit, 2.50@5.00; oranges, 3.50@5.00.

FRESH FRUITS

Wholesale selling price:

Apples: Newton Pippins, 2.25@3.00; Red Astrachans bx., 1.25@1.75; Gravensteins, 2.50; Crabapples, 20 lb. bx., 75@1.25.

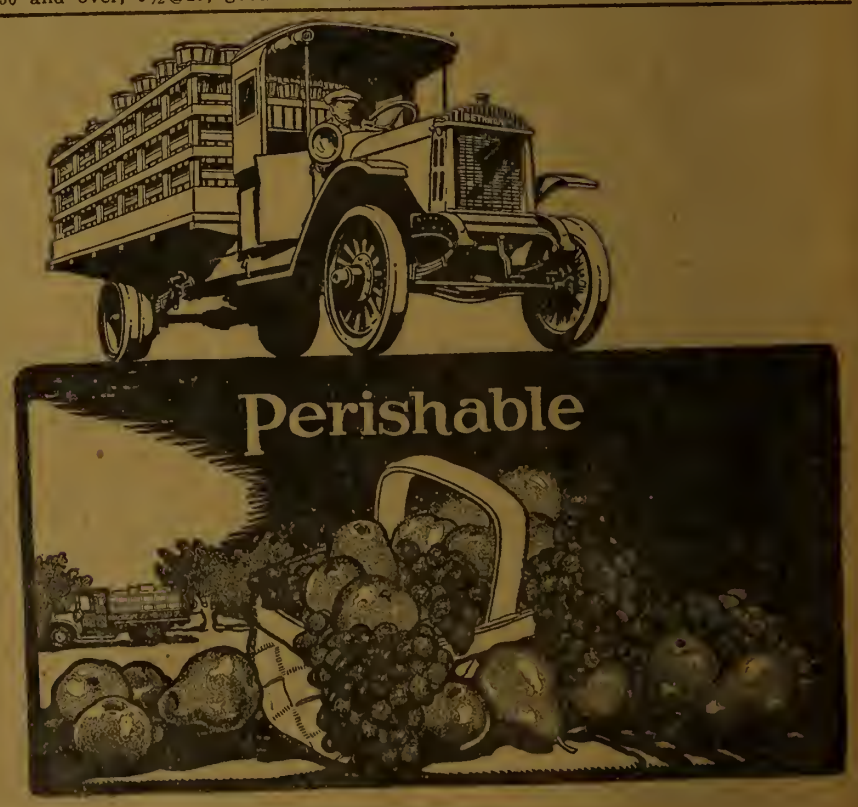
Apricots: Winters, 1.75@2.00; loose, 6@8; Royal, 7@8; ton, 150@160.

Bananas, 4@8.

Blackberries, ch., 7.00@9.00.

Cantaloupes: Cr., 2.00@2.50; pony cr., 1.25@1.75; flats, 90@1.10; Honey Dew, 1.50@1.75 cr.; Casabas, lb., 5.

Cherries: 1.00@1.50 per tray and



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Bethlehem owners are sure of the highest market price on their perishable produce. Via Bethlehem means on time always.

Bethlehem Dependable Delivery has solved thousands of farm transportation problems for thousands of owners. All the power of the enduringly economical engine is delivered to the rear wheels by Internal Gear Drive. Electric Starting and Lighting means economy of operation and makes night work safe and practical. The nearest Bethlehem Dealer will give you a convincing demonstration of Bethlehem Superiority.

1½ ton chassis	2½ ton chassis	3½ ton chassis
$1965	$2365	$3465

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BETHLEHEM

INTERNAL GEAR DRIVE

MOTOR★TRUCKS

DEPENDABLE DELIVERY

BETHLEHEM MOTORS CORPN. ALLENTOWN, PA.

drawer; bulk, black, 14@20; do, white, 9@14; Royal Anne, 10@13 lb.

Figs, 75@1.00 bx.; Brunswick, 75@1.00; whitcs, 75@1.00, 30 lb. bx.

Grapcs—Thompson seedless, 1.25@2.00 per box of 25 lbs.: Malaga, 2.00@2.50 L. A. lug.

Gooseberries, ch., 7.00; lb., 6@8.

Loganberries, ch., 7.00@10.00.

Nectarincs, 1.25@1.50 bx.

Peaches: Sacramento, 65@1.25 cr.; bx., 50@1.50.

Pears, bx., 1.25@2.00.

Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simonl, 1.00@1.50; Santa Rosa, 1.25.

Pineapples, doz., 2.00@5.00.

Raspberrles, cr., Los Angeles, 2.00@2.50; ch., 12.00@14.00.

Strawberrles: Ch., 15.00@16.00.

Watermelons, lb., 2@2½.

DRIED FRUITS

Price to growers:

Apples: 14@16.

Apricots: Opening prices on 1919 dried apricots to the trade:

Sunswcet Quality: Ch., 25; extra ch., 26; fy., 27; extra fy., 29; fy. Moorparks, 29; extra fy., Moorparks, 32.

Growers Brand Quality: Ch., 24½; extra ch., 25½; fy., 26½.

First Quality: Standards, 19; slabs, 21. Other grades on sample.

Peaches: Packers' quotations, basis price: Standard yellow, 16; Muir, 16¼; ch. yellow, 16½; Muir, 16¾; extra fy. yellow, 17, Muir 17½; fy. yellow, 18¼; Muir, 18¾; extra fy. yellow, 19½; Muir, 20½.

Pears, 16@18.

Figs: Calimyrnas, 18@20; Mission, 11@13; Adriatic, 12@15.

Prunes: Packers' quotations basis price: 30-40s, 19; 40-50s, 17; 50-60s, 14½; 60-70s, 13½; 70-80s, 13; 80-90s, 12¾; 90-100s, 12½; 100-120s, and 120s up, no price quoted.

BEANS

Demand and movement moderate, market steady. Carloads f. o. b. usual terms, small Whites, sacked 6.75; Red Mexican, sacked 5.00; Black Eye, sacked 4.50.

GRAIN AND FEEDS

Barley, (1918 crop): Feed, 2.55@2.60 per cental; shipping, 2.65@2.70 f. o. b. Port Costa; new feed, 2.45@2.55.

Oats: Red feed, 2.20@2.40 per cental.

Corn: California yellow, 3.15@3.40 per cental. Egyptian, 2.75@3.25; Milo maize, 2.50@3.00.

Rye: 3.65@3.75.

Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of July 12, Scott, Magner & Miller says:

Receipts past week 2141 tons; for the time between June 28 and July 3, 1123 tons. Since the Fourth of July, as is usually the case, receipts have commenced to increase very rapidly. To offset this increase in receipts business usually increases on account of large feeders laying in their winter supply at this time. Although the new crop is on a basis considerably lower than old crop hay, yet it is bringing fair prices. No. 1 Red Oat and also Wheat Hay is now arriving and orders are being filled without delay. Last year at this time the government was using in the neighborhood of 9000 tons of hay per month for their various encampments. At this time, however, it is only using about 1500 tons per month. As the government purchases were the principal business last year it would naturally be figured that trade should be quite dull. The interior trade, however, has been very fair.

Alfalfa seems to be the best seller, much being moved to interior points. Prices remain about the same as heretofore with our lower range of prices being the more popular and a downward tendency and feeling. Straw is nominal.

We quote today wholesale prices in carload lots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5 wire bales)	17.50@18.00
No. 1 Wheat or Wheat and Oat hay	15.00@17.00
No. 2 Wheat or Wheat and Oat hay	12.00@14.00
Choice Tame Oat hay	15.00@17.00
Other Tame Oat hay	12.00@14.00
Wild Oat hay	10.00@12.00
Barley hay	11.00@13.00
Alfalfa hay	14.00@16.00
Stock hay	9.00@11.00
No. 1 Barley straw, bale	.50@ .80

Citrus Markets

Los Angeles, July 16, 1919.

Weather conditions have been unfavorable to the disposal of oranges, likewise market has been filled with local grown fruits and cantaloupes.

Lemons are likewise in less demand and the price is somewhat off.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California; oranges 26,993 cars, lemons 7642, total 34,635. To same date last season; oranges 11,842, lemons 4819, total 1603. Central California this season; oranges 4422, lemons 354, total 4776. Last season to same date; oranges 2539, lemons 115, total 2654. Northern California; oranges 244, lemons 2; last year same date, oranges 203.

AT THE AUCTIONS

July 9

New York: Val. 2.40-6.75, grapefruit 2.25-3.55, lem. 2.25-6.00.

Philadelphia: 7 or., 4 lem. Lower. Val. 3.35-5.35, Sweets. 2.40-3.45, lem. 3.95-5.75.

Boston: 15 or., 8 lem. Val, 2.60-4.90, lem. 4.95-6.35.

St. Louis: 5 or., 5 lem. Val. 4.50-5.50, lem. 3.30-6.50, lemonettes 3.50-4.95.

Pittsburg: 9 or., 5 lem. Val. 3.75-6.00, lem. 2.80-5.90.

Cleveland: 4 or., 4 lem. Val. 3.45-5.25, lem. 2.85-6.00.

July 10

New York: 32 or., 5 lem. Val. 2.50-5.70, lem. 2.05-5.75, grapefruit halves 1.85-2.10.

Boston: 12 or., 8 lem. Val. 2.25-5.10, lem. 3.55-6.40.

Pittsburg: 7 or., 2 lem. Val. 2.90-6.00, lem. 3.30-5.20.

July 11

New York: 21 or., 2 lem. Val. 2.60-5.85, Sweets. 2.60-4.10, grapefruit 4.75, lem. 1.65-5.70.

Boston: Val. 2.70-4.90, lem. 2.65-6.30.

Cleveland: 4 or., 3 lem. Val. 1.85-4.95, Mikes. 1.65-3.75, lem. 2.15-4.20.

St. Louis: 6 or., 6 lem. Val. 3.75-5.30, lem. 3-10-5.75.

Philadelphia: 4 or., 1 lem. Val. 3.80-5.50, grapefruit 1.55-2.55, lem. 3.75-4.65.

Cincinnati: 2 or., 4 lem. Val. 3.55-4.90, lem. 2.10-5.70.

Pittsburg: 2 or., 3 lem. Val. 4.25-5.25, lem. 2.20-5.85.

MARKET NOTES

The Bellflower crop of the Watsonville district will be very much heavier than last year. The entire apple output will probably total 2,750,000 boxes.

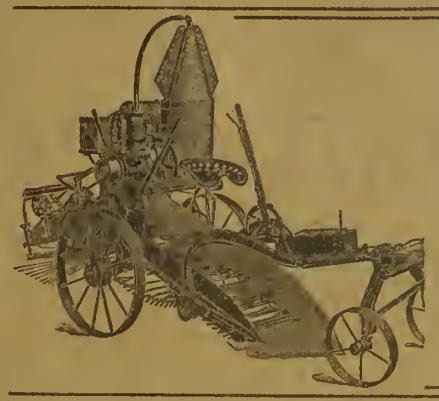
The dried apple output of the Watsonville district will amount to about 4000 tons; of the Sebastopol district, about 3500 tons.

California's apple crop last year exceeded that of Oregon by more than 1,000,000 boxes; it is estimated that Oregon will lead this year by some 300,000 boxes.

WEATHER REPORT

San Francisco, California, July 12, 1919.

Stations	Rainfall Wk.	Rainfall Season.	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.00	.00	.08	62	50
Red Bluff	.00	.00	.00	104	52
Sacramento	.00	.09	.00	104	56
San Francisco	.00	.01	.00	78	50
San Jose	.00	.00	.00	96	46
Fresno	.00	.00	.00	106	64
San Luis Obispo	.00	.00	.01	90	48
Los Angeles	.00	.00	.00	86	58
San Diego	.00	.00	.00	78	60



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It reduces the team so lessens the strain on machine.

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Factory Representative
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The Tractor to Buy

ARE you one of the many farmers who need more power to handle the farm work properly? Do you have to work with less help than you need?

If so, you need an International kerosene tractor. The size that gives you power for your heaviest load will handle all the work. Internationals use only as much fuel as the load requires. They are made to work with farm machines—the kind you are now using—and special hitches are provided for all kinds of field and road work. Their belt pulleys are large enough to prevent slippage, run at correct speed, and are set high enough to keep the belt off the ground. They all use kerosene or other low-grade fuels which means a big saving in operating expense.

The Company to Buy From

You know that we have supplied farmers with high-grade machines for nearly 88 years. You know that our tractors have furnished satisfactory farm power for more than 12 years. We have far too much at stake to market machines of any but the highest standards of quality. We expect to come back some day and sell you some other machines in the long list you see in this advertisement. In every sale we try to build for the future.

Tractor Service Whenever Needed

In line with this policy, we have developed a service organization which now consists of 89 branch houses and many thousands of loyal local dealers, wide awake and attentive to the needs of their customers. Service is a very essential part of any tractor sale. When you buy an International kerosene tractor you buy with it the assistance of an organization that brings a well stocked branch house or a live, local dealer within telephone call, fully equipped to keep your tractor working steadily.

International Tractor Sizes

International tractors, all using kerosene for fuel, are made in 8-16, 10-20, and 15-30 H. P. sizes. A line to the address below will bring you full information about all our tractors and about any other machines you mention in the list shown in this advertisement.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders Push Binders
Headers Rice Binders
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Reapers Shockers
Threshers

Tillage Implements
Disk Harrows Cultivators
Tractor Harrows
Spring-Tooth Harrows
Peg-Tooth Harrows
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Planting & Seeding Machines
Corn Planters Corn Drills
Grain Drills
Broadcast Seeders
Alfalfa & Grass Seed Drills
Fertilizer & Lime Sowers

Haying Machines
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Sweep Rakes Stackers
Combination Sweep Rakes and Stackers
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Bunchers

Belt Machines
Ensilage Cutters
Huskers and Shredders
Corn Shellers Threshers
Hay Presses
Stone Burr Mills

Belt Machines—Cont.
Cream Separators
Feed Grinders

Power Machines
Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
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Cultivators
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Dairy Equipment
Cream Separators (Hand)
Cream Separators (Belted)
Kerosene Engines
Gasoline Engines
Motor Trucks

Other Farm Equipment
Manure Spreaders
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Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
Tractor Hitches
Binder Twine

International Harvester Company of America
(Incorporated)
CHICAGO U S A

Important To All Tire Users!

MATERIAL COSTS and increased production make possible price reductions that benefit ALL TIRE USERS.

LARGE, STURDY, CLEAN-CUT, and good-looking tires, those that deliver excess mileage are what all Motorists want.

FISK TIRES have all these qualities.

DEALERS AND USERS recognize their value—ever increasing demand shows satisfaction.

Compare these New Prices with the Product

Fabric Non-Skid Casing		Red Top Non-Skid Casing		Cord Non-Skid Casing		Tubes to fit any make of Casing	
SIZE	PRICE	SIZE	PRICE	SIZE	PRICE	SIZE	PRICE
30 x 3½	$19.15	30 x 3½	$25.75	32 x 3½	$36.90	30 x 3½	$3.65
32 x 3½	22.40	32 x 3½	28.90	32 x 4	46.85	32 x 3½	3.95
31 x 4	29.95	31 x 4	34.30	33 x 4	48.05	31 x 4	4.50
32 x 4	30.55	32 x 4	36.00	34 x 4½	55.70	32 x 4	4.80
33 x 4	31.95	34 x 4½	48.65	35 x 5	69.15	33 x 4	4.80
34 x 4½	43.35					34 x 4½	6.60
35 x 5	53.25					35 x 5	7.70

Other Sizes Reduced Proportionately

For Sale by all Dealers *Next Time*—**BUY FISK**

FISK TIRES

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — July 26, 1919 — No. 4

Showing the World What 600,000 Already Knew

OVERLAND Model 90 is a car of practical utility. It rides with luxurious comfort, and is amply powered for steep hills and rough roads. It gives service that you can depend upon under all conditions.

At the same time, Model 90 has the appearance which is a source of satisfaction to its owner.

The dependability of Model 90 is illustrated forcibly by four recent records, made in widely separated parts of the country and under greatly varying conditions.

In Oklahoma, a Model 90 stock car, motor sealed in *high gear*—broke the world's record, making 4370 miles in 7 days and 7 nights of continuous running.

Again on an informal test trip between Oakland and Los Angeles, a Model 90 covered 947 miles in 28 hours and 45 minutes, averaging 24.28 miles per gallon of gasoline in spite of fighting a heavy storm all the way.

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Then came the new World's record at Harrisburg—702.5 miles a day for 5¼ days without motor stop, sealed *high gear*. Here again a Model 90 stock car demonstrated its staying power.

Such convincing tests are only conspicuous examples of what thousands of Overland owners know their own cars are capable of doing.

Their experience is a safe guide for you in selecting a car.

WILLYS-OVERLAND INC., TOLEDO, OHIO

Model Ninety, Five Passenger Touring Car $985; Price f. o. b. Toledo

Willys-Knight Touring Cars, Coupes, Limousines; Overland Motor Cars and Light Commercial Cars

Canadian Factory, West Toronto, Canada

California Cultivator

Vol. LIII, No. 4 Los Angeles, July 26, 1919 One Dollar Yearly

Why is the June Drop?

By Many Subscribers

THERE is a proverb applying to the type of questions which may be asked of the wise man and which the wise man may not always answer. The pioneer in any industry always has a liberal number of these questions to ask, and the wisdom of our experts and scientific men of our experiment stations and universities, even of the practical hard-headed farmer, is not sufficient to answer. Fruit growers, especially, are raising questions these days. Our theories on pruning have been upset, our methods all along the line, especially as to fumigation and pest control, have materially changed and the wise men of the West are answering only provisionally.

Especially is this true in the matter of June drop. Hence the letter, copy of which is shown above, has gone to several of the citrus subscribers of the Cultivator, and some are already coming back with answer, or, at least, reply. Some of them, Yankee-like, have other questions which they are asking. It's a good time for an experience meeting, and we hope this page this week will lead to other pages in other weeks, with many suggestions which may lead to definite conclusions. Meantime the department of agriculture, the state university, and the state commission of horticulture are uniting in investigations along the same lines. We would not anticipate any of their findings, and the questions asked in above letter are with the purpose of stimulating thought and inducing our fruit growers to be ready for such suggestions as our scientific people may give us.

> Questions are coming to this office as to "June drop". Of course it is the same ever recuring question, but as old as it is we are unable to give the answer desired as to how to prevent. Possibly no one has any absolute and final information, but we may at least every year gather some information if we can get together some observations from practical growers.
>
> Has the drop been more serious this year than in former years? Why?
>
> Did you endeavor to control by:
>
> Mulching?
> Summer cover crop?
> Irrigation; if so, when?
> Pruning; when?
> Quick acting fertilizers or other soil treatment?
>
> Did you plow or irrigate at blossoming time? Does such treatment cause or prevent setting or dropping?
>
> Please give us from your observations any other points which may be of interest to citrus growers along lines indicated by the questions above.

One of the first answers to come back was from a Butte County grower,

E. W. Fogg, Oroville, Butte County

Question: Has the navel drop been more serious this year than in former years?

Answer: Yes.

Q.: Why?

A.: That is exactly what we want to know.

Q.: How did you endeavor to control?

A.: By planting cover crop of Black-eye beans. Did not get them in early enough is our belief. Formerly have relied on irrigation and early pruning. Have used ground sheep manure and cow manure ground. Should act quickly we are told.

Q.: Did you plow or irrigate at blossoming time?

A.: Plowed before and irrigated before.

Q.: Does such treatment cause or prevent setting or dropping?

A.: Perhaps age of trees may be responsible, still we know of like age orchards having good crops in same section, but with cover crop. We are told that alfalfa for a cover crop is the thing. We intend to try it.

* * *

The next answer comes from a citrus growing section nearly 600 miles farther south. Is is from

Geo. W. Waterbury, Corona, Riverside County

One assertion about the navel orange we all agree upon: it doesn't overbear. The lemon tree will sometimes produce too much fruit one year and lay off the next; the bloods that yield heavily one season will probably have a lighter yield the next, and many varieties of deciduous fruits will overproduce unless thinned. But our navel trees take care of their own thinning, and rather too thoroughly in the orchardist's opinion.

Conditions in the interior sections of the citrus belt have been most unfavorable during the past six months for a large set of oranges and lemons. The weather during the winter months was very dry and cold. The rainfall in some sections was the lowest in many years. The spring was cool, rainless and with considerable fog, followed in June by a sudden rise in temperature and very low humidity. It is no wonder that weak navel trees have again dropped most of their young fruit, the best holding on to but a modest portion.

Climatic condition at the time the young fruit is setting is perhaps a controlling factor in the drop. Heat does not play as important a part as moisture in the air; it is lack of humidity that does the damage. I spent one winter in the South Sea islands, where the temperature ranged higher every day than in Riverside County, yet so full of moisture was the air that all vegetation grew with the utmost perfection.

Conditions during the spring months are even more intensified in Tulare County than in Riverside and San Bernardino Counties, and it is a well known fact that the navel tree is a shy bearer in that section on those years when early spring months are hot and dry.

The set of fruit on the navel tree is largely governed, in a comparative way, by the vigor and vitality of the tree itself. I have never seen anything done during a single year that seemed to influence the fruit crop very much during that period. It is rather a matter of good judgment and big financial expenditures over a period of years. If an orchard has deteriorated for three years it seems to be about an equal time in recovering. The mulching system and basin system, in practical orchard work, has not proven a success, and summer cover crops, for most of us, are out of the question, owing to the lack of unlimited irrigating water.

Most orchardists work the soil fairly well, but few prune properly or fertilize well. The killing of the scale is by many prolonged too much, thus devitalizing the trees and making them unable to hold much young fruit during the ensuing spring. Our problem seems to be in doing well the things we know, or should know how to do, rather than in uncertain experimentation. This is the province of the experimental station men and they know that the gathering of a few truths from the realm of the unknown is the work not of months, but of a lifetime.

The most successful orchardists seem to be those who have not been the first to fly to a new and untried system nor the last to adopt for practical purposes one that has been demonstrated to be beneficial beyond all doubt.

* * *

Los Angeles County likewise has had its drop. From that county we have a short communication by the manager of what was once termed the largest navel orange grove in the world. He has been in entire charge of this property for nearly a quarter of a century and his observations are of value. It may be noted, however, that he does not assign to any one cause this drop of oranges, and the sensible suggestion he gives is to have our oranges in the best of producing conditions at all times. Here is his own statement:

Frank L. Palmer, North Pomona, Los Angeles County

As to the "June drop" of the orange, I think we all agree that it is a purely natural process, and it is only when the drop is excessive that we attach any importance to it.

Under normal conditions of temperature, I think the setting and holding of the fruit may be very materially influenced by general good care of the orchard, particularly by observing proper cultural conditions and by keeping the trees well supplied with moisture during the spring months. To this should be added early spraying with lime-sulphur spray if the trees are infested with red spider or thrips.

I have never discovered any fertilizing formula that will make the little orangcs "stick" if proper irrigation and good culture have been neglected.

These remarks refer, as stated above, to seasons of normal conditions of temperature. In June of 1917 we experienced a hot wave that gave for several days a temperature much above normal, and which resulted in loss of a large percentage of the navel crop.

This excessive "June drop" of 1917 has been a subject of special study by some of the experts of the experiment station, and their findings have been widely published.

I feel sure that laymen will do well to study their findings and to follow their suggestions and advice.

My own observations lead me to believe that the trees which had the greatest abundance of soil moisture to draw upon during that critical period of heat were the trees that matured the largest crops of fruit that season.

I advocate and practice early spring irrigation, particularly if the spring rains are light.

And I am also convinced that summer cover crops will exercise a marked influence for good. Unquestionably such crops call for an unusually abundant irrigation supply and are not generally feasible on that account. Orchardists who own a sufficient supply of water to successfully grow a summer cover crop must be voted among the fortunate and favored ones.

* * *

Ventura grows but few navel oranges. However, we have from

C. C. Teague, Santa Paula, Ventura County:

We do not grow any oranges at all. We are exclusively engaged in the production of lemons so far as citrus production is concerned.

Our experience this year in regard to lemons is not much different from that of former years. We have all the lemons on the trees at this time of year that we care for, as we rather prefer not to have a spring set that is too heavy, but would rather have the crop set along throughout the summer and fall months, which gives us more summer lemons.

* * *

Englehart's lemon pruning system has been referred to and studied for years. Mr. Englehart is one of California's for-sure pioneers, and he has not only studied lemon pruning but all the problems concerned with citrus culture. His ideas on lemon drop, three of which he gives, will be of wide interest:

J. P. Englehart, Glendora, Los Angeles County

Both navel and lemon June drop have been unusually serious this year. Observation on my trees leads me to think that the fruit bearing branches were not hardened enough to withstand the sudden great change in temperature. Owing to the scarcity of potash, we dispensed with our usual custom of applying occasional doses of potash during the year. Probably our soil contains as much potash as the trees need, but it certainly is not

Continued on Page 90

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, July 26, 1919

OUR ADVERTISERS RELIABLE
We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

June drop is being more earnestly discussed than for some months. It may be recalled that two years ago the June drop was more serious than ever before in the history of the industry. Last year, again, we had a good crop. Now comes another serious drop though nothing in comparison with two years ago. There have been many inquiries as to the cause of this drop and many theories advanced to account for it. There are some growers, however, who have no theories to offer, but contribute to the discussion only a big question mark. We have asked a number of experienced growers for their opinions and they are given on the third and later pages of this issue. The cover cut, however, is a normal Washington Navel tree which should bear large and regular crops if the conditions can be made right on those June days when the heat rises above normal.

JUNE DROP

The practical suggestions given in the various articles which begin on Page 3 of this issue will result, we believe, in material increase in another year's crop of Washington Navels.

Large investment is roquired to bring an orange grove to bearing. When this has boen made and the little fruit is setting, and all from the size of peas to the size of hickory nuts begin to rattle from the branches like hail, it brings a sickening feeling to the heart of the orango grove owner. He stands helpless and asks: "Why?"

None of our subscribers pretends to answer this pertinent question though everyone of them has suggestions which are of value. In the main they center around this one thought that every step which makes for healthiest and best conditions of soil and tree gives advantage to the tree when its testing time comes. It is not in superabundance of water; neither is it in application of fertilizers; neither is it in the best and most thorough tilth of the soil; nor yet in pruning, scale eradication nor any other one step; but a combination of all certainly gives some insurance.

EXPENSIVE SMOKES

The forest service reports the fining of two men $50 each because they carelessly threw away cigarette stubs which caused serious field fires. Smoking is necessary to the happiness of some people, but in the dried tinder sections of field and forest at this period of the year there is opportunity for a little self control which will add to the wealth of the state.

PRESIDENT WHEELER RETIRES

President Benjamin Ide Wheeler of the University of California, formally closed his desk on the evening of July 15 and became president emeritus and professor of comparative philology. President Wheeler has served a score of years at the head of California's great educational institution and has seen wonderful advancement in its work and in the attendance.

W. S. S.

The Uniter States treasury has announced that the war savings stamp campaign will be continued indefinitely. This means that the wonderful savings bank opportunity where four per cent may be secured, with money available at all times, is to be extended to the people. In addition there are now to be issued big brothers to the war savings stamps in war savings certificates. These will be issued in $100 and $1000 denominations and may be purchased at first and second class post offices. That is, as to the $100 certificates; the $1000 certificates may be secured only through banks and trust companies. These are all registered securities.

ADVANCING EDUCATION

It is gratifying to know that the state university summer session—rather sessions, for there are now two held, one in Berkeley and one in Los Angeles—are attracting greater numbers of attendants than any preceding year. In the two schools there aro 4075 attendants. The greater number of these are at Berkeley, Los Angeles having this year 885, an increase of 40 per cent over last year, which was the first session held in the south. The Los Angeles branch of the state university now promises to become a great educational institution. It will occupy the site of the former statc normal school which has become a part of tho state university.

One of the most gratifying fcatures of these schools is tho great dèmand for opportunities for agricultural cducation. Dean Hunt of the agricultural college is delivering a series of lectures on agriculture in Europo at the southern sessions this week.

CONTROL PACKING INDUSTRY

The people of the country are becoming concerned as to the grip on the American food supply secured by the so-called packing house trust. This has caused the presenting of a bill in congress known as the Kenyon bill, Senate 2202, which provided that concerns engaged in slaughtering live stock, preparing live stock products for sale, marketing live stock produce, conducting and operating stockyards, collecting or distributing live stock quotations, buying, selling or shipping dairy products, in excess of $500,000 a year, shall secure license from the secretary of the treasury.

The federal trade commission has made extended investigations of the American food situation and is now giving warning to the people that it is of greatest importance that it be brought under national control.

AN INHERITANCE

Among others to whom the Cultivator wrote asking questions as to causes of June drop was that veteran orange grower of Riverside, James H. Reed. Mr. Reed replied that at 86 he was not entering very largely into cultural operations so turned the question over to his son. We are sorry to release from the task of inspiring others to better cultural methods one of Mr. Reed's abilities, but he has earned a rich reward in the rest he is taking these days, and we take this occasion to remind him that he should enjoy them to the fullest with the consciousness that "The father's virtues are the son's inheritance." Therein Mr. Reed has great estate. We hope we may yet hear from him in response to the many questions that still come up before California's fruit growers.

EDWARD W. MASLIN

When the fig industry was young the inquiry was frequent: "Why can I not produce figs on my imported Smyrnas?" and soon the answer suggested itself that it was because of variety, so Asia Minor was searched for the proper variety and a great number of cuttings brought to California. Amongst the largest planters of these cutting was E. W. Maslin who had at that time an orchard near Loomis in Placer County. He stuck some of those cuttings among the great boulders which are so common in that section, and the rich soil gave a wonderful growth of tree. But the trees refused to bear, or rather before the fruit had attained a third or fourth of its mature size it dropped off.

The search for the reason is a long, long story and, as all our readers know, resulted in the finding of the blastophaga, or insect which fertilized the blossoms of the true Smyrna fig and made the industry one of California's most promising.

Mr. Maslin was not only a pioneer; he was a persistent pioneer, for when his trees refused to bring their fruit to maturity he kept them growing. Today that orchard which Mr. Maslin planted is one of the foundation stones of the industry. There are many varieties of the original Smyrna figs in the orchard and the more desirable of these are being used in reproducing other orchards.

Mr. Maslin has now passed; he died at his home in San Francisco a few weeks ago. The orchard which ho plantcd remains, and the industry will long remain as a monument to his work for California.

AUTO GRAPHS

Wonderfully rich lands at Stockton. It's where the dryer stretches of the plains meet the richer, moisture filled lands of the San Joaquin. The grain is tall and the heads wonderfully plump and well filled.

* * *

Almost the first sight of Stockton's manufacturing district was that of the smokestacks of the big tractor factories. Some of America's first tractors were manufactured in Stockton. We recall many years ago a trip through one of the factories there when the big horse drawn combined harvesters were the principal product. Today there are still many combined machines being produced, but the chief energies of two great factories in that city are given over to tractor manufacture. They have proven wonderful aids in times of peace; equally so in times of war.

* * *

The fair grounds at Sacramento are already taking on new life in preparation for the coming state fair. The great central, or horticultural, building which last year was less than half completed is now ready for exhibits from one end to the other. The great central dome makes it an imposing structure.

* * *

Crossing over the Sacramento river from the business district of the city of Sacramento one takes but a few minutes drive until he is on the great causeway connecting Sacramento with the rich farming sections of Yolo County. It's a wonderful piece of road making and, paralelling the Southern Pacific as it does, makes good advertising of California's road system.

* * *

Just beyond the western end of the causeway is the University Farm. We used to think the dilapidated surroundings of this farm indicated that a serious mistake had been made in locating it. It looks different today, and the town of Davis is showing some public spirit and really becoming proud of "our farm."

* * *

The University Farm is worth being proud of. It is not only affording the means for teaching the young agricultural idea how to shoot, but some of the older ideas how to correct their aim. The University Farm is a practical example of California agriculture on the job. There are now something like 1000 acres in this great property. There are vineyards; there are orchards; there are green fields; alfalfa patches; poultry demonstration yards and buildings; silos; dairy barns; piggeries; demonstrations of irrigation appliances; in fact, pretty nearly everything concerned in the diverse agriculture of California. That there is diversity in this state is plain to every agriculturist. In the orchards are plots which have been given over to pruning of trees according to almost every theory of pruning, and these demonstrations are proving some things, for the trees are now nearly a dozen years old, and there are enough of them to show general character as a result of continued methods of work.

* * *

We had the pleasure of a look-in on a bunch of steers. Alex McDonald is doing the feeding. Prof. True is busy and away these days. He has been over at the Islands judging live stock at the territorial fair. When he came home they promptly put him to work pulling off a great San Francisco live stock show. In his absence J. I. Thompson becomes acting professor of animal husbandry and head of the department, and True has nothing on Thompson when it comes to enthusiasm. We have no predictions to make as to that pen of steers, but we are hoping some of them will take a Pullman trip to the International at Chicago this coming December and continue the string of honors which has come to California from that great show.

* * *

Unloading hay is not particularly thrilling. However, it was with a good deal of satisfaction that I noted the way in which a great big load of grain hay was put in the loft of the horse barn in some three or four forkfuls. The University Farm barns are not put up along tho nickel plated line, but they are practical, and the ease with which the big Percheron handled the hay fork and the big load of hay was sufficient to give quite a thrill.

Growing of Alfalfa Important in Arizona

By M. E. Bemis

ALFALFA continues to be the one most important crop to farmers in Arizona and particularly in the Salt River Valley. For the benefit of Cultivator readers I present here some figures showing the acreage value and the value as fed to animals on the farms. These figures were compiled and checked from various sources and are as near accurate, I believe, as it is possible for any estimate to be.

The total irrigated area of Maricopa County is 296,500 acres. Of this, 120,000 acres is in alfalfa, 85,000 acres is used for making hay, 3000 acres for seed production, and the balance is pastured. The total revenue from alfalfa is $7,110,000. Two-thirds of this is fed to livestock on the farms of the valley and brings an additional revenue of nearly $2,000,000.

Revenue From Live Stock
Maricopa County

35,100,000 pounds of milk for the retail trade	$1,404,000
46,800,000 pounds of milk for condensing and ice cream	1,146,000
74,100,000 pounds of milk for butter and cheese	1,556,000
28,000 head annual increase	1,680,000
	$5,786,000
50,000 head of beef cattle fed annually—net gain	$2,500,000
50,000 head of sheep—annual gain	250,000
20,000 head of hogs—marketed annually	400,000
Bees—annual revenue	127,500
300,000 head chickens—annual revenue	780,000
Other fowls—annual revenue	30,000
	$4,087,500
Total annual revenue from live stock	$9,873,500

Alfalfa is as old as civilization itself. Lost in the maze of myths and legends the origin of this wonderful plant will ever remain a mystery but its value to the human race increases as the world grows older. No other plant can compare with it; it is the nearest balanced ration of any single plant known; in yields of animal nutrients at a low cost of production it is unequaled.

Scientists have found by analysis of soils and soil products, by careful experiments and painstaking observations that which some farmers learned long ago — namely, that the basis of good sound farming, that which produces the most valuable food for live stock and impoverishes the land least is the growing of legumes. The eastern farmer had his red clover, and the southern planter his cow peas, but each knew that the king of all legumes is alfalfa. All over the country from Canada to Mexico, from the Atlantic to the Pacific, progressive farmers are bending every effort to grow alfalfa, but in no section of the United States does alfalfa do as well as in the arid lands where there is water for irrigation. Here the land is naturally rich in lime, potash and phosphorus, and the alfalfa draws from the atmosphere its own nitrogen.

The Natural Home of Alfalfa

Here there is no tedious and expensive preparation of the land necessary, no fertilizing, no liming, no inoculating the seed. All that is necessary is to level the desert land, thoroughly prepare the ground, irrigate and sow the seed, harrowing it in lightly. While alfalfa seems to find its natural home anywhere in the arid Southwest, the soil, climate and elevation of the Salt River Valley of Arizona seems to be in all things ideal for the cultivation of alfalfa. Dr. Freeman, in his bulletin, "Alfalfa in the Southwest," says that he finds no mention of alfalfa in the early history of the valley, and he reasons that the development of the plant here has been almost entirely in the last 35 years.

The following letter from County Agricultural Agent H. C. Heard shows the average cost of preparing the land for alfalfa and the cost of making alfalfa hay:

Estimates of costs of seeding: Plowing, $6.00; disking, harrowing, leveling, $4.00; two irrigations, $2.00; 15 pounds seed at 16 cents (common) or 38 cents (Hairy Peruvian) $2.40, or $5.70; total $17.70.

"My estimate of the cost of raising and harvesting one crop is as follows: Two irrigations, $1.50; mowing and raking, $1.25; cocking, $1.50; hauling and stacking, $1.75; rent or interest, $4.00; total, $10.00.

"In interpreting, please bear in mind that they were figured on the basis of seven cuttings per year, which, if not pastured in winter, should yield about eight tons per acre. Of course much alfalfa in the valley does not yield this high, but productive possibilities are indicated by an authenticated yield of ten tons per acre per year for four consecutive years."

Yields

From the first year's seeding yields of six tons are on record, possibly this is better than the average, as the first year's crop is not commonly expected to be as much as after it has reached maturity. The second year yields of six to ten tons may be produced by careful management and in addition considerable winter pasturage.

Practice of Dairymen

With the large number of dairy cows in the county there is of course necessity for much pasture, and most dairymen are following a plan somewhat similar to the one mentioned in Dr. Clothier's report of farms of Southern Arizona. Some have practiced a soiling system, or cutting the alfalfa green and feeding it to the cattle in racks. This results in increasing the carrying capacity of the alfalfa fields about 100 per cent. In other words, the same farm will carry nearly double the stock where the alfalfa is cut green and hauled to them that it will where it is pastured. This, however, is where the fields are large and not where a system such as Dr. Clothier describes is followed. The extraordinary amount of labor required for cutting and hauling the alfalfa green has made this system one which is not practicable except when labor can be had at fairly low rates or where hay is very high.

The following letter from State Dairy Commissioner W. A. Barr shows the value of alfalfa when fed to dairy cows. It might be mentioned that the average price of butter fat for the past year has been above 60 cents a pound:

"In determining the cost of milk production at the present time and from that, the value of hay, the Warren and the Pierson formulas were used, applying the same to conditions locally. These formulas state that 32 pounds of grain, 70 pounds of hay and 110 pounds of silage are required to produce 100 pounds of milk. A ration consisting of bran, barley and cotton seed meal at current quotations, and on the basis of five to eight pounds of grain per day per cow, gives an average valuation of $55.00 per ton for grain. Silage by our conservative stockmen is given a rating of $10.00 per ton. An arbitrary value of $20.00 per ton was placed on hay. Under local conditions, about 1 1-3 hours of labor is required to produce 100 pounds of milk. Labor at 30 cents per hour, grain, hay and silage at the figures mentioned and the amounts required to produce 100 pounds of milk gives a total cost of $2.48.

"To produce 100 pounds of milk averaging 3.6 per cent butter fat, this is equivalent to a valuation of 68 cents per pound butter fat. When butter fat is worth 60 cents per pound hay is worth $17.70 per ton, determined on the basis above used. When butter fat is worth 75 cents per pound hay has a valuation of $22.00 per ton. Hay, when fed alone, has a lesser value per ton than when fed in conjunction with grains and succulent feeds. Experimental data show hay to be worth approximately 75 per cent when constituting the dairy cow ration, of what it is worth when fed in conjunction with other feeds. On the basis of a hay consumption of approximately 32 pounds per day per cow, with a production of 75 per cent, of a cow receiving hay and grain, hay is worth $16 per ton when butter fat is worth 60 cents per pound, and when butter fat is worth 75 cents per pound, is worth $20 per ton, against a value of $22 per ton when fed with grain and silage. The basis of production in this determination has been 5000 pounds of milk per cow per year, or 180 pounds of butter fat, which, from available data, indicates that these figures are approximately ac-

Cont. on Pge. 89

Agricultural News Notes of the Pacific Coast

Northern California

Modoc County hay growers are commanding $25 per ton.

Yuba City, Sutter County, is experiencing an epidemic of hog cholera.

A car of assorted fruits from Vacaville, Solano County, recently sold for $3310.

Sacramento proposes to inaugurate a $10,000,000 building campaign for that city.

Apricot growers at Haywards, Alameda County, have sold apricots at $150 per ton.

A Solano County grain grower reports 2160 sacks of grain from 105 acres of wheat

The state of California maintains free camping grounds on the shores of Lake Tahoe.

The state fair premium list provides for $2250 for premiums for Shorthorn cattle

Members of the California farm bureaus are to be asked to vote on the daylight saving law.

It is estimated that 2000 autos passed through Auburn July 3-5 on the way to Lake Tahoe.

Capitalists are investigating as to possibilities of the Hayfork irrigation district in Trinity County.

For the first time in the history of the state fair it offers no premiums for California produced wines.

Yuba County supervisors have appropriated $2000 for continuance of farm adviser expense in that county.

The forest service is making survey for a road projected from Echo Lake to Glen Alpine Springs, Eldorado County.

Gordon H. True is busy arranging for the great live stock show now definitely scheduled November 1-8 at San Francisco.

Valuations of real estate in Alameda County, according to figures in the county assessor's office, have jumped $12,239,000.

A hundred acre range fire which caused serious losses in Alameda County has been traced to the carelessness of a hunter.

Modoc County voted strong for state highway bonds and in addition gave overwhelming vote for the $400,000 county good roads bonds.

The executive committee of the Placer County farm bureau fair has nearly completed arrangements for the county fair to be held late in August.

Sacramento County rabbit enthusiasts have organized a Northern California Rabbit Breeders' Association. Mrs M. Gammon of Sacramento is secretary.

The fish car of the state fish and game commission recently delivered 100 cases of young rainbow trout to streams near Sonora, Tuolumne County.

Rice growers along the Sacramento have crops in excellent condition; planting was early this year and the growth is three or four weeks in advance of last year.

By enactment of the recent legislature the state railroad commission now exercises a new function in regulating the rates of service for storage of foodstuffs in warehouses.

Central California

Tulare County calls for greatest conservation in use of water.

Tulare County grapefruit crop has been practically all shipped.

Merced County will plant a 4,000 acre peach orchard next season.

Hanford, Kings County, reports almost total failure of honey crop.

The Merritt wage scale calls for eight hour day, 45 cents per hour.

All fruit dealers and grain brokers are now paying special tax of $50 per year.

Parlier, Fresno County, is planning a model community camp for fruit workers.

Toppers at recent hog sale of the Tulare County farm bureau netted to the growers $18.70.

Tulare public auction of fat hogs resulted in sales aggregating $11,160. toppers went for $18.70.

Tulare recently held public sale of mules. 71 sold for $10,600. The topper span went for $565.

The headquarters of the state dairy bureau has been removed from San Francisco to Sacramento.

Several Gilroy, San Benito County, apricot growers dried apricots whole because of labor shortage.

Fishermen along the San Joaquin River have been lucky in landing large numbers of fine salmon.

Tulare County farmers are recommending the use of war flame throwers in the control of grasshoppers.

Salinas, Monterey County, is moving for an agricultural fair and educational exposition to be held in October.

The board of supervisors of Fresno County will soon appoint fruit inspector to have charge of inspection work in fruit packing houses.

The San Joaquin Valley Milk Producers' Association is engaged in a big drive to secure 2,000 members owning over 100,000 cows.

One evaporator recently installed near San Jose dried grapes in best of condition in 12 hours, apricots in six hours, plums in nine hours.

Stockholders of the Visalia creamery have voted to accept the offer of the Valley Milk Producers' Association to purchase their plant.

A large warehouse filled with wheat, together with four cars loaded with wheat on the siding at Los Banos. were destroyed by fire last week.

Commissioner Rutherford of Stanislaus County is organizing systematic war on weeds. Ten inspectors of the county office are directing the campaign.

F. W. Krogh, at the head of large pump manufacturing company of San Francisco, died recently. He was interested in farming properties in Tulare County.

The Farmers' Union at Mountain View, Santa Clara County, is appealing for widening the apron or shoulder of the pavement on the highways of that section.

Tho Vegetable Growers of California Inc. have now paid Santa Clara County growers 75 per cent of tho amount due on last season's tomatoes. Some canners have sued because of non-fulfillment of contracts.

Southern California

Cotton growers are anticipating $60 per ton for seed.

Several canneries have been running day and night on apricots.

San Jacinto, Riverside County, is appealing for the erection of a cannery.

Outlying sections in Orange County are asking for extension of rural free delivery.

Canneries and dry yards are gradually reaching the end of their season on apricots.

Palo Verde Valley is growing dates and will make exhibit at the coming Riverside fair.

Uplands, San Bernardino County, proposes to make clean-up of mealy bug from citrus orchards.

Puente, Los Angeles County, reports its walnut trees as loaded almost to the breaking point.

Prof. Fawcett is giving demonstration before citrus growers in methods of fighting citrus gum disease.

July 14 was annual picnic day in Fairmount Park, Riverside, for the Arlington Poultry Association.

Palo Verde Valley growers are topping their cotton, claiming they get sturdier plants and more bolls.

Santa Paula, Ventura County, says its "Big Four" is made up of the lemon, walnut, apricot, and Lima bean.

Hemet, Riverside County, dairies have been improved by the importation of pure bred Holsteins from Wisconsin.

Practically every fumigator will this year use liquid gas instead of the former cyanide-acid method of generation.

Buyers are offering to contract Palo Verde cotton at 32 cents, the highest price yet offered under contract to Palo Verde growers.

The corn ear worm is making its regular attack on Lima beans in Ventura County. It is feared the damage may be quite serious.

The First National bank of Hemet is offering $300 in prizes for the best apricots and peaches grown in the Hemet-San Jacinto district.

Imperial Valley cantaloupe season proved to be a longer one this year than any preceding year. The total shipments aggregated 7485 cars.

Commissioner Brock of Ventura County reports that fumigation on citrus trees during the fall will be more general than in any former year.

State Dairy Inspector Biles is canvassing San Diego and Imperial Counties urging tuberculin test and other sanitary measures required under state law.

Orange County's sealer of weights and measures has been following hay balers and insisting on correction of weighing abuses which have prevailed for years.

A Ventura County surgeon, called to a far away ranch at Santa Susanna to a boy with a broken arm, made the trip in an airplane. The 30 miles was made in 22 minutes.

Two-thirds of California's walnut crop is grown in Ventura, Los Angeles and Orange Counties. The production for tho present year will be 10,000,000 pounds greater than last year.

The Coast and General

Hood River, Oregon, shipped 98 cars of strawberries.

Hood River, Oregon, county fair will be held September 19, 20.

Vancouver, British Columbia, prices on eggs are now at 55 cents.

Great losses of fruit on New York docks have been caused by strikes.

Colorado potato shippers recently held their annual meeting at Manitou, Colorado.

Canning companies at Portland, Oregon, are offering ten cents per pound for canning cherries.

A conference of the cattle growers and United States forest officials was held at Prescott, Arizona, July 7.

The livestock association of Stevens County, Washington, will hold its annual show at Colville, October 1-3.

The city water main is being extended from Phoenix to the state fair grounds, in order to furnish adequate fire protection.

This is the height of the fishing season from Ketchikan to Nome. Canneries along the coast employ some 20,000 people.

The American Fruit Growers' Inc. has purchased some of the best fruit bearing orchards in the Wenatchee Valley of Washington.

The Kansas-Oklahoma fruit jobbers at a recent meeting made demand that express companies agents must quit handling goods on consignment.

Express companies have refused to handle watermelons from the Waterford district of Texas unless they are crated, and the growers and shippers are in arms because they are not prepared for this method of handling.

The Southwest Cotton Company owning two big plantations of several thousand acres each, 15 and 30 miles respectively from the central office at Phoenix, have purchased a Curtis airplane for the purpose of quicker transportation between the main office and the two plantations.

Seventy-five representative fruit and nut growers, from every important producing district of Oregon, met in Portland and formed the Oregon Growers' Cooperative Association. Its organizers said this is the largest organization of the kind ever attempted in the Northwest. It closely follows the California plan of cooperation.

Professor S. C. Mason of the United States bureau of plant industry, has been investigating the date industry in the Salt River Valley. As a result of his investigation, future plantings will be made at the Salt River Valley experiment farm near Mesa Professor Mason believes that the high altitude of the Mesa farm will be better for date culture than the old Tempe date farm.

The reports of the bureau of crop estimates of the United States department of agriculture show that the acreage of Egyptian cotton in Arizona this year will be about 95,000, of Sea Island cotton about 65,000. The acreage of Sea Island is much less than a year ago. The acreage of Long Staple in California is 2,000 as against 4,000 last year. It is thus apparent that about three-fourths of the American Long Staple cotton will be produced in Arizona this season.

Prune Prices Fixed Upon

THE prune growers have been getting restive and some even more than restive because the association did not name prices as they desired. Some have even violated their contracts and disposed of fruit on the outside. Presumably now they will wish they hadn't. The association now gives prices for the coming season's output in a circular from which we quote:

Prices to be paid California prune growers for their 1919 crop hy the California Prune and Apricot Growers, Inc. which will mean millions of dollars to the farmers of the state, were announced today by the growers cooperative organization which was formed two years ago on a basis controlling 75 per cent of the state's output of prunes.

The growers will be paid a bulk basis price of 13.56 cents per pound. Basis prices according to sizes run: 20-30's 22 cents flat, 30-40's 16 cents 40-50's 14 cents, 50-60's 12 cents, 60-70's 11½ cents, 70-80's 11 cents, 80-90's 11 cents and 90-100's 11 cents. One cent per pound premium will be paid for fruit delivered before Septemher 20. On small sized fruit 8½ cents a pound will be paid for 100-120's and 7½ cents for 120's and up.

These prices, which will bring the grower an average of a little more than 14 cents a pound for his fruit mean that the value of this year's production to the farmers inside the cooperative association will amount to more than $25,000,000. It will be a flood of prosperity such as the fruit growers have never experienced hefore.

In comparison to prices paid by independent packers, who in a bitter fight against the association have been trying for several months to buy crops from the growers before the naming of the association price, the association is paying an average price from four to five cents above the average offered hy the outside interests.

Careful estimates of the early buying done by the independents are that they have paid 9 cents or under for 75 per cent of their purchases and that a 9½ cent bulk basis would he a fair average for all sales made to them hy the outside grower as compared with the 13.56 cents a pound which the association will pay to its memhers. Most of the independent buying was done from 7 to 8½ cents a pound bulk hasis.

The occasional reports of 13½ and 14 cents a pound paid by the independents to the grower, which have been widely advertised among the farmers, include only occasional offerings on the part of the independents for choice lots of fruit, according to H. G. Coykendall, general manager of the association.

Under the price named today hy the association the growers will get an average of 14.22 cents a pound for their crop dried and delivered at the association packing houses located in their district. This amounts to $284.40 a ton. The independent packers have averaged about $190 a ton on purchases made from growers outside the association, who have lost in their gamhle that this price would be higher than the one to be named by the state association.

The high price named by the association and the consequent golden shower which will rain on the growers who turn their crops into the association apparently fully justifies the formation and continued existence of the state wide non profit cooperative organization formed two years ago hy the growers to get for themselves the full benefit of their investments in their orchards and a fair return on their lahor hy stahilizing market conditions and eliminating as far as possible the speculative juggling which resulted with the selling end of their husiness in the hands of private interests.

In announcing prices today it was stated that sales had been made of millions of pounds of prunes during the past few months to wholesale grocers and johbers who had agreed to pay any price named by the association. Scores of orders were turned down and no sales have been made for several weeks it was said hecause the association had sold all the stocks it dared until a more accurate estimate of the size of this year's crop could be made. When sales are again thrown open it will be at an advance over the prices named today according to officials of the association.

H. G. Coykendall, general manager of the association, in announcing price today gave out this statement to the growers:

"The association has justified its existence a hundred times over in the prices sent out today to its members. California prune growers could not have a more convincing proof placed hefore them of the value of cooperation."

Save the Water

MR. GEO. B. MORTIMER, connected with the Wisconsin college of agriculture, makes striking statements in Hoard's Dairyman as to duty of water. This is not so much with reference to irrigation as to natural soil water as it has to do with Eastern crop production, but it is so forceful that we give it entire:

Adopt a plant from its wild state into the family of useful plants and it soon loses many of its undesirahle qualities through proper breeding and selection. Like man, no plant can serve two masters efficiently. Just as its usefulness is enhanced by care and protection, so will its fighting habits disappear in proportion. In fact, the lack of usefulness comhined with fighting qualities is what makes a plant a weed, and the demand which economic plants make upon man for their protection is the price we must pay for their improvement. A weed is a Johnny-on-the-spot, and it takes a Johnny-on-the-spot farmer to comhat it.

It is estimated that our annual corn crop suffers a ten per cent loss due to weeds alone—a loss sustained under normal cultural practices. While the reasons may not be clearly understood why crop yields are reduced by weedy growths, they must center around food, light and moisture supplies, together with an interference of proper root development on the part of the crop heing grown. Undouhtedly, the latter is of greater importance than we are inclined to attach to it.

But whatever the underlying causes may be, it can be said with safety that no one single factor will cut down on corn yields so effectively as to allow weeds to choke the young plants in the hills or rows. The good corn grower never overlooks an opportunity to rid his corn field of weeds. It looks much easier ahout corn planting time to keep the field clean than it does later on when the plants are a foot or more high. But unfortunately this is not the case.

Did it ever occur to you that all the weeds which will appear in the corn field this season are there now either as seeds or biennial and perennial roots? In the case of fall-plowed land that is to he planted with corn much can be done to rid the soil of weeds before the corn is planted. Perhaps no one day's lahor will yield such big returns as the one spent in disking or harrowing up the fall-plowed corn land early in the spring. The opening up of the soil will warm it and allow the air to enter. This will set thousands of weed seeds to germinating, many of which will he brought up from the lower soil depths.

A subsequent harrowing on a sunshiny day will destroy those which have sprouted, accomplishing what cultivations are expected to do—but wherein they often fail. It gets the weeds in the "white stage," before they have done any material damage. Besides, it is much easier to destroy them at this time. But this is only half of the story.

Much of the crop will be made from the water in the depths of the soil, stored there from the winter's

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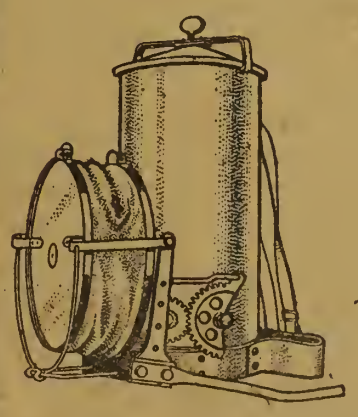

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This gaa is made under our patents granted by the U. S. Patent Office, and our improved methods and enlarged plant, built under epecification of the moet skilled engineers and chemists employed by the American Cyanamid Company, make it poesible to render you the eervice that you will require, and our guarantee is backed by them.

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and spring rains. This is Nature's great plant watering tank. We cannot afford to allow any of it to go to waste, beyond those amounts over which we have no control.

For every pound of dry matter produced, both in stalk and grain, corn needs from 250 to 400 pounds of water. These amounts seem rather large, nevertheless they are the results of scientific investigations made by crop and soil experts. Looking at it in another way, from 18 to 20 tons of water must pass through the plants for every bushel of grain produced. This would mean from 8 to 14 inches of rainfall required by the plants alone to produce a 50-bushel crop, not considering that which is lost through the agencies of evaporation, run-off, and seepage. Furthermore, this amount is largely needed during a comparatively short time—about six weeks in July and August.

It is a much safer plan to conserve the moisture already in the soil than to depend upon the rainfall, which is often too slow in coming—during July and August. Both are needed, but the former is a guarantee against the failure of the latter.

Early harrowing puts a dust mulch on the surface that helps materially in checking the loss of moisture by evaporation. This conserved reservoir may be the means of keeping the crop developing normally during drouthy spells in July and August.

The case of spring plowing is somewhat different, but in principle the same. Newly turned soil, if left exposed to drying winds, will lose much of its moisture. An amount equivalent to two or three inches may very easily be lost in this way.

Since the furrow slices are not turned completely over against the bottom of the furrow, air spaces usually remain between the two. They are bad for several reasons.

First of all, air spaces will not permit of a proper root development. The soil must be in close contact with the roots if they are to grow strong and vigorous. Secondly, unless the soil is in close contact with the turned under organic matter, it will not decay as readily. In other words, its manurial values will be held up. Thirdly and very important, a newly plowed soil does not allow for the natural rise of moisture from the soil beneath or the subsoil. To rise properly the soil particles should be in close contact with each other. This might result in the surface soil becoming too dry, with the consequent failure of seeds to germinate or perhaps the death of the roots of those that do.

All of these dangers may be avoided by a judicious use of the roller and harrow. A roller or compactor which does not leave a smooth surface is very desirable. The soil is not only compacted but a dust mulch is provided to prevent losses of moisture by evaporation.

Spring plowed land for corn should certainly be treated in this way for the reasons already given, while for small grains seeded on spring plowing, compacting the soil is always one of the essential steps in seed bed preparation. Our attention needs to be centered upon the corn crop now if the best results are to be obtained.

New Auction Plan

Notification that all receivers and auction companies in New York have decided to block together in auction catalogs has been received by General Manager Charles E. Virden of the California Fruit Distributors. The details of the plan, outlined in a resolution, are given herewith for the information of growers:

Resolved, that all receivers should block together in all auction catalogs and sell, in lots of not less than 100 packages of cherries, apricots, plums, grapes, peaches and half boxes.

That all receivers should block together in all auction catalogs and sell in lots of not less than 80 packages for all lug boxes and full boxes of pears, apples, quinces, etc.

That all receivers should block together in all auction catalogs and sell in lots not less than 40 packages for all kegs, drums and double crates of grapes.

Each grower's fruit will be assorted separately, but should any individual grower in any car ship a lesser quantity than as above specified, all of his cherries, regardless of variety when less than 100 packages, should be sold as one lot.

All of his plums, regardless of variety, when less than 100 packages, should be sold as one lot.

All of his apricots, regardless of variety, when less than 100 packages, should be sold as one lot.

All of his grapes, regardless of variety, when less than 100 packages, should be sold as one lot.

All of his pears when contained in full boxes and less than 80 packages should be sold as one lot.

All of his lug boxes when less than 80 packages should be sold as one lot.

Also that cars containing deciduous fruit of the same growers' mark of the same size and variety shall be catalogued and assorted as two items only. The bulk of the fruit is one line and the second line containing the top tiers.

When a car of deciduous fruit contains one variety, but of two or more sizes, it is agreed to assort and catalog according to size, providing the lots are not less than 100 crates of peaches, plums, pears, grapes and half boxes, and not less than 80 lug boxes of full boxes and not less than 40 crates, drums and double crates.

The above applies to all varieties of fruit,—regardless of size, sizing, number of tiers when contained in similar packages.

Pears in California

More than half the pears in the United States are grown in California. The present year's crop of the United States is now estimated by the bureau of crop estimates to aggregate 7,691,000 bushels. Of this California will produce 4,000,000 bushels. The next largest pear growing state, which is far below this state in total production, is Washington with 1,560,000 bushels. Oregon follows with only a little over a half million bushels. New York is the largest Eastern pear growing state, with 540,000 bushels. This is much lower than her 1918 production, which was 828,000 bushels. On the other hand the Pacific Coast states are all producing far greater amounts than in 1918. Regarding California's place in pear production the bureau of crop estimates says:

California, which is the most important pear state in the Union, has prospects for almost a full pear crop this year. Attention is called to the fact that only about half the total pear production of California is shipped fresh. Approximately 30 per cent goes to the cannery and 20 per cent is dried. The pear crop for 1919 is now estimated at approximately 4,000,000 bushels as compared with 3,814,000 bushels in 1918. Reduced to tons the 1918 crop was estimated at 54,850 tons shipped fresh, 27,500 tons canned and 13,000 tons dried, or a total of 95,350 tons. It now appears that this year's crop will equal and probably exceed that of 1918.

The same bureau's report on other Coast states is:

Washington

The Yakima Valley, which is the principal pear producing region in the Pacific Northwest, and in which the Bartlett is the leading variety, now promises about 2200 cars of pears, or a 15 to 20 per cent increase over last year. The Wenatchee Valley also has excellent prospects and will ship approximately 600 cars. The Western crop moves almost entirely in bushel boxes.

Oregon

The Rogue River Valley, centering about Medford, which is the leading pear region in Oregon, has prospects

for from 700 to 800 cars of 512 boxes each. Bartletts are particularly well set and all other varieties are fairly well set with the exception of Bosc and Howells. The 1919 crop for this region amounted to about 560 cars. The Hood River Valley, best known for its apples, has a limited acreage of pears and promises about 150 cars in 1919. Quality is reported excellent.

Eastern States

New York, the leading commercial pear state of the East, has really only a third of her crop this year. Compared with the 1917 crop of 1,217,000 bushels, this year's half million bushel crop looks small. Expressed in cars it means that this year's output will be slightly over 1000 cars, while the 1917 output was 2720; Niagara, the leading pear producing county of that state, has only 14 per cent of its normal crop. Missouri seems to be going out of the pear industry for the bureau says:

The commercial pear crop of Missouri is rapidly decreasing. Blight and lack of care is causing considerable loss in trees. Pike and Daviess are the leading commercial pear producing counties. Probably not to exceed 50 cars will be shipped this year. Kieffers are principal variety grown.

SAN DIEGO COUNTY FAIR

San Diego County proposes to have a fair. Secretary Mellinger writes that it has been eleven years since the last San Diego County fair was held in Escondido. The Escondido people have held a grape festival annually for many years on September 9. This will be continued and the newly organized fair will be held at Balboa Park in San Diego and will be a general live stock and agricultural fair.

The work of arranging for this event has been promoted by Farm Adviser Weinland and members of the farm bureaus.

GETTING ALL THE BERRIES!

"These are surely the days of the berry picker in Northwestern Washington," says The Packer. Not content to furnish him with tents, free wood and water and free potatoes, one large grower has built houses for their accommodation. Even the picker of wild blackberries is being catered to. This year one packer will select the fastest pickers in his tame berry fields and send them into the highways and byways of Skagit County with tents and necessary equipment. On one farm two-room cottages have been built for pickers. They are well ventilated, have clean bunks, kitchen utensils and a cook stove. There are also community houses with ample kitchens, some accommodating 20 or more pickers. Furthermore, pickers who remain the entire season are paid a bonus.

WAGE SCALE IN VENTURA APRICOT ORCHARDS

A wage scale for the coming season has been set by apricot growers of the Fillmore district. This scale is $3.50 per day for the field workers, nine hours to constitute a day. For pitters, 17½ cents per box will be paid if the pitter remains through the season. Otherwise 15 cents per box will be paid. Growers on the avenue recently agreed on a minimum of $3 for field workers for nine hours and a minimum of 15 cents for the pitters.

CANTALOUPES IN THE SAN JOAQUIN

Cantaloupes from the Turlock district are now going out in carlots. Other cantaloupe sections are opening up. This year 500 acres are planted near Bakersfield in Kern County; also there is considerable acreage planted near Porterville and Manteca.

BIG FIG CROP IN BUTTE

Butte County will this year put out one of the largest fig crops known. The fruit so far has developed under apparently ideal conditions. Picking is expected to start September 1.

ALMOND POLLINATION

The experiment station of the college of agriculture is mailing Bulletin 306 to those who inquire for it. It has to do with almond pollination and is written by Warren P. Tufts. It gives a list of the early bloomers and the late bloomers amongst almonds, the pollen production of various varieties, the relation of the normal set to final crop and a series of tables showing results of cross pollination. Almond growers will find it invaluable.

POLLINATION OF BARTLETT PEARS

Warren P. Tufts of the University of California has written Bulletin 307, "Pollination of the Bartlett Pear." The bulletin is for free distribution by the University of California, Berkeley. Pear growers will find it invaluable.

GROWING ALFALFA

Continued from Page 85

curate for the average producing cow of the Salt River Valley. The hay consumption of 32 pounds per cow per day may seem a little high, but I believe you will agree that waste must be charged against the cow, and that where the hay consumption is large the percentage of waste will be relatively high. Prof. R. W. Clothier's figures show a hay consumption of 27½ pounds per animal unit on the farms coming under his investigation. You no doubt understand that he considers as an animal unit an animal one year old or above. He states that the hay consumption for dairy cows under the farm conditions here varies from 30 to 35 pounds per animal."

Varieties

The common variety of alfalfa, or Chilian, has been grown almost exclusively until the past few years. Recently it has been found that the Hairy Peruvian yields from 25 to 50 per cent more, and is claimed to have a higher protein content. C. J. Wood, superintendent of the Mesa experimental farm (a branch of the state experiment station), has been growing the Hairy Peruvian for nearly ten years and he recently stated in a public meeting that ten tons to the acre each year can be produced by growing this variety and following out approved methods.

Tractor Chisel

Catalog No. 60

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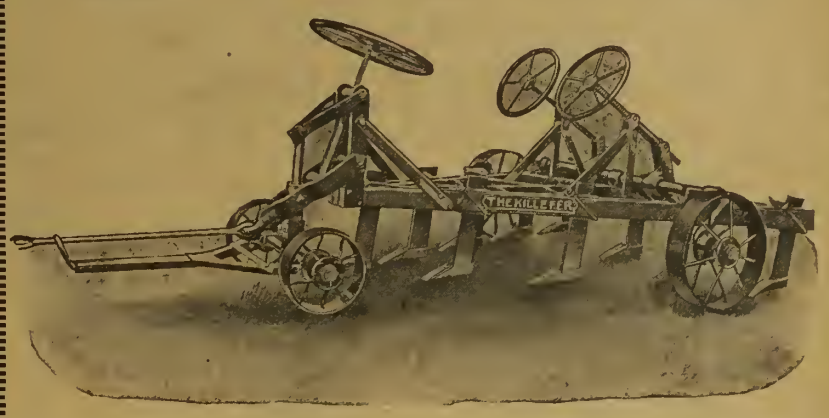

All authorities are agreed that three elements enter into plant life, viz.: air, heat and moisture and when these are totally or in part excluded by formation of plow sole, due to the old methods of cultivation, just to that extent is plant life cut short in some cases to total failure. How often is heard the statement that certain pieces of land are worn out and will not produce a crop, while we maintain that they are only shut out and by this we mean, that owing to the formation of this plow sole, the elements above named are not allowed to penetrate the soil, which naturally results in partial or total failure of the crop and it has been proven in every instance where this plow sole has been broken by subsoiling or chiseling, that as good or even better crops have resulted from this operation the first season.

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WHY IS JUNE DROP?

Continued from Page 83

available on our ranch, as for 25 years we have found that when we omitted extra applications we have June drop. This is especially true in lemons because lemon wood is softer than orange wood and because there is more flowing sap in a lemon tree. For 25 years we have observed that when our trees were hardened by potash there was less injury from frost, as well as heat. Therefore we have concluded that potash hardens the wood.

It is, of course, more necessary in a well-kept grove than in others. This is illustrated in a neighbor's grove. One corner of this grove contains neglected lemon trees, not pruned nor even properly irrigated. The trees are tough in texture; they did not receive enough irrigating water to make young shoots or water-sprouts of any consequence. They were never forced to bear by fertilizing. This summer not a lemon was dropped there. Not so in other parts of the grove that were properly cared for. June drop there is very bad. Trees seem to be made less hardy by forcing them and giving them proper care.

Mulching and summer cover crops have not been deemed practicable here, so we cannot say how they affect June drop. Time or manner of irrigating seems not to have had any effect in controlling the drop. We pay no attention to blossoming time in plowing or irrigating. Of course we try to keep the soil wet and plow as early as possible, but we always plow when trees blossom, as we give our cover crop a chance to grow in winter and spring. We never have trouble about setting fruit or dropping, providing three things are done: Potash application comes first; the second is fall plowing as well as spring plowing.

One of the chief uses of fall plowing is to cut the feeding rootlets and let them lie dormant until after the spring plowing. The third is to prune with regard to cutting out or breaking off the wood that is not hard, such as suckers and white wood. Leave only hard, fruit bearing wood. At least, prune with this idea in mind that eventually you will get only hard wood. We must work up to this gradually, and keep our ideal in mind.

Soft wood is too tender, nor does it bear the fruit that is really good and worth shipping. Nature takes care that we do not harvest such fruit. Nature eliminates the unworthy fruit on tender trees, in spite of our coddling it with plenty of water and fertilizer. It is our custom here to take out suckers and soft, impure wood at any and all times of the year.

These two superfluities are really detriments, as they take away and monopolize sap that should be at work making fruit branches vigorous and resistant, as well as profitable in fruit bearing.

Quick acting fertilizers, we believe, are of no avail, being unnatural stimulants and not real food. We have never been successful with them.

An interesting fact in the use of potash was found by a friend of mine near Columbus, Ohio, a Mr. Joseph Wetherall. He was the first man there, to apply commercial fertilizers to grain growing. He received immense crops but the stems would not stand up in the fields. Next he applied extra doses of potash, when the stalks stood up straight and firm. Potash, as we all know, is what sustains desert plants. It enables them to withstand the climate. Potash surely hardens. It is an ingredient of glass.

As we look about us, we notice, for instance, a plain, hardy palm, while beside it is a tender, delicate one, which invariably suffers from extreme heat or cold. We find that the former has tough, hard stems, leaves and fruit. Its texture and cells are not so watery and tender as those of the latter. If then, we can, by one or more agencies make our citrus trees more tough and hard in leaf, stem, bark and fruit, we have the ideal tree.

It seems as if these three agencies are necessary; for something is needed to counteract the detrimental effects of the continual fertilizing, irrigating and cultivating which are really unnatural, as they are stimulating. Look at a neglected tree in an abandoned place! How hardy it is! There is nothing to freeze or burn there. But the commercial, growing tree! How different!

* * *

Tulare County growers have had occasion to make fullest investigation of June drop. We believe the experts are now working in that county on that problem. We are glad to have as one of the representatives of that county.

Frank Daybell, Ducor, Tulare County

If I knew exactly how many orange growers there are in California I should probably know exactly how many theories there are as to the cause of June drop. That being the case I have less diffidence in giving my observations on the subject than I otherwise would have.

The dropping of citrus fruits early in the season has become a serious menace to the citrus industry but is in my opinion merely a phase of the problem that now confronts the growers, a problem that is as large as the industry, and on the solution of which some of the ablest men in California are concentrating their efforts.

The causes of June drop are many and include almost all the ills that citrus trees are heir to. Undoubtedly the citrus tree has a decided tendency to shed its fruit when under stress that can only be likened to custom of ancient mariners of throwing overboard the cargo when the ship was in distress.

With citrus trees the causes of distress are many and varied, which may account for the divergence of opinion amongst the growers. Anything that is detrimental to the citrus tree is a contributory cause of June drop and may range from lack of water on the one hand to excess of water on the other. Extreme heat and insect pests can also be included as contributory causes on the same grounds. Some have claimed that late plowing has been harmful and some that no harm has been done.

On our place we plowed some tracts early in the season and some only a little before blossoming time, but can find little difference. We commenced running the water April 1 and can not see much difference between the groves irrigated then and those irrigated one month later. We have noticed, however, that on the groves plowed in the fall and early winter, and which were also irrigated first in the spring, that rather a better crop seems to have set, but the difference is not great.

The situation this year is not normal in that many trees have shown

Continued on Page 106

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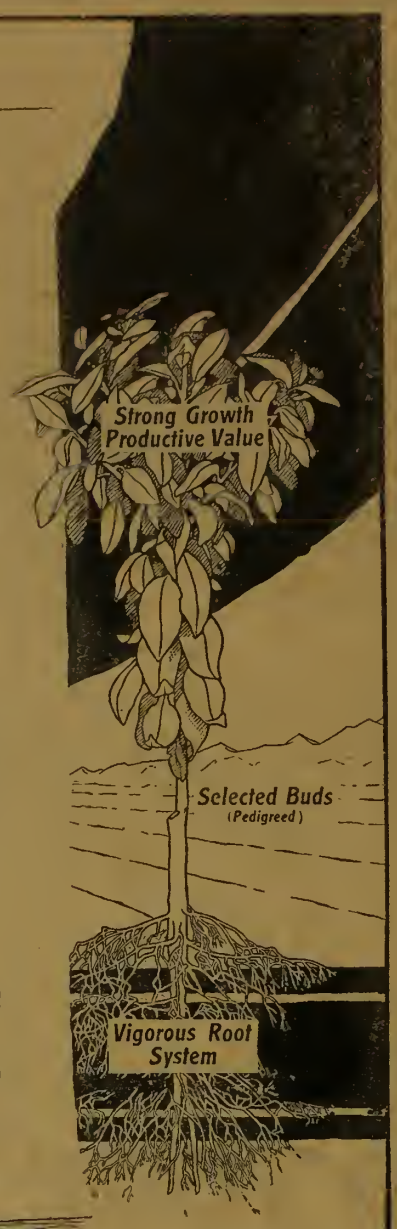

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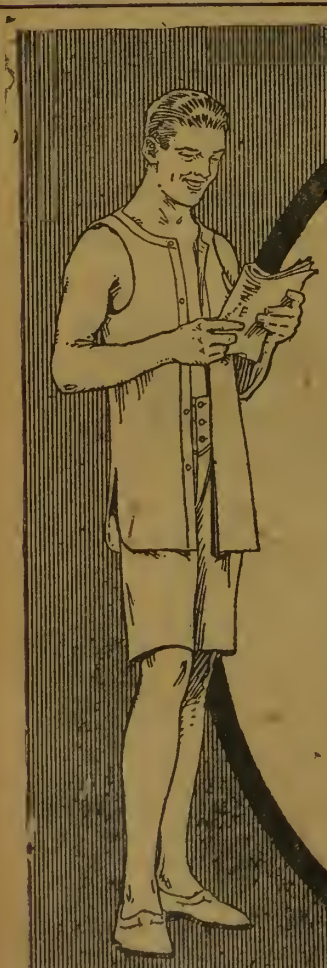

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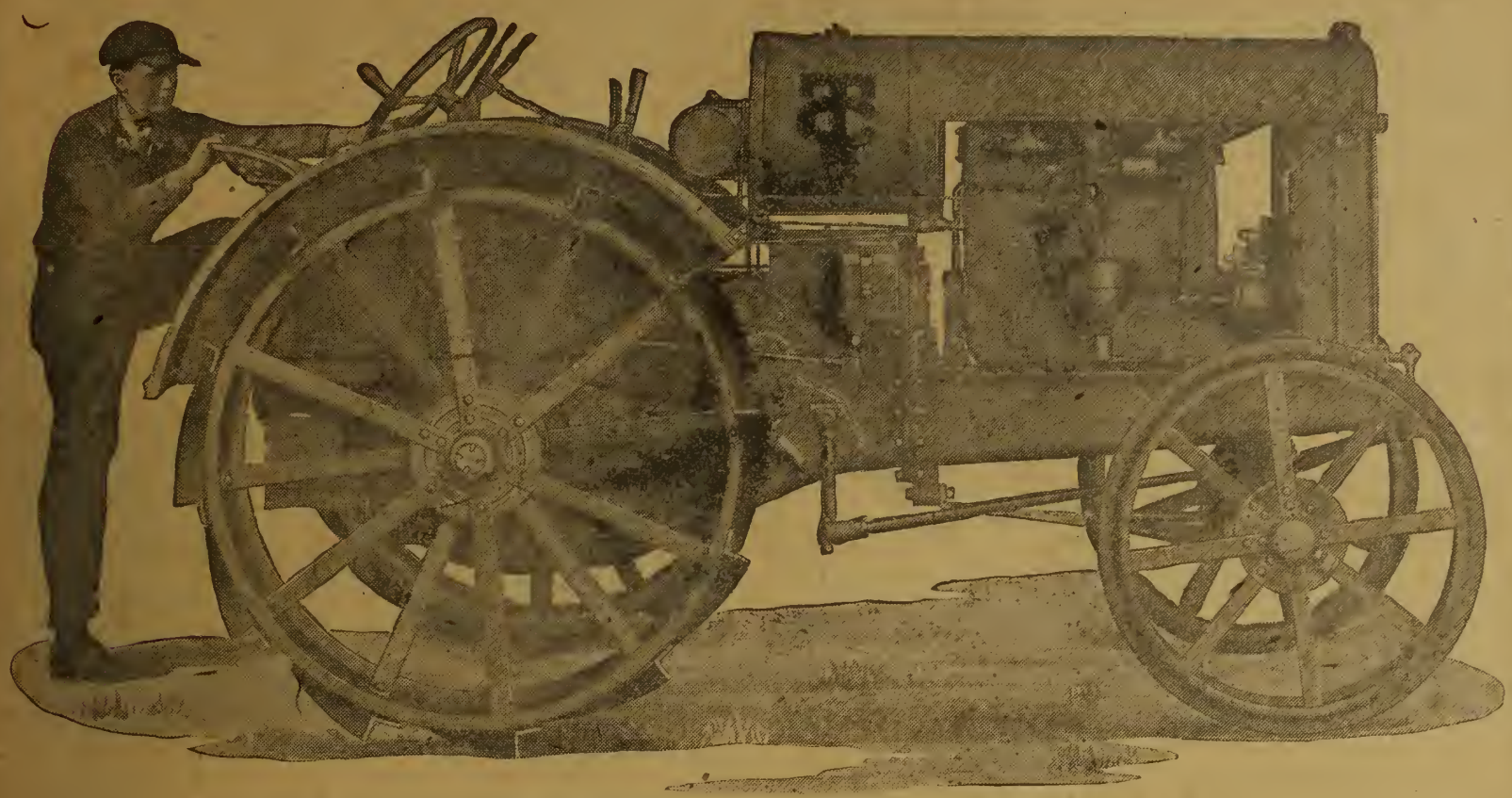

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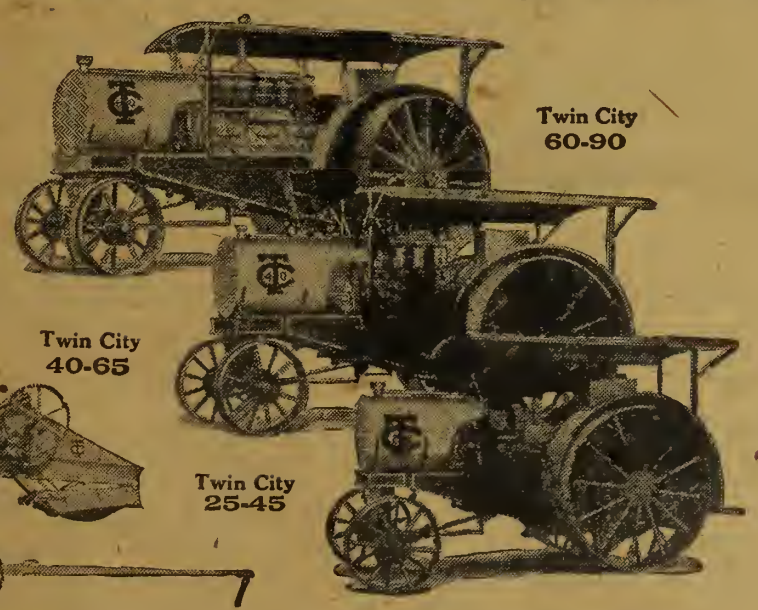

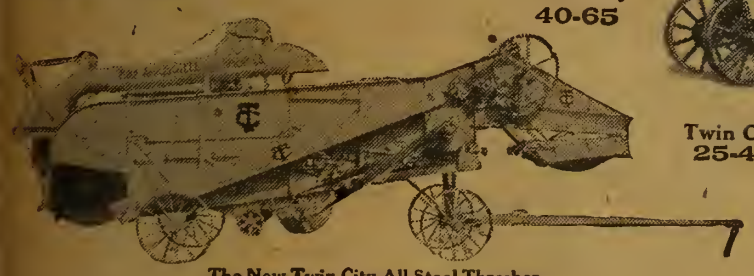

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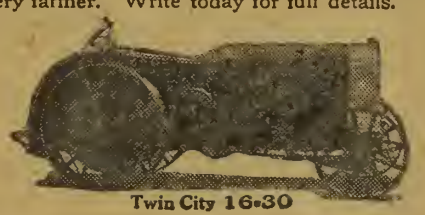

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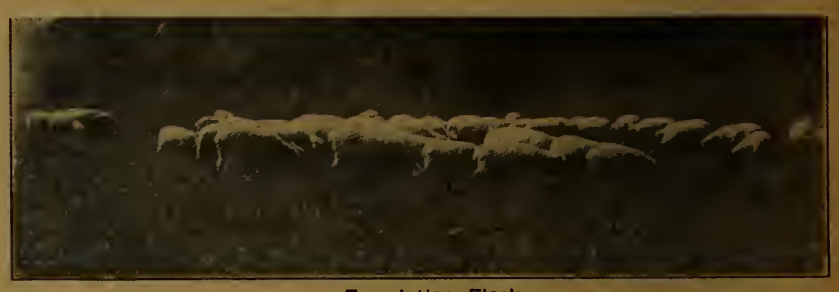
A Ranch with a Story and a Mission

By R. P. Royce

DURING the Panama-Pacific International Exposition the press agent of a certain Middle West state issued a booklet setting forth in approved press agent style the varied resources of his state. Particular importance was given to the position occupied by his commonwealth in agricultural and livestock affairs. Without attempting to recount all the claims made, we remember that some of the statements were to the effect that his state owned more Shorthorn cattle than the British Isles, more Jerseys than the Isle of Jersey, more Guernseys than the Isle of Guernsey, more Clydesdale and Shire horses than England and Scotland and more Percherons than France. The booklet was brought to the attention of a prominent livestock man who had some regard for facts and he inquired of the press agent if what was said happened to be true. The exuberant writer replied that he did not know, but added that "it sounded all right."

We are reminded of the above after a visit to Glenn County—not that Glenn County is making any sort of claims just because they "sound all right," but because Glenn County is working toward the time when it can truthfully be said that Glenn is the leading live stock county of the state. Glenn County doesn't make such sweeping claims as yet, but it is claimed that they have more registered Berkshires than any county in the United States. They also believe that they have as many individual owners of registered Shorthorn and Jersey cattle, Duroc-Jersey swine and Shropshire sheep as any California county—and the Poland-China breeders are out to make an equal record.

When any movement starts and continues to grow it is usually found that back of all is a story of a lot of hard work and persistent effort on the part of a few, and when the real story of Glenn County's livestock development is told it will be found that the stimulus was furnished by a few, among whom no one has rendered higher service or is entitled to more credit than W. S. Guilford. The mention of Guilford always brings to mind the Butte City Ranch, and because the development of this ranch should be an inspiration to all and is an example of the possibilities that are still open to all if they take the time and have the courage to seek them out, the story of the ranch is worth the telling.



Foundation Flock

Butte City Ranch has found Shropshire sheep highly profitable and has been responsible for the establishment of many small flocks in Glenn County.

In 1910 W. S. Guilford—Billy Guilford or Gil to nearly every one in the Sacramento Valley—came to California as director of agriculture for the Superior California Farm Lands Company organization that had under development 130,000 acres in Glenn County. Guilford was not long in reaching the conclusion that if a sound agricultural development was to be registered livestock of all kinds must be given a large place in the general scheme of operations, and having a wide and intimate knowledge of the livestock industry he knew that the better the livestock the better the business. From the first he talked livestock, and because he recognized the opportunity the new community afforded for making a center of pure bred livestock, he talked and promoted the establishment of pure bred herds, not herds of any particular breed, but pure bred livestock. As the community developed and interest in livestock grew, it became apparent that there was a real need for an establishment near at hand that could supply the demand for breeding stock—hence Butte City Ranch and this story.

The Sacramento constitutes most of the eastern boundary of Glenn County, and practically the entire length of the county is leveed, the levee running very close to the river. Just opposite Butte City, which is on the east side of the river is a tract of about 750 acres between the river and the levee, that for years—probably since the "memory of man runneth not to the contrary"—had been idle The entire tract was covered with a dense growth of heavy timber and underbrush so thick that in places it was difficult to make one's way. Almost every year during the spring the back waters of the river at flood time would overflow all the tract except a small knoll and leave a deposit of the best soil in the world. These annual overflows had naturally added greatly to the fertility of the land, and the fact that it was overflow land and covered with trees and brush had not made the place attractive to the land seeker, there being plenty of good land that could be put in cultivation with less effort. Accordingly the value placed on the land was low as compared to the land protected by the levee. On the whole it was not a particularly attractive proposition, but it looked good to Guilford, and the fact that it would require a lot of hard work did not deter him from tackling the job. In 1913 he interested W. P. Dwyer of the California Transportation Company in the proposition, and together they took over the place and started work, to literally carve out a farm. Clearing operations were begun and continued until at present about 300 acres are cleared and in cultivation.

From the first their plans contemplated fruit growing in connection with their livestock operations, and orchards of prunes, pears and walnuts were set out. Today about 180 acres are in fruit, 80 acres in prunes, 30 in Bartlett pears, and 70 in Eureka walnuts and a few acres in pecans. The oldest trees are now five years old and are the marvel of all who see them. So fertile is the soil that the trees have made a growth equal to most eight or ten-year-old trees. Another point of interest is the fact that the trees are subjected to scarcely any heavy pruning, the owners, proceeding on the theory that conditions of moisture and soil fertility are so nearly perfect that best results are obtained by permitting natural development of the trees. During the past five years the trees have been under six to ten feet of water, for varying lengths of time during three years. Most of the orchards are producing alfalfa between the trees. About 100 acres are producing alfalfa for hay and pasture, and owing to sub-irrigation it has only been necessary to irrigate a few times. Eventually about one half of the place will be in orchards and the balance in alfalfa, corn and other grain crops. No barley is being produced.

Before taking up the livestock activities of the farm, it will be interesting to describe the methods used in clearing the land. As stated above, much of the place is covered with a dense growth of underbrush. Guilford has found that the most practical way, and at the same time profitable way, of handling the brush is to run hogs, sheep and cattle. Hogs and sheep are first turned in to clean up the smaller stuff. Cattle come next, and by the time they are through, most of the brush is out of the way and only the heavy timber is

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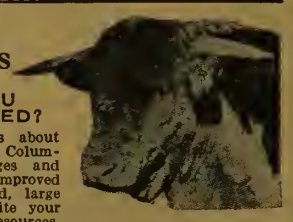

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SANTA BARBARA Route No. 2 CALIFORNIA

She Lives in Glenn County

Some day there will be many small herds on Sacramento Valley ranches, supplying stock like this to ranges and large farms. This is Bracelet's Beauty 2d.

left to be cleared. As fast as the hogs and sheep open up the brush, grass makes its appearance, and when the cattle are put on they have good forage of grass and brush missed by the first stock. Several hundred head of stock are maintained and fattened with little expense by the above plan.

The first venture made with pure bred livestock was with Berkshire swine, and the herd has been largely responsible for the position occupied by Glenn County as a Berkshire center. Subsequently a herd of registered Shorthorn cattle and a flock of registered Shropshire sheep were established. Guilford is an ardent believer in pure bred livestock of all kinds, but he has never allowed himself to lose sight of the fact that utility is the essential of all breeding operations, and he has at all times followed the policy of managing and maturing his herds and flocks under as near natural conditions as possible. This does not mean that they are turned loose to shift for themselves, but it does mean that they are not pampered and developed under conditions that often render breeding stock unsatisfactory when in the hands of purchasers. With plenty of range for exercise, and abundant forage, thrifty, healthy stock is produced.

In the establishment of the various herds and flocks it has been the aim of the owners to buy as good blood as possible and to dispose of the produce at prices that beginners and small operators could afford to pay. They have also made it a point to assist beginners in developing their herds and to dispose of the surplus. At present about 125 head of Berkshires, 125 head of Shorthorns and 300 head of Shropshires are maintained. At the head of the Berkshire herd are the following boars: Butte City Leader, a grandson of the famous Grand Leader 2d, and Onward 4th, a son of the imported boar, Epochal. Victor Stamford, a son of White Rock, and therefore a grandson of the noted Whitehall Sultan, stands at the head of the Shorthorn herd. The Shropshire flock has been built on Minton, Cavendish, Wardwell and Broughton breeding.

Until this year practically all the surplus stock was disposed of at private treaty, but from now on the owners plan to hold at least two annual public sales at which representatives of the breeds handled will be sold. A spring sale was held and a fall sale is under way. This method of selling is proving highly satisfactory to both sellers and buyers.

So much for the actual operation of the ranch There is a bigger story, the story of influence exerted by the Butte City Ranch on the livestock development of Glenn County in particular and Northern California in general.

To say that Butte City Ranch deserves entire credit for the remarkable strides made in livestock affairs by Glenn County would be putting it too positively, but to say that the ranch has been one of the powerful factors in such development is quite within the facts. Butte City Ranch has served to encourage Glenn ranchers to regard livestock raising as a necessary and profitable adjunct to their operations. It has stood for and furthered the cause of pure bred live stock regardless of breeds. It has proven that livestock production is a profitable business, a clean business and a dignified business. It has served as a source from which beginners could secure foundation stock. On every hand the owners have lent their aid and advice to every movement that touched livestock affairs. By adopting a broad and friendly attitude toward all breeds they have stimulated such an attitude on the part of others. They have preached the value of local shows and organizations and of boys and girls pig clubs and calf clubs. They have left no stone unturned to promote in every way the cause of better agriculture and a better citizenship. And because of all they have done they have been given, and hold, the confidence of the community in which they operate. The establishment of such a ranch on land that was not in use has added to the wealth of Glenn County and stands as proof of the possibilities and reward of well directed honest effort. Glenn is a better county today because it is the home of the Butte City Ranch.

An Opportunity to Buy Hampshire Bred Sows and Gilts Ortega-Underhill-Rancho Santa Barbara, Wed., Aug. 6

Do You Know?

1. That Hampshires are prolific, good mothers, unexcelled as rustlers, make rapid and economical gains, mature quickly and dress out high?

2. That at the 1918 International Livestock Exposition Hampshires won the grand championship for carloads?

3. That Hampshires have made more progress during the past ten years than any other breed?

4. That Hampshires are the most profitable hogs because of the above facts?

Announcement

In announcing this sale of Hampshire boars, bred sows and gilts, which will afford the buying public of this state the first opportunity to purchase at public auction Hampshire breeding stock, it is not out of place to make a brief statement concerning the herd from which the offering is drawn. When I determined to establish a herd of pure bred swine I had absolutely no prejudice as to any breed. What I wanted was the breed that would make me the most money for the feed and labor expended. I therefore conducted a most careful investigation of all the leading breeds. I took no one man's word. I talked to hundreds of successful hog men. I took up the question with the leading packers. While all did not agree, the majority of opinion thus gained led me to select the Hampshire. Once having determined on the breed I made equally as searching investigation of the most popular blood lines of the breed—the lines of breeding that the records indicated were producing the most desirable types. I then set about assembling a herd that represented these blood lines to the highest degree. The question of price did not enter into the selection. I wanted the best and was willing to pay for them. I have never had cause to regret my selections and through this sale I am certain that I will find ample justification. My hogs have proven money makers for me and I know that they will prove equally profitable to others. I take pleasure in inviting you to attend this sale.—Francis T. Underhill.

The Herd Boars

GENERAL TIPTONS MASTERPIECE, a son of the famous GENERAL TIPTON, and counted his best son. There is no better boar within the breed and his ability as a sire is unquestioned. We recently refused an offer of $3000 for this boar. Many of the sows and gilts are sired by or bred to him.
EXALTED RULER is a line bred LOOKOUT, being sired by EXALTED LAD and out of LOOKOUT QUEEN. We believe he will develop into one of the largest boars of the breed.
ROD, sired by LIEUT. MESSENGER, is considered by Secretary Stone to be one of the best fall yearlings he has seen. A number of the choice sows are bred to ROD.
DRAPER LADDO is by DRAPER LAD first in the aged boar class at the 1918 Iowa State Fair. He combines the best blood of the breed and was considered one of the best junior yearlings of last year.
GENERAL ALLEN'S COUNTERPART was selected by Secretary Stone as being the best boar calf last year in the great Crouch herd.
ADMIRAL BLYTHEDALE is a son of the famous BLYTHEDALE JIM, one of the greatest sires of the breed.

The Offering

includes 65 head of bred sows and gilts, and consists of 27 young sows, 21 yearling sows and 27 fall gilts. The entire lot has been selected and prepared for sale with great care. All are either bred to or sired by the above boars. As a whole we are proud of them. They have plenty of size and bone combined with that high degree of quality for which the Hampshire is noted. Established breeders or beginners will find this sale an excellent opportunity to buy at their own price foundation stock of outstanding merit. Practically every sow or gilt will be carrying her own guarantee by sale day, and every animal sold is positively guaranteed to be a breeder and with pig. The mating of the sows and gilts to the boars to which they have been bred has been done as though they were to stay in our own herd. Satisfactory litters are assured.

The sale will be held on the ranch, four miles East of Santa Barbara on the Coast Highway, near Montecito. Free barbecue. For catalog and other information address Walter Folk, Western representative of the American Hampshire Record Association, in care of the Ortega-Underhill Rancho, Santa Barbara.

Col. Ord L. Leachman, Sacramento, Auctioneer.

Hampshire Breeders To Organize

During the morning of the sale the California Hampshire Breeders Association will be formed. Every one interested is invited to join. Secretary E. C. Stone will be present.

Remember The Date and Place Plan To Be Present Ortega-Underhill-Rancho Santa Barbara, Wed., Aug. 6

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam: ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—
Milk 338 days.....18,849.40
Butter 866.28
At six years—
Butter seven days 34.13
Milk 532.40
At five years—
Butter seven days 28.85

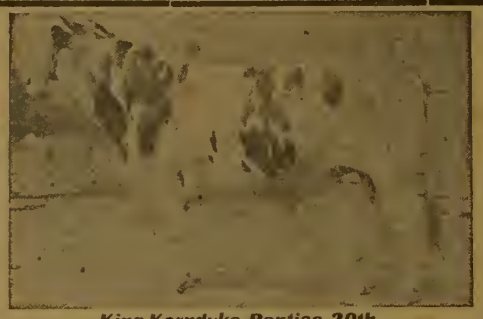
She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.

Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho
Anoakia Breeding Farm
Santa Anita, California
Anita M. Baldwin, Owner W. H. Taylor, Supt.

His Calves Are Beauties

Every one who is fortunate enough to own a son or daughter of KING KORNDYKE PONTIAC 20TH our $6500 herd sire, is enthusiastic about the splendid type and beautiful marking of his calves. While they are only babies his daughters show great promise of developing into exceptional dairy cows.



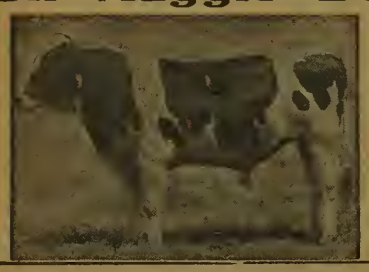
King Korndyke Pontiac 20th

His young sons are moving fast, and it will pay you well to see us now about one for your herd, for we are not going to be able to fully supply the demand for some time to come.

Our Entire Herd is Tuberculin Tested

Tulare Holstein Farm
W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Sir Aaggie De Kol Acme 2nd



Five of his seven nearest dams average:

Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds

This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

Eldorado Herd
Alex. Whaley, Owner Tulare, Cal.

Are You Satisfied

with the returns from your present herd? Our milking herd of 300 cows averages one pound of fat per day. What is your average? Ours is due to good cows by high class sires. We have 5 bulls all bred for increased production. Senior Sire, Sir Veeman Korndyke Pontiac, a son of Sir Veeman Hengerveld, the sire of more 30-lb. cows than any living sire. We can sell you a young bull at a very reasonable price.

BURR FARM Los Angeles, Calif.

GOING FAST, SO ACT QUICKLY

Five young Holstein bulls have left Sunnyside Farm past month to head other herds. We have for sale a few select sons of Sir Veeman Korndyke Pontiac by Sir Veeman Hengerveld, the sire of more 30 pound cows than any other living sire. Full description and price on request.

R. F. Guerin Breeder of Holsteins Visalia, Calif.

HEREFORDS

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. Duke, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

Stockmen and Dairymen Notice

At your earliest convenience go to 1500 West 16th St, Los Angeles, to see
Aggeler & Musser Seed Co.'s
DEMONSTRATION PLOT of Corn, Millets, Grasses and Sorghums

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency." Tells You Why.
Hauser Packing Company
Los Angeles, Cal.

The Necessity of a Higher Producing Cow

The following is part of an address delivered before the meeting of the California Dairy Council, San Francisco, July 8, by H. Brown of the Burr Farm, Los Angeles. Mr. Brown has been largely responsible for changing a losing dairy into a very profitable plant.—Editor.

THERE are fewer cows in the country at the present time, than some years back. The high price paid for beef, together with the high price of feed and labor has forced the dairyman to sell his unprofitable cows to the butcher.

Scientific research has discovered that there is nothing to take the place of the butter fat in the milk, for the human being. Business men who are not slow to take advantage of what benefits them, are advertising this fact to the world and it is increasing the demand for whole milk in the cities to a greater extent than ever before.

The main reason for the necessity of a higher producing cow is the fact that it would be impossible to produce and sell milk at present prices, with a cow of twenty years ago. Feed and labor are three to four times as high as they were at that time, consequently it is necessary that the dairy cow be bred for production and production alone. We might as well try to grind wheat with the old time millstone as to try to produce sufficient milk for the world with a scrub cow.

Farms must be operated to supply people with food. Many farms are so situated from the market that they must produce a product that can be marketed in a concentrated form and there is nothing that will take raw farm products and convert them into a high priced article as will the dairy cow.

Farmers have been making a living on the dairy farms, but when the cow testing association came along and kept records of the different cows it was found that a good many things had to be corrected, and the chief thing was to get rid of the low producer as she did not pay for her feed and labor. A better producing cow had to take her place.

The Iowa state college in experiments with common cows showed that they produced only about 175 pounds of fat per year from 4,000 pounds of milk. Their daughters from purebred sires show a production of over 5,000 pounds of milk and 250 pounds of butter fat.

The health offices of the various cities and states are enforcing necessary sanitary regulations that make milk production more costly, and it is up to the cow to produce more cheaply in order to meet this expense.

This question of the necessity of a better producing cow was a very pertinent one to us in 1917 when we purchased a 300 cow dairy in order that we might have milk for the city trade. This dairy was producing less than a half a pound of fat per cow, which did not pay for the actual feed consumed and the labor, let alone the incidental expense and depreciation in interest on the investment. We knew it was absolutely necessary to get greater production at once and went to work with this in view. The milk of each cow was weighed and tested. The cows were stabled according to production so that each cow could be fod the proper ration to bring up her production. By weeding out the poor producers we doubled the production of the herd within a year and changed the operation of the place from a loss to a profit. We knew the great benefit of the cow testing association and were instrumental in getting one organized and for the past year have had the benefit of that work which has helped greatly in building up the herd.

Last year there were 200 cows in the cow testing association of Los Angeles. This year there are 2,800 cows signed up.

The first sale in Southern California, at which the records from the cow testing association were used was at our sale in February of this year. This sale made an average of over $200 per head, the highest average in that part of the state for grade cows.

In our herd almost every cow without exception is showing an increased production this year over last on account of having been fed properly the past year. In a great many cases we are showing as high as 100 per cent increase, especially where cows had been fed no grain the year previous to putting them into our herd. This proposition of getting higher producing cows is past the experimental stage. The many purebred cows of all breeds are producing up to 20 pounds of butter per week and a great many Holsteins as well as other breeds producing over 1,000 pounds per year.

An architect in building always looks to the foundation and so constructs his building that it will sustain the load it has to carry. I believe the same thing should be taken into consideration in the building of the Dairy Council. In planning its work the greatest consideration should be given to the development of a higher producing cow.

My work has taken me out among the dairymen, both the experienced man who knows how to make a profit and the beginner who has everything to learn. Only last week I had a letter from a woman asking me why she didn't make a profit and how she could. She had cows that were giving from a gallon to a gallon and a half a day. That woman wants to go ahead with the dairy business but how can people like her continue unless the Dairy Council reaches them with the right kind of information. The farmer should be taught to keep books on his cows and also their proper feeding and breeding and when he changes from grades to purebreds he must keep his registration papers and certificates in a proper manner.

I am sure there is going to be a greater demand for milk and milk products than ever before, but in order to get this milk the farmer must have a cow that is a big producer. We can not lose and we are bound to win if we get this better producing cow, and it is up to the Dairy Council to help. This they can do by helping to organize cow testing associations; by seeing that purebred bulls are used in every herd in the country; by helping along with cow and calf clubs; by putting dairy papers into the couutry schools and by teaching the farmer the proper feeding of his cattle. One of the best ways of all is to see that there is a representative exhibit of dairy cattle at every fair or show held in the state of California.

GLENN COUNTY FAIR

Tho Glenn County Fair which is to be held at Orland, September 22-27, is sending out its third annual premium list. It is a 130 page book and indicates tho Orland people are getting into action for one great big fair

JERSEYS

Jersey Bull
For Sale
A fine straight one, bred right, priced right
S. F. Williams
Chico, Cal.
Member Orland Jersey Cattle Club

Venadera Herd
Registered Jerseys
Young bulls from proven dams in Register of Merit
Guy. H. Miller
Modesto, Cal.

All My Records
Are made under ordinary dairy conditions
The Farmers Cow is
The Jersey
Young Bulls For Sale
C. D. Hayworth
Modesto Cal.

Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
Modesto Cal.

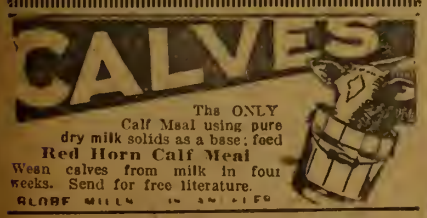
Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

10 Jersey Bulls
We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.
Arden Dairy, Certified
El Monte, Cal.

Ord L. Leachman
AUCTIONEER
Sacramento
(1004 5th Street)
My services are available to all who plan to sell live stock, farm equipment or real estate, and who want the high dollar. Pure bred live stock sales a specialty. Terms reasonable. Write or wire for dates.

California Breeders
have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.
CALIFORNIA BREEDERS SALES & PEDIGREE CO.,
C. L. HUGHES, Sales Mgr. Sacramento, Cal.

Some of the finest
GUERNSEYS
In the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale



This ONLY Calf Meal using pure dry milk solids as a base; feed Red Horn Calf Meal
Wean calves from milk in four weeks. Send for free literature.
GLOBE MILLS LOS ANGELES

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

LEGUMES, SUDAN GRASS AND CEREAL CROPS FOR SILAGE

The wide use of the silo as a means of preserving corn for feeding purposes has aroused interest in the possibility and advisability of utilizing the same method as a means of preserving other forage crops. With some of these crops, especially those belonging to the sorghum family, and including ordinary sweet sorghum, kafir, milo and feterita, when the necessary conditions are observed, the results are practically as successful as with corn. For others, especially those of the legume family including clover, alfalfa, field peas, cowpeas and soy beans, the results have not been uniformly successful. In University of Missouri Bulletin 162, C. H. Eckles discusses these various crops for silage and comes to these conclusions.

Under proper conditions legume crops may be preserved in the silo with entire success, but as a rule they are best preserved as hay on account of the much greater weight to be handled if put into the silo and the lack of suitable machinery for handling the green crop in the field. When conditions make it advisable to put legumes in the silo, in addition to ordinary precautions concerning exclusion of air special attention is necessary that the proper amount of dry matter is present in the material.

For proper preservation in the silo a dry matter content of approximately 40 per cent gives the best results. Legume crops in the stage of maturity as cut for hay may contain as low as 20 to 25 per cent of dry matter. If put into the silo under these conditions the silage will have an extremely disagreeable odor when removed and be almost worthless for feeding purposes. The wide variation in results from using legumes for silage as reported in agricultural literature is largely explained on the basis of the dry matter content of the materials used.

Sufficient dry matter to insure proper preservation may be assured by allowing the crop to reach a suitable stage of maturity before cutting, or in case the crop has not reached the stage of maturity necessary to insure the dry matter content desirable, by allowing the forage to lie in the field five to six hours after cutting before putting into the silo.

Alfalfa can not ordinarily be allowed to stand in the field until the proper stage of maturity is reached, and except in a season of drouth when the dry matter content of the plant is abnormally high, it should be allowed to lie in the field four to six hours so that some of the surplus water can evaporate.

Canada peas and oats are in condition to go into the silo when a stage of maturity is reached where the pea pods are becoming yellow and the oat heads are showing the first indications of ripening.

Soybeans are in the proper stage of maturity for silage when the plant shows signs of approaching maturity. The beans should be well developed and the pods beginning to turn yellow.

Cowpeas should show the same conditions as described for soybeans. On account of the wide variation in condition and time of planting it is often necessary to put cowpeas in the silo before the proper stage of maturity is reached. Under these conditions partial drying in the field is essential to good results. Silage from legumes is superior in protein content, but somewhat inferior to corn silage in total digestible nutrients. With a proper amount of dry matter present the loss of feeding value while in the silo is no greater with silage from legumes than with silage from corn.

Sudan grass is preserved readily in the silo with no special attention necessary to the amount of dry matter. Its feeding value will range from two-thirds to three-fourths that of good corn silage depending upon the maturity of the crop when put into the silo.

Wheat is used to some extent for silage and supplies a silage of reasonably good quality, having a feeding value approximately the same as corn silage. It should be put into the silo when the wheat grains are in the dough stage. No special precautions are necessary to insure a proper preservation.

Rye may be preserved readily in the

Globe "A-1" Poultry Mashes
—with dry buttermilk

Baby Chick Mash
The nutritious hearts of whole grains, ground and scientifically balanced with real dried buttermilk to make a wholesome feed on which chicks thrive. Makes chicks live and grow in robust health.

Growing Chick Mash
A food designed to make chicks develop into egg producers in the shortest possible time. Contains real dried buttermilk. Should be fed until chicks reach age of 5 months, then get

Globe "A-1" Laying Mash
for quick results in the egg basket. Contains real dried buttermilk. The use of buttermilk in poultry feeding has the indorsement of U. S. Agricultural Dept. (See Bulletin 162, Berkeley, California)

Health-giving lactic-acid Bacteria of Buttermilk

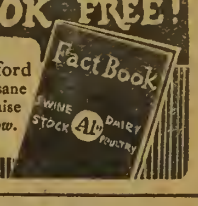
Put prosperity into your poultry yard. Start on these three great feed today. See your dealer—he has all the Globe "A-1" Feeds.

GLOBE MILLS
Los Angeles San Francisco

Globe "A-1" Swine Feeds
—with dry buttermilk
Three kinds, one for baby pigs, one for growing pigs, one for fattening hogs. Scientifically compounded to suit age of animal. All kinds contain real health-giving dried buttermilk, in correct proportion to make animal grow, mature rapidly and take on a load of profit-making fat. Ask your dealer.

Globe "A-1" Stock Feed
—with molasses
A well-balanced ration containing the proper amount of such concentrate feeds as soya bean meal, milo maize and other grains in combination with chopped alfalfa and dessicated bean straw. The whole ration treated with heavy addition of Hawaiian *cane* molasses. Palatable, nutritious—a winner either as a dairy or a fattening feed.

Globe "A-1" Dairy Feed
A high-protein concentrate to balance roughage available on your ranch. All we ask you to do is to weigh up the milk before and after feeding this remarkable feed for a few weeks.

Get the FACT BOOK FREE!
—here is a book you cannot afford to be without. Practical, sensible—a sane talk by experts who know how to raise poultry, swine and stock. Write for it *now*.


The Nevada Hereford Ranch

Offers a Choice Lot of

Breeding Cows and Heifers

Bred to Their Outstanding Herd Bulls

HARRIS STANDARD 2ND 425039, out of the same dam as the $35,000 Repeaters Model and sired by the famous bull Standard.

Debonair 64th 616840, is sired by the Geo. Chandler Debonair 26th and out of Beau Donald 33rd dam.

Beau Blanchard 76th 685487 is a straight Anxiety bred bull. A youngster we paid $10,000 for.

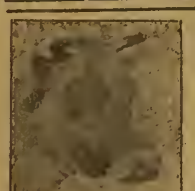
Nevada Lad 8th 697062 is sired by Harris Standard 2nd and is out of one of our exceptional breeding cows combining the blood lines of Beau Brummel and the imported Rufus.

This offering includes over 100 head of the choicest breeding stock. Some of the cows have calves at foot and are bred back again. They are just off the pasture and are in the best possible breeding condition.

All inquiries given prompt attention.

Jno. H. Cazier & Sons Co.

Wells, Nevada



THE KEEP ON
herd of registered Jerseys offers a two year old bull by a grandson of Champion Flying Fox. One or two yearlings can be spared. Don't let this opportunity pass—every one from R. M. dams. Complete description on request.
Dr. H. W. Hand Orland, Calif.

When writing advertisers, mention The Cultivator.

silo but the resulting silage is not very satisfactory on account of its not being palatable. For best results it should be put into the silo in the blossoming stage, or even earlier. In feeding value it is somewhat below that of corn silage.

Live Stock News Notes

SALE CALENDAR

Shorthorn Cattle

August 2, Butte City Ranch, Butte City.
October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

August 20. Fresno County Poland-China Breeders' Association, Fresno.
September 17, John M. Bernstein and W. L. Haag & Son, Hanford.
September 19. San Joaquin County Poland-China Breeders Association, Stockton.
October 4. Marsh & McCracken, Modesto.
October 7, Bassett, Ross and Crawshaw, Hanford.
October 18, Trewhitt, Vaughan and Nehls, Hanford.
October 29, Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine

August 2, Butte City Ranch, Butte City.

Hampshire Swine

August 6, Francis T. Underhill, Santa Barbara.
August 20. W. M. Carruthers, Live Oak.

Shropshire Sheep

August 2, Butte City Ranch, Butte City.

Fresno Duroc Breeders to Organize

The Duroc-Jersey breeders of Fresno County will meet in Fresno August 2 for the purpose of perfecting an organization for the advancement of their chosen breed of swine.

The organization will encourage the present breeders and assist beginners in securing the right kind of foundation stock. A little later arrangements will be made for holding a public sale which will be made a permanent feature.

Much Interest in Underhill Hampshire Sale

The first public sale of Hampshire swine ever held in California will occur at the Ortega-Underhill Rancho, the property of Francis T. Underhill, near Santa Barbara, on Wednesday August 6. The event is attracting more than ordinary attention for the reason that it is not only the first opportunity California breeders will have to buy representative Hampshires at auction, but because of the high excellence of the herd. When Mr. Underhill decided to enter the hog business he selected the Hampshire breed, and it is doubtful if any herd has been assembled with greater care than Mr. Underhill gave in the selection of his foundation stock. The blood lines on which the herd has been built are the recognized sources of the best animals, and each of the herd boars represents in a way a distinct line of breeding. Consequently it is expected that a careful blending of these lines, as determined by experience, will produce a superior class of animals. There is no denying the fact that Hampshire swine have made a phenomenal growth during the past ten years and that their popularity is increasing, and because this breed is destined to take an important place in the swine industry of this state California breeders congratulate themselves on having such a superior herd from which to draw breeding stock.

It is expected that the sale will attract a very large crowd and it is planned to make the day a real Hampshire event. During the morning of the sale the California Hampshire Breeders' Association will be organized and Secretary E. C. Stone will be present to lend his aid, advice and enthusiasm to all. A barbecue lunch will be served.

The sale will consist of 65 head of sows and gilts, all of which will be sold bred to one or another of the famous herd boars owned by Mr. Underhill.

Col. Ord L. Leachman of Sacramento will be the auctioneer, and Walter Folk, Western representative of the American Hampshire Record Association will manage the sale.

Inaugural Sale of Poland-Chinas

The inaugural sale of Poland-China swine of the Fresno County Poland-China Breeders' Association will be held on the Fresno fair grounds Wednesday, August 20. The committee appointed to select the animals eligible for this sale have made their report to the secretary, Walter C. Ficklin, who states the animals selected meet the requirements and standard set by the association. The Fresno County Poland-China breeders have been liberal buyers at past sales held in the state and have imported a large number from the leading Eastern herds. As a result they believe their offering should attract a large number of buyers and that the animals to be sold will return a handsome profit to their purchaser.

Will Hold Berkshire Sale in August

W. M. Carruthers, Live Oak, who recently held the record breaking sale of Shorthorns at Sacramento, has announced that on August 20 he will sell at public auction 65 head of registered Berkshires. The offering will include a number of boars and a particularly choice lot of bred sows and gilts. The sale will be held at Carruthers' Farms, Live Oak.

Cut the Cost with Silage

RIGHT NOW is the time you need an Ideal Green Feed Silo. Mill feed is high and likely to remain so. The farmer or dairyman who owns a silo is not only saving money on his feed bill, but is getting one-fourth more milk from his cows than the man who has to use dry feed altogether.

Summer or winter you will find this silo a profitable investment. It maintains an unfailing supply of juicy, succulent feed at the lowest possible cost. No other one item of farm equipment will return so much profit on the money invested.

The Ideal Green Feed Silo

will make your farm or dairy one hundred per cent. efficient. It eliminates all waste and enables you to produce six to eight times more feed per acre than could be raised without a silo to preserve it.

The choicest California Redwood is used in the construction of the Ideal Green Feed Silo. Tongue and groove staves of selected tank stock insure a perfectly joined, airtight container. Heavy round hoops of soft steel, set 30 inches apart bind the staves into a rigid circle. Long cold-rolled upset threads, provided with heavy hexagon nuts and our heavy malleable iron straight-pull lugs, permit easy adjustment and add to the life of the silo.

Refrigerator Doors

The doors on the Ideal are of the refrigerator type, interchangeable, and held in place by strong oak locking bars. **No other silo has doors like them.** They fit in the frames like the doors of a safe or a refrigerator, only they have no hinges. Three points of contact make them airtight and leakproof. Inside they are flush with the walls of silo, thus doing away with all danger of air pockets.

Many special features of the Ideal, together with high-grade material and skilled workmanship, make it the most perfect silo ever built. Our silo catalog, giving full particulars and prices, is yours for the asking.

Water Brings Wealth

It is just as foolish to try to get along without a water tank as it is to do without a kitchen stove. **A Pacific Redwood Tank** will provide water for all your needs—for your household as well as your stock. Used for irrigation purposes, it will pay for itself many times over through increased production.

Pacific Redwood Tanks are equipped with patent non-shrinking system, which absolutely prevents leakage. Let us tell you more about them.

We also manufacture **Pacific Wood Stave Pipe,** in various sizes, for every purpose. Ask for our pipe catalog.

Cut Out this Coupon—Mail It Today

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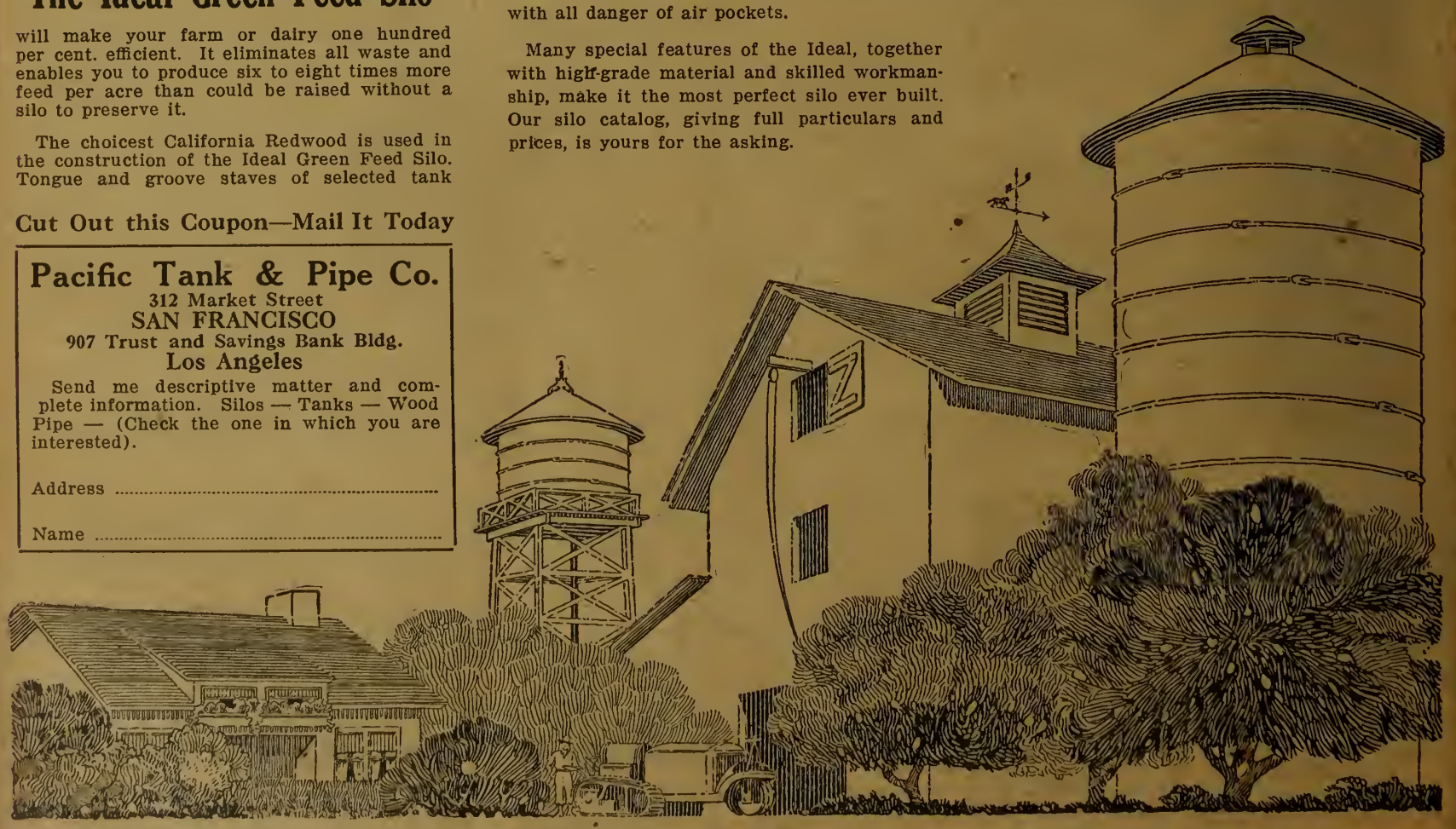
Los Angeles

Send me descriptive matter and complete information. Silos — Tanks — Wood Pipe — (Check the one in which you are interested).

Address .....

Name .....



WHITE DUCHESS
By Perfection and Out of Humboldt Duchess 6th

CUMBERLAND DUCHESS
By Sir Type and Out of Knight's Duchess

PRINCESS ADELINE 17TH
By Victor Stamford and Out of Jeanetta Primrose

ROSELAWN'S KING
By Ringleader and Out of Roselawn 42d

KNIGHT'S FRANTIC
By White Knight and Out of Laurel Frantic 33d

CUMBERLAND ODDITY
By Sir Type and Out of Odd Lassie

THE BIG AUCTION SALE

Butte City Ranch

Owned by W. P. Dwyer and W. S. Guilford

Butte City Glenn County California

Saturday, August 2, 1919

Buyers who want foundation breeding animals of excellent quality will find a good selection in this offering. The owners of Butte City Ranch expect through their annual sales to sell from their herds and flocks the sort of animals that will prove profitable in the hands of new owners and bring them back again as buyers in the future.

50 Registered Shorthorns

The offering of registered Shorthorns is an especially well balanced one. There are big, thick fleshed cows with calves at foot, bred and open heifers, and some choice heifer calves. Most of these are by such sires as Victor Stamford, Vermillion, Gloster Archer, Roan Chancellor, Crescent Dale, Gibson's Goods, Ringleader, Perfection and Sir Type. All of the bred females are in calf to Victor Stamford, who is by one of the best sons of Whitehall Sultan and out of a Stamford dam. An excellent opportunity will be found among these females to

There are big prices. There are 12 young bulls in the sale, a desirable offering throughout, and they are all in vigorous, thrifty condition. Breeders and rangemen will be pleased with this selection.

Every animal tuberculin tested; every animal sold as a single lot guaranteed to be a breeder; every young animal permanently immunized against blackleg by Purity Blackleg Aggressin made by the Kansas process.

130 Registered Shropshires

Breeders who already have established flocks will like these Shropshires and can find among them a wide selection that would add strength to any flock. Those about to establish flocks will find in this offering the sort of animals to use for foundation. The farm flock can be made one of the most profitable items on most California farms, and in the aggregate one of the largest sources of farming revenue. The animals in this sale represent Broughton, Cavendish, Minton, and Wardwell breeding, and are of very desirable type besides being in splendid physical condition. The owners of Butte City Ranch selected for this sale 35 of their very best mature ewes, 40 ewe lambs, 35 yearling rams, and 20 ram lambs.

50 Registered Berkshires

Seldom does the buyer have an opportunity in a public sale to select registered Berkshires of such uniform breeding as will be found in this offering. The entire 50 head are sired by two boars, one of them Onward 4th, son of the famous imported English boar Epochal, the other Butte City Leader, a grandson of the world's grand champion Grand Leader 2nd. Both of these boars are famous for the size, smoothness, and quick maturity of their get, and Butte

City Ranch is offering well grown gilts and young boars of more than usual attractiveness. These blood lines are sought after by the best breeders in the country and beginners can make no mistake in founding herds bred along the same lines. Every Berkshire in this sale is permanently immunized against hog cholera by Purity Hog Cholera Serum and Mixed Vaccine.

10 Shetland Ponies

Butte City Ranch Shetland Ponies are justly held in high esteem wherever they are known, and this is one of the very few places in the west where these splendid miniature horses may be purchased. Some of the best on the ranch have been selected for this sale.

GENERAL INFORMATION—The sale will start promptly at 9:00 A. M. owing to the large number of animals to be disposed of in one day; all animals will be loaded on board train or boat free of charge; Butte City Ranch is 80 miles north of Sacramento, 19 miles north of Colusa; 16 miles southeast of Willows, 25 miles southwest of Chico.

Catalog of Sale now ready. Write for one.

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, President C. L. Hughes, Sales Manager
Sacramento, Calif.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare.

Duroc-Jersey Hogs

250——Spring Pigs——250

That have been mated with extreme care and properly raised and fed. The big, tall, rangy, high-backed, big-framed kind that can carry an awful load of pork and walk off with it. We have on our Orland ranch, the sires and dams of the $1100 sow and $1000 boar recently sold at San Jose Sale. WHEN YOU NEED GOOD DUROCS—WRITE US.

F. D. Burr Co.

235 Montgomery St. San Francisco

Important Duroc Offering

We recently purchased a car of excellent Duroc-Jerseys selected from some of the East's leading herds.

Thirty-five yearling and aged sows for sale. Will breed them to any boar on the farm. Several young boars ready for service and fall shows.

Young pigs of both sexes.

H. P. Slocum and Son

Willows, California

The Key Herd of Duroc-Jerseys

Duroc Jerseys In San Diego County

GREAT MODEL---The Most Popular Sire in the West

Winsor Ranch, Bonita, Calif. Address R. K. Walker

To You who Are Looking For GOOD Duroc Jerseys

We can now supply a few choice boar and sow pigs. They are by such boars as Cherry Chief 2nd and Calif. Great Wonder and from Golden Model sows.

George Junior Republic Chino, Calif.

also Breeders of Holsteins

ANCHORAGE FARM BERKSHIRES ARE PROFITABLE

Future Champions Can Be Secured NOW

by placing your order for a young Berkshire boar from the famous Anchorage Farm herd. Star Leader and several of his sons have been mated with our large type Berkshire sows. Star Leader is famous wherever good Berkshires are known.

One of these young boars will not only add size and vigor but will add the quick maturing qualities demanded by pork producers.

Write immediately for full particulars and breeding and secure your future herd boar. Priced within reason.

Anchorage Farm Orland, Calif.

BERKSHIRES

are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser.

High class stock for sale at all times.

Geo. A. Stingle El Monte, Calif.

Take a Look at Blue Valley Model

One of our promising young boars. Strictly Big Type. Aged sire Greenfield's Special by Superba. Big Type Polands that satisfy. Write

Poland China Ranch H. B. Peake, Mgr.

San Bernardino, Calif.

Hauser's Digester Tankage

Gives Greatest Value for Least Money

It Makes Them Fat

Hauser Packing Co. Los Angeles

Raise Your Hogs and Cattle at a Profit

Assist Nature by Feeding

Economy Stock Powder

A general conditioner, a worm expeller and a disease preventive.

Send for FREE SAMPLE and our BOOK on LIVE STOCK.

ECONOMY HOG & CATTLE POWDER CO.

Save Your Hogs Hearst Bldg. San Francisco, Cal.

Duroc-Jersey Pigs

from both Eastern and Western Registered Sows of Best Blood Lines. Sired by LEADING BOARS

Ranch: Van Nuys, Calif.

W. Chas. Swett, 7256 Franklin Ave., Hollywood, Calif. Phone Holly 4115

DUROCS OF THE

BEST BLOOD LINES

Bred sows, gilts bred and open. Have one very nice O. C. K. boar 9 months old. Dam sold for $1,100 and sire for $1,000 in last month's sale.

Jersey Queen Farm, San Jose, Cal.

STERILIZER FOR SMALL DAIRY

The Western office of the dairy division of the United States department of agriculture offers the following instructions as to how milk can be cheaply and efficiently cooled:

As the warm weather comes on complaints about loss of milk through souring are to be expected. It is now recognized that one of the principal causes for loss of milk through souring is inadequate sterilization of utensils. This fact has long been recognized by the managers of city milk plants and large concerns and adequate equipment has been installed for the purpose, but both dairymen and dairy officials and instructors have not known of practical and cheap equipment for sterilizing, suitable for the small dairyman. This difficulty is now entirely overcome and equipment both cheap and thoroughly practical may be had.

C. F. Hoyt, market milk specialist, reports that Mrs. B. F. Van Dyke of Madford, Oregon, devised a sterilizer for this purpose several years ago. She did this by placing a false bottom in an ordinary clothes boiler. She then placed a little water in the boiler and placed her milk bottles and other utensils on the false bottom and steamed them by causing the water to boil.

The same sort of a sterilizer was devised by a dairyman near Los Angeles. Its value was recognized by the Los Angeles city inspectors. Largely through their activity the use of this sterilizer became general in this section and goes far to account for the high quality of milk produced there. It consists simply of a box of galvanized iron which may be placed on any source of heat. A stock size carried by dairy supply houses is 29 by 29 by 29 inches and the price is $8.00.

A modification of this box sterilizer has been made by Mr. J. E. Hathaway, a dairyman of Norwalk, near Los Angeles. For the galvanized iron box he substituted a box having cement sides and a thick iron bottom, which he heats over a wood fire. He built a foundation of cement and on this foundation placed an old kitchen sink of perhaps one-fourth inch thickness.

Then he built up his box of cement on woven wire from the sides of the sink, and placed a cover on the top. The walls of the cement box were about one inch thick, and inside dimensions 24 by 28 by 32 inches. He used one sack of cement, costing two dollars and did the work himself. For this kind of a sterilizer there is no cost save for the cement and the discarded sink. Mr. Hathaway has used this sterilizer about a year now with complete sucess. He believes it cheaper and more durable than the galvanized iron sterilizer in general use.

FIVE RULES FOR SUCCESSFUL DAIRYING

Jake White, veteran dairyman of Ohio, recommended to a group of dairy students the other day the following practices which he says have been largely responsible for his success:

Buy a purebred sire, a few good cows, and improve the herd by breeding.

Feed a ration that is palatable as well as balanced.

Keep the herd free from disease by rigid sanitation and by introducing few new animals.

Keep the cows quiet and satisfied, if you want big milk production.

Go after the business hard. Don't be afraid to borrow money.

Mr. White has been in the dairy business for over 25 years, and has had no competitor for years in supplying his home city of 4,300 population with 2,000 pints of milk a day from 115 to 120 of his purebred Jersey cows.

MILK GOOD FOR LUNCHES

In a certain town in Illinois a factory employing 1,400 men has recently introduced the plan of permitting milk venders to go through the plant at 10 and 3 o'clock each day with sweet milk and buttermilk. Most of the men buy a pint each time. The foreman stated that since the drinking of milk has become so popular with the men not only is their efficiency improved, but they are more contented and even tempered.

In New Haven, Connecticut, the manager of one department store had posters made entitled "Why we should drink milk," and sold six milk tickets for 25 cents to the employees, no attempt being made to show a profit on the sales. Half pint bottles of milk were distributed to the clerks in the middle of forenoon and afternoon. Straws were furnished with each bottle of milk, as the manager believes that too often people drink milk too fast, causing bodily discomfort.

MORE BARLEY FOR FEED

With the elimination of the brewery industry a considerable amount of barley which has been consumed in beverages will be available for feeding purposes—especially for hogs—says a bulletin sent out by Armour and Company.

"In sections where barley is available," it is stated, "farmers can get good results by substituting barley for corn in the hog ration. In a recent test at the Wisconsin experiment station twelve lots of pigs were re-fed, using ground barley in the ration. The return for each pig over the cost of feed was $14.38 for the barley-fed pigs and $12.38 for the corn-fed pigs.

"Interesting facts were brought out in this experiment as to how barley might be used in various combinations, one being barley and whey, which netted a handsome return, due to the quick gains made."

TESTING CALVES FOR TUBERCULOSIS

Calves may become infected with tuberculosis at an early age, and any effort to eradicate this dreaded disease from the herd should not overlook the younger animals. Diseased stock may undoubtedly transmit the ailment to calves by association with them in the same stable or feedlot and even by contact through a fence which divides the younger from the older animals.

The youngest age at which department veterinarians recommend testing calves for tuberculosis is six months. In special instances, however, numbers of animals under this age have been satisfactorily tested with tuberculin. The present regulations of the bureau prescribe a dose of two cubic centimeters of tuberculin for calves ranging from six months to one year of age.

BIG INCREASE IN HOG ENTRIES

Chas M. Paine, secretary of the California state fair, says that to date more than 1000 entries have been made in the swine department. This phenomenal increase indicates the great strides that the hog industry is making in this state and presages the greatest hog show ever held in the West. Paine states that he expects more entries, but that he is hard pressed to find pen room for those already entered.

CARE IS NEEDED IN GIVING SALT TO HOGS

Salt poisoning of hogs is not of rare occurrence, according to an article by H. C. H. Kernkamp, University Farm, St. Paul. Pigs, says Mr. Kernkamp, should not be given salt as other farm animals are. Whenever salt is used for pigs it should be mixed with the feed or used as one of the ingredients of a tonic or conditioner. It should never be placed in a container alone where the hogs have free access to it.

BUFFALO GNATS

This pest of early summer is one of the worst biting insects we have. In swampy land they sometimes become so numerous as to make pasturing an impossibility. The eggs are deposited in shallow streams, the larvae attaching themselves to sunken logs or stones and there remain feeding on material which the current carries to them.

The only known preventive is cleaning and deepening the stream channels, for the gnat breeds only in shallow water.

Tulare Duroc Sale a Success

July 16, the Tulare County Duroc-Jersey Breeders' Association held its second annual sale at Tulare Fifty-nine head were sold for an average price of $119 with a top of $300 paid by Alex Whaley of Tulare for No. 6. The sale was additional evidence of the determination of the pure bred live stock breeders of Tulare County to make their county one of the leading livestock centers of the state. The sale was the first to be held in the new livestock sale pavilion which was recently completed through cooperative effort on the part of the breeders and the business men of Tulare.

Quite different was this sale, as expressed by several of the older breeders, from the first sale held last January. At that sale considerable difficulty was experienced in gathering a consignment of 30 head, but in this sale twice that many were secured with ease.

The sale attracted breeders from all parts of the state and while the majority of the animals went to found new herds, a goodly number were purchased by old and established breeders. Among the breeders present from a distance were: W. R. Gatton, manager of the Diamond Bar Ranch, Spadra; M. C. Allen, Winsor Ranch, Bonita; Elmer Lamb, Ceres; Harvey M. Berglund, Dixon; Clayton Slocum, Willows; F. D. Burr, San Francisco. Other prominent live stock men about the ringside were: Professor J. I. Thompson, University Farm, Davis; Chas. L. Hughes, manager of the California Breeders' Sales and Pedigree Company, Sacramento; J. J. Doty, publisher of the Duroc Bulletin, Chicago, and C. R. Thomas, manager of the Los Angeles Live Stock Show. At the opening of the sale J. K. Macomber, president of the Tulare County Livestock Breeders' Association, introduced M. C. Zumwalt of the Tulare Board of Trade, who told of the results obtained by close cooperation between the breeders, farmers, merchants and bankers of Tulare. J. J. Doty discussed the modern Duroc-Jersey type. Chas. L. Hughes gave a very concise review of the rapid development of all kinds of pure bred live stock in this state and discussed the relative values of a few years ago and those of today. Professor J. I. Thompson told of the recent results of feeding tests of grades, crosses and pure bred hogs.

Col. George W. Bell served as auctioneer and displayed unusual ability on the block.

The complete sale report follows:

Consignment of Henry Cummins, Visalia
1. F. D. Burr, San Francisco, $130.
2. Allen Thompson, Visalia, $100.
3. Mrs. W. L. Fisher, Visalia, $100.
4. Chas. Hubbard, Riverdale, $115.
5. C. C. Pittam, Honolulu, $150.

Consigned by Joe N. Chinowth, Visalia
6. Alex Whaley, Tulare, $300.
7. A. B. Tieck, Bakersfield, $140.
8. F. D. Burr, $135.
9. J. G. Roberts, Madera, $85.
10. J. G. Roberts, $135.
11. H. E. Spires, Carruthers, $100.
12. Post Card Ranch, Corooran, $100.

Consigned by Clifford Farms, Strathmore
13. Chas. Hubbard, $70.
14. J. W. Schmitz, Madera, $165.

Consigned by Chas. E. Ellis, Tulare
15. G. L. Caldwell, Visalia, $90.
16. A. E. Poston, Tulare, $135.

Consigned by Fred B. Ellis, Lindsay
17. J. W. Schmitz, $135.

Consigned by R. C. Sturgeon, Tulare
18. Mrs. W. L. Fisher, $105.
19. J. G. Roberts, $90.
20. J. R. Wissenberger, Terra Bella, $70.
21. Mrs. W. L. Fisher, $130.
22. Sturgeon Bros., Lemoore, $140.
23. J. W. Schmitz, $95.
24. J. W. Schmitz, $105.
25. A. E. Poston, $105.
26. J. C. Rodgers, Wasco, $125.
27. W. F. Thompson, Porterville, $100.
29. J. A. Wissenberger, $90.
30. W. J. Higdon, Tulare, $150.

Consigned by S. A. Williamson, Visalia
31. Elmer Lamb, Ceres, $110.
32. S. M. Padis, Santa Ana, $125.

Consigned by W. J. Stewart, Visalia
33. J. W. Schmitz, $160.
34. M. C. Allen, Bonita, $180.
35. W. A. Jenkins, Tulare, $115.
36. M. C. Allen, $95.
37. W. L. McDowell, Strathmore, $100.

Consigned by Alex Whaley, Tulare
38. Mrs. W. L. Fisher, $75.

Consigned by Allen Thompson, Tulare
39. Mrs. W. L. Fisher, $155.
40. R. C. Sturgeon, $140.
41. Mrs. W. L. Fisher, $100.
42. J. R. Wiessenberger, $125.
43. C. W. Townsend, Bakersfield, $145.
44. J. R. Wiessenberger, $210.
45. J. W. Schmitz, $160.
47. W. L. Caldwell, $95.
48. W. A. Meyer, Sacramento, $105.

Extra. R. E. Chinowth, $110.
51. W. F. Thompson, $120.
52. Oscar McDowell, Strathmore, $105.
53. Mrs. W. L. Fisher, $100.

Consigned by J. P. Walker, Visalia
54. W. L. Caldwell, $75.

Consigned by Fulgham Bros., Visalia
55. Frank Keese, Tipton, $65.
56. Elmer Lamb, $130.
57. C. P. Morgan, Shafter, $110.
58. W. L. Caldwell, $95.

Consigned by Tagus Ranch, Tulare
Extra. Mrs. W. L. Fisher, $75.

PROMPT CUTTING MEANS MORE ALFALFA

Experiments conducted at the Nebraska agricultural experiment station indicate that alfalfa produces more if attention is given to the proper time of cutting. Tests were made for total yields per season when alfalfa was cut two, three, four and five times. It was found that three or four cuttings, depending on the season, gave the largest yield for that section of the state in which the experiment station is located. "Forage Crops," Experiment Station bulletin 169, says there are two indexes for the proper harvesting time. They are the appearance of the first bloom and the starting of a new growth at the crown and lower part of the old stem. Cutting should begin at the appearance of either index. Experiments also show that getting hay into the stack or barn at the proper time means a saving of more leaves, which form 50 per cent of the value of the hay. In good drying weather a half day or less in the swath and a day in the windrow will ordinarily do. Rain or dew is more likely to cause mold in the stack than the moisture in the plant. It is often better to stack a little green and let the hay brown cure than to have it rained on or lose too many leaves.

IT'S A GAY OLD WORLD

It's a gay old world when you're gay
And a glad old world when you're glad,
But whether you play
Or go toiling away
It's a sad old world when you're sad.

It's a grand old world if you're great
And a mean old world if you're small;
It's a world full of hate
For the foolish to prate
Of the uselessness of it all.

It's a beautiful world to see
Or it's dismal in every zone.
The thing it must be
In its gloom or its glee
Depends on yourself alone.
—National Magazine.

"How sweet to think, whate'er the day,
Howe'er we go or come,
Or slow or fast hours slip away,
The nightfall brings all home."
—Mrs. M. E. C. Bates.

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL

For the Human Body — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. DEYER.

Price $1.75 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet K.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Brighton Farm Herds
Registered Shorthorns
and
Berkshires—Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

Inaugural Sale
of
POLAND-CHINAS
by the
Fresno County Poland-China Breeders Association
Sale will be held on
The Fresno Fair Grounds
Wednesday, August 20
50 Head of Bred Sows, Bred and Open Gilts

All animals in the sale have been carefully selected from the 17 consignors and those bred have been bred to some of the best *big type Poland-China* boars in the state.

Sale at 12.30 P.M. Free Lunch 11.30 A.M.

Col. Geo. W. Bell of Tulare is the Auctioneer

Write Walter C. Ficklin, Sec'y,
Bank of Italy Building, Fresno, Calif. for Catalog

Alfred Buckland, Pres. Walter C. Ficklin, Sec'y

M. BASSETT, Hanford Calif.
Breeder Big Type Poland-Chinas
A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

YOUNG JUMBO pronounced one of the greatest Poland-China boars in Callfornia. Lendorris Liberty Bond—weight 315 pounds at seven months—a son of Liberty Bond, a boar that many competent to judge call the greatest young Poland-China boar in America. Foundation stock from our herd starts you right.
Lendorris Ranch
W. L. Haag & Son Hanford, Calif.
Bred Sow Sale Sept. 17, 1919

The Yankee, Jr.
will give the Poland-China breeders of California the opportunity of securing the blood of the famous "THE YANKEE." Boars by him are going to head some of the greatest eastern herds. Don't overlook getting this blood in my bred sow sale Sept. 17th.
JOHN BERNSTEIN Hanford, Calif.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 33,000 readers, weekly.
Liner rates: Single insertion 3c per word; 35c per issue minimum charge.

TREES

For Sale — Budding Cloth 50c yard; also leading varieties citrus nursery stock. Selected and pedigreed buds. Order quick for early delivery. Cyrus W. Wilhite, Citrus Nurseries, Glendora, California, Box 154.

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

400 Late Valencia, ½ inch to ⅝ inch, one year old buds. Edw. H. Rust, 1625 Bank St., So. Pasadena, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

MISCELLANEOUS

Look, Tobacco—Homespun, chewing or smoking, mild or strong. Lb. 50c; 10 lbs. $4.50 postpaid. One order will convince what real tobacco is. Write for particulars. RANDOLPH TOBACCO FARM, PADUCAH, KENTUCKY.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

War Pictures, best ever brought over. Postpaid each 25c, set of 10 for $2.00. Cash Nurseries, Sebastopol, California.

WANTED

Wanted—Salesmen and Agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1.00. W. Porter Barnes, Santa Rosa, California. Dept. A-11.

Wanted: Mammoth Bronze Hen Turkeys 4 to 6 months old—State age, weight and price. Address: Box 26, California Cultivator, Los Angeles, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted to Hear From Owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Feeder Hogs Wanted. R. B. & N. Ranch, Waukena, Tulare Co., California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also handpicked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Box 501, Fowler, California. Write for circular, prices on seed and plants, Sudan, Dwarf Milo Maize, Honey Sorghum, Amber Cane.

Seed Potatoes for August planting: True White Rose, British Queen and Earliest of All. Stock limited, order early. H. A. Hyde, Watsonville, California.

RABBITS

Raise Rabbits for us. We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock, Paul Kruger, Watsonville, California.

FERTILIZER

EARL A. HOLCOMB
SOIL LIFE
Fertilizer and materials mixed to balance every soil. Bureau of testing and advice free on all horticultural and agricultural subjects. 1022 Washington Bldg., Los Angeles. Phone 62907; res. 16116.

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101. Watsonville.

FOR EXCHANGE

FOR EXCHANGE—INCOME FOR RANCH.
2-story modern flat, furnished. 4 private baths. Income $75 per month. Delightfully located, Pomona. Price $8500. 10-room house, very close in, fine apartment site, Pomona, $4500. Want well located improved ranch to value or less in coast counties, for either or both, from San Diego to Santa Rosa.
G. L. FRISBEE,
Phone 98 Pomona.

SHEEP

Sheep For Sale—500 ewes with lambs by side. Have rented my ranch and want to sell. A good buy for a small place. John M. Cox, R. F. D. No. 1, Box 160, Brawley, California.

MACHINERY

FOR SALE—REBUILT RANCH TOOLS.
50 windmills. 100 tanks.
Several thousand feet irrigating pipe.
2000 ft. 9-in. 38½c.
500 ft. 10-in., like new, 42½c
500 ft. 5-in., 22c.
500 ft. 4-in., 16½c.
300 ft. 4-in. riveted, 15c.
100 ft. 8-in., O. D., $1.15 ft.
100 4½-in. O. D., 35c.
Standard and casing gates.
2-in. to 8-in., save half.
50 brass pumping cylinders.
3x12-in. to 8x84-in.
Pumps—Single and double—Pumps.
Dozen horizontal centrifugals.
Dozen plunger pumps.
2000 feet wood and iron rods.
for all sized pumps.
Windmills:
8-ft., 10-ft., 12-ft. and 16-ft. sizes.
Most all makes.
Used redwood tanks.
2000 to 50,000.
50 galvanized tanks.
100 to 5000 capacity.
Every article mentioned in this ad. in stock and can be shipped on 48 hours' notice. Remember the new machinery you buy will be like these in a year or so, but not necessarily worn out. Every article we sell guaranteed to do the same work as new ones, or money back. Liberty Bonds accepted face value, also buy. Office DEMMITT CO., upstairs, 120 N. Main. Yards, 816 Yale, Los Angeles.

Used Engines and Plants For Sale. Replaced by electricity.
8 horse power R. & V. complete with pump $300.00.
15 horse power Samson complete with pump $400.00.
20 horse power Samson engine $150.00.
6 horse power International engine $75.00.
6 horse power Upright Fairbanks $50.00.
25 horse power White & Middleton $290 00.
32 horse power N Type Fairbanks engine $400.00.
15 horse power New Western complete with pump and all accesories ready to install $550.00.
4 1½ horse power Bull Pup engines (new) $25.00.
2½ horse power Gilson engine $50.00.
20 horse power Simplicity engine, A-1 condition and mounted on heavy trucks $500.00.
28 horsepower Lauson engine and 8-in. pump (almost new).
1 Samson tractor, size 12-25 working every day $600.00.
24-in. Samson geyser grain separator with 20 feet extension feeder. Price on application.
8-in. Krogh pump $120.00.
6-in Gould pump $90.00.
Come and see for yourself. Phone at our expense or write us when you will be here that we may be able to give you the proper time and attention. Harry Crowe. Phone 90. Tulare, California.

Corn Harvester — One man, one horse one-row, self-gathering. Equal to a corn binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kansas.

One No. 40 Eagle Typhoon Ensilage Cutter. This machine has been used by us only a short time and is as good as new. Can be seen at our stables, 727 Commercial St., Los Angeles, California Truck Company.

CATTLE

BUTTE CITY RANCH
SHORTHORN CATTLE, SHROPSHIRE SHEEP, BERKSHIRE HOGS, SHETLAND PONIES. Stock for sale at all times. Second Farm Sale—all breeds—August 2, 1919. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show Herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Ayshires—Registered Yearling Rob Roy bull. Farmer's price. Redwoods Ayrshire Farm, La Honda.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

GOATS

For Sale—Two 4-months old Toggenburg kids from doe giving more than one gallon at first kidding. Sister to this doe still giving 2½ qts. at end of year and gave over 1800 pounds during past 12 months. Kids $25.00 each. W. E. Johansen, 3962 So. Hobart Blvd., Los Angeles. Phone 77316.

61 Head of Angora Goats for sale. K. J. Easby, Jr., Merced, California.

HOGS

CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

POLAND-CHINA BARGAINS

BRED SOWS GILTS BOARS
In order to reduce our herd and to make room for young stuff we find it necessary to offer for immediate sale a choice lot of Poland-China sows, gilts, and boars. The offering represents as good blood lines as we could buy and has been nicely grown out. All are cholera immune. Prospective buyers should not overlook this opportunity. You will be surprised at the ertremely reasonable prices we are quoting. Scrub hogs are not profitable. Our registered hogs are money makers. Write now for prices. Act quick. These hogs must be sold. AMERICAN HOG CO., 920-922 CROCKER BLDG., SAN FRANCISCO.

BERKSHIRES BERKSHIRES
ANCHORAGE QUALITY
We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

TWO SOWS AND A BOAR
$100 the trio.
Two sow pigs from ten raised, sired by Baron Duke 201st, 780-pound $1100 Grand National Champion, from Rival B. Princess, a prize winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion Boar from Symboleer Belle, and of Superbus blood lines; a boar from a litter of ten raised, big, long typy, stretchy pigs. Sandercock Land Co., in charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, California.

Billiken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

For Sale—Registered Duroc-Jersey pigs, McKee Bros., Pilot Defender blood, owned by C. T. Thompson, Bishop, farrowed April 3rd, 1919. Very fine. For particulars and breeding, write: W. E. Detrick, Bishop, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Pathfinder and King's Col. Stock, immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Have Sold All the Pigs advertised recently. Will have fine pigs from spring litters for sale in June. Fine Shropshire ram lambs, pure bred, for sale. J. J. Prendergast, Redlands, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Duroc-Jersey Swine For Sale, best blood lines. Bred sows and gilts, service boars. Jersey Queen Farm, San Jose, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

POULTRY

Baby Chicks For Sale—250,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock. 25, $3.50; 50, $7.00; 100, $12.50. Special prices, 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition. No money in advance; pay on delivery. Shipped safely anywhere West of Rockies. Finest hatchery in the world. Established 1898. Must Hatch Incubator Company, 438 Seventh Street, Petaluma, California.

White Leghorns are the most profitable breed of poultry. If you are in the business for profit you will eventually have them. Early broilers; early payers; early PROFITS. We sell only WHITE LEGHORN BABY CHIX from heavy laying HOGAINZED hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

It's like groping in the dark to attempt raising poultry successfully without some knowledge of the business. Poultry for Profit teils you how to house, feed and raise chickens, ducks and turkeys successfully in California. It contains 225 pages with 18 pages of illustrations and bound in cloth $1.00 postpaid. Cultivator Publishing Co., 115 N. Broadway, Los Angeles, California.

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
It's our business to improve egg production for you. We have the stock planned for your success. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trapnested S. C. White Leghorns every day in the year since 1912. Box B 337, Inglewood, California.

THE MISSION HATCHERY
August and September Baby Chicks White and Brown Leghorns, R. I. Reds, White and Barred Rocks. Priced reasonable—quality stock. Supply limited BOOK EARLY. The Mission Hatchery, Box 27, Campbell, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Baby Chicks From My Thoroughbred, heavy-laying strain of S. C. White Leghorns. Am booking orders now for July delivery at $12.00 per 100, $110.00 per 1000. Prices for August and September delivery on application. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Baby Chicks—Our large, bred to lay S. C. White Leghorn hens will produce the pullets that will bring in the dollars this winter. Tupman Poultry Farm, Ceres, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Exchange 1 60-egg incubator new, for 2 young laying hens. No. 27 Shawmut, California.

ENGINES

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

Gas Engine 6o H. P. Commercial, also 8 inch horizontal pump used one day. Sell at bargain. Prentice Ranch, Escondido, California.

For Sale—20 Horse Gasoline Engine (Olds), perfect condition, with belt and pump; cheap for cash. H. M. King, Anaheim.

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 South Los Angeles Street, Los Angeles.

JACKS AND JENNETS

For Sale at a Greatly Reduced Price—I am closing out my breeding business and will sell the following almost at your own price—must be sold soon. One Registered Jack, a good one. Sixteen good brood mares, all bred. Eight head of 2 year old colts. 67 young mules. All well bred animals. Chas. Hubbard, Box 99, Riverdale, California.

For Sale or will exchange for land fine bunch black registered Jacks and Jennets. No better bunch to be found in California. A. L. Allen, Perris, California.

EDUCATIONAL

BEST OF BUSINESS TRAINING
Munson School
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Private Secretaries.
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It's Easy to Prepare For a Bookkeeping position while earning. Write for Booklet X 21. It's free. Pacific Extension University, Spokane, Washington.

DUCKS

Mammoth Pekin Ducks, extra fine for breeders, 2 to 4 months old, $1.25 and $2.00 each. August Surtman, Merced.

FARM LANDS FOR SALE

For Sale: 58 Acres — Highly improved farm—½ mile from city limits of San Bernardino, California. Land partly drained with tile; part in alfalfa, part in corn and other crops. Small orchard of about 75 trees; apples, peaches, plums, prunes, apricots, pears, almonds, walnuts, figs and grapes—also small fruit. Nearly new 2-story 9-room house in best condition, bath and electric light, water in house. Good horse barn, hay barn, cow barn, milk house, hog house, chicken house and garage. Buildings electric lighted, water at buildings for stock. One metal 100 ton silo, ensilage cutter—6 head horses—32 Holstein cattle consisting of one registered bull, one registered cow and her heifer calf, 2 registered heifers bred, 16 grade cows, 3 yearlings and 10 calves. Hogs and chickens. For information address R. F. D. 2, Box 73, San Bernardino, California.

1465 Acres—750 of which is farming land and if properly farmed will produce from 7 to 10 thousand bags of grain; balance of land pasture and timber land all fenced in three fields, with 4 barbed wires and redwood posts. Good 6-room house (new), large barn and ten thousand gallon steel galvanized tank and windmill—water soft and quantities of it, which is piped into each field, with stock troughs. Some years there are tons of acorns on this place. Several other stock and grain ranches ranging in size from 40 to 7000 acres. Write me your requirements and I will fix you up. C. P. Gould, 334 East Ocean Ave., Long Beach, California.

CITRUS LAND FOR SALE

You can buy citrus orchards at Escondido as well located, as productive, for one-half to two-thirds you must pay elsewhere. Why pay more? Walnut land at $200 per acre. All kinds of properties for sale. Bargains in three citrus fruit orchards. You must see to appreciate. Also a 26 acre tract I have for sale. MOTTO: ALWAYS FOR LESS. Escondido Valley is the famous Sun Kist Vale. Theron J. Smith, Real Estate, Escondido, California.

For sale Stock Ranch—4000 acres near San Bernardino, California. Land is level and excellent for alfalfa and stock. Several artesian wells. Price $300,000 including fine improvements and some stock now on ranch. Owner will consider some city property as part payment. Easy terms on balance. F. P. Turner, 119 East Colorado Street, Pasadena, California.

For Sale—High Class Bearing Orange Grove of Eight Acres, fronting on boulevard—El Camino Real—just outside city of Anaheim; the Valencia section. In fine condition, and pays 20 per cent. Price $24,000 including balance unpicked crop, about three-fifths. I have also a 3-year-old grove, ten acres, $10.000. H. M. King, Anaheim, California.

Mountain Ranch—334 Acres, 90 acres under cultivation, 30 acres Bearing Orchard, balance in Timber, Oak and Pine. Free Water, deep, rich soil, eight-room house, 100 tons hay, barn and out buildings. Will subdivide. Price $7500. Terms. Address, Paradise Ranchita, P. O. Box 123, Paradise, Butte County, California.

For Sale by Owner—18 Acres, improved, about 5 miles south of Williams, 11 miles southwest of Colusa, county seat of Colusa County, near State Highway. Alfalfa, abundance of water for irrigation. Ideal poultry and dairy ranch. Address: C. A. Hanson, Williams, California.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

For Sale — Imperial Valley's finest fruit and alfalfa farm for sale at a bargain, 160 acres. Earliest grapes and apricots in the United States. C. A. Myers, 1119 Haas Building, Los Angeles.

160 Acres Unimproved rich farm land for sale in Yolo County. $50 per acre. Three miles from town. A. L. Friel, College City, Box 31, Colusa County, California.

1280 Acres—300 of which is good farming land, balance good pasture, with some oak and pine timber on it. Good 10-room house (new), two barns, hog houses, chicken houses, corrals, windmill and tank; also engine to pump water when mill don't run; quantities of water, dairy house with separator, family orchard, quantities of wood. Household furniture, implements and tools, 12 horses, harness, 13 cows, 15 head of young cattle, hogs, chickens—in fact, everything on the ranch goes with it. All fenced and cross-fenced. A ranch where you can step right in and begin to make money if you will work. Several other stock and grain ranches ranging in size from 40 to 7000 acres. Write me your requiremens and I will fix you up. C. P. Gould, 334 East Ocean Ave., Long Beach, California.

FARM LOANS

There are Advantages in Borrowing Money secured by real estate from a strong reliable and well managed company of long standing, organized to transact a mortgage business exclusively. You can deal direct with this company and no commission or brokerage is charged. Money is loaned at lowest current rates and you can keep it as long as wanted, provided the security remains good. You are under no obligations in borrowing here, as we always have money of our own to loan and are constantly seeking new and acceptable acquaintances. Borrowers are assured here of that security, safety and protection under all circumstances that only a well-established company of large capital and surplus can offer. Loans are made from 3 to 5 years on ranches, orchards, business blocks, residences, etc. We would be pleased to have you call or write your needs. MORTGAGE GUARANTEE COMPANY, Mortgage Guarantee Bldg., 626 So. Spring St., Los Angeles. Tel. 10707. Fresno office, Room 20, First National Bank Bldg.

PIPE

"TESTED" and "GUARANTEED" Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO.,
Established 1906.
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300 Million Acres of "Free" land in U. S. "The New Homeseeker" a 104 page book WITH MAPS and ILLUSTRATIONS, showing millions of acres of vacant public homesteads, timber, mines or grazing lands. Founded on historical facts. DOES NOT MISLEAD. Read warnings "official," eliminates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico, Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico. Describes water, soil and climatic conditions, all the principal U. S. land laws. A marvelous publication, just off the press. Mailed anywhere, $2. Address "THE HOMESEEKER," Dpt. M. 3rd floor Grant Bldg., Los Angeles, California.

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IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.
The Yellow Front. Established 1892
112-118 S. Los Angeles St. Los Angeles.

Sell Cheap One Owens 16x20 double cylinder bean thresher used only on 100 acre crop. Prentice Ranch, Escondido, California.

DOGS

Collie Dogs For Herding, cattle, sheep and turkeys. John G. Mee, breeder of Bronze turkeys and Embden geese. St. Helena, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Slobbering Horse

Can you inform us of a remedy for a bad slobbering horse? He slobbers continually and there seems to be nothing wrong as far as we can tell. He has just recently had his teeth well fixed and otherwise he is perfectly normal, although getting somewhat thin. His manger and stall are constantly wet from the excessive secretion.—Subscriber, Santa Barbara

From "Diseases of the Horse," issued by the department of agriculture we note on page 45: "This is often seen as a symptom of irregular teeth; inflammation of the mouth or tongue, or of the use of such medicines as lobelia, mercury, and many others. Some foods produce this, such as clover, and particularly second crop; foreign bodies, such as nails, wheat chaff, and corncobs becoming lodged in the mouth. If the cause is removed no further attention is necessary, as a rule. Astringent washes may be applied to the mouth as a gargle or by means of a sponge."

From "The Farmer's Veterinarian" by Burkett: "Some kinds of food cause an unnatural flow of saliva. Fresh crimson clover hay is one of these. Of course the continual flow is undesirable and unpleasant. It is unnatural and should be checked as soon as possible. This can be accomplished by changing the feed and then washing the mouth out with alum water. If a change is not observod soon, give a good physic. For horses use eight teaspoons of bitter aloes, a teaspoon of common soda and a teaspoon of ginger. Mix these in a pint of water and give as a drench. For cattle dissolve a pound of Epsom salts, a tablespoon of common soda and a tablespoon of ginger in a quart of lukewarm water and give as a drench.

Kangaroo Rats

Is there any way of ridding land of kangaroo rats? Some of our land is badly infested with them. They do the most harm at bean planting time as they eat the planted beans before they germinate. In some places they are so bad that beans had to be planted three times. As the runways of the rats are very small and the land soft the setting of traps as well as the laying of poison in the runways is impossible as the land falls in as quick as you open the runways.—Subscriber, Arroyo Grande.

Our experience with kangaroo rats has been as pets, therefore we can only give general suggestions and at the same time ask subscribers who have had experience in controlling them when they become a pest. The first suggestion we would make is to write State Horticultural Commission, Forum Building, Sacramento, and ask for the California Ground Squirrel Edition of the Monthly Bulletin, Vol 7, Nos. 11 and 12. While this is principally devoted to ground squirrels and the method of control, there is a short chapter, or rather appendix, touching upon destruction of pocket gophers, mice, jack rabbits, rats, etc. While waiting for this book to come get busy with carbon bisulphide, Klimol, burning sulphur, smoke, or other poisonous gases and fill their runways so full that many will be destroyed. We recently saw the operation of a machine intended to dust sulphur on vines and trees but which had an attachment which might be lighted and as the sulphur is blown through the machine it burns and the fumes are forced into gopher holes, or squirrel burrows. Such a machine as this, as well as the ordinary bisulphide of carbon fumigating, will destroy thousands of the rodents.

Potao Scab

Would you kindly tell me the cause and remedy for scabby potatoes?—Subscriber, Buena Park.

The cause of the scab is a fungus or rather a bacterium, Actinomyces chromogenus. There is no remedy for the crop now growing and infested, but by planting in disease free soil, clean seed which has been dipped, one may have a crop entirely free from the pest One should refrain from applying lime, manure, etc. to the ground while the potatoes are growing. The dip usually used is: Formaldehyde, 40 per cent solution, one gallon; water, two ounces. Immerse potatoes one hour before cutting.

Fertilizer

What is the best fertilizer and the best method of collecting, rotting, and applying barnyard manure?—Subscriber, Buena Park.

There is no best manure, for the fertilizer and manure question is dependent upon so many things as to crop, condition of soil, rainfall, etc. that an article which is the best in one case may not be best in another. However, we may say that stable manure from grain fed animals is generally considered the most desirable. As to commercial fertilizer the question is too big and there is too much diversity of opinion, for some believe the "simples" such as mineral nitrates or blood or tankage for nitrogen, bone or rock phosphate for phosphorus, or sulphate or muriate for potassium, are best while others believe complete mixed commercial fertilizers are best. Unless one understands the situation more than most of us do it is perhaps best to apply the complete fertilizer although many maintain that California soils are sufficiently rich in potash that such a high priced product need not be applied. Also another general statement: There is little danger of ever getting too much vegetable matter in our California soils. Do not compost manure but apply as rapidly as made and if possible work in as made.

Poultry Diseases

Where can one get literature on the diseases of poultry?—Subscriber, Fresno.

Mrs. Koethen's book, "Poultry for Profit" gives several pages to diseases and treatment and at the same time puts greatest emphasis on the first paragraph of the chapter on sanitation and prevention. However, we are all rather too lax, and conditions which permit disease are allowed to prevail at times. For such the experiment station, University of California, Berkeley, has published, and will send for the asking, Circular 150, "Roundworms in Poultry"; Circular 162, "White Diarrhoea"; and Bulletin 156, "Fowl Cholera". From the secretary of the Department of Agriculture, Washington, D. C., one may secure Circulars 170, "The Fowl Tick", of the bureau of entomology, by F. C. Bishopp; Farmers Bulletin 801, "Mites and Lice on Poultry"; Bulletin No. 8, "Investigations concerning Infectious Diseases Among Poultry", by D. E. Salmon of the bureau of animal industry; Bulletin No. 12 of the Bureau of Animal Industry, "Tapeworms of Poultry", by Salmon. It is possible the department has other publications on poultry diseases. The Agricultural Experiment Station, Orono, Maine, has issued a very complete bulletiu, "Poultry Diseases and Their Treatment". We are not certain whether this would be mailed to residents of states other than Maine, but presume that if postage were sent to cover it probably would be mailed.

Flies on Lemon Blossoms

Three years ago we set out two lemon trees that were then two years old. They have grown and look well, but we never have any lemons. There is a fly that gets on the blossoms and the blossoms fall off. Do you think the fly is the cause?—Subscriber, Palms.

These flies are not the cause of the short crop. Their exact name cannot be given, but enough is left of the specimens sent in the letter to show that they are one of a large family of small beneficial insects which are usually present in large numbers where there is aphis infestation on tips of the trees. So our guess is that these flies indicate that your trees were infested with plant lice, or aphis. They should have been sprayed with tobacco extract or weak kerosene emulsion. Watch for the little green bugs on the tips of the branches and if present give them quick attention.

Tree Protectors

For young citrus trees which is the better plan, to whitewash or to use tree protectors?—Subscriber, Los Angeles.

We would prefer the yucca protectors for they afford better protection from sun, and in addition afford perfect protection from rodents or other pests.

Pruning Young Citrus Trees

In pruning young citrus trees is the better plan to cut off all but three or four main branches and then permit just two on each of those? On young trees how can you tell sucker wood from fruit wood?—Subscriber, Los Angeles.

Instead of allowing all the branches to grow at will and ripen their wood we would prefer to have the growth controlled by thumb pruning, that is, pinch the young tender tips of all excepting the three or four which are to be preserved. These should be carefully selected according to their distribution around the main trunk so as to balance the tree. The others pinch back week by week as suggested above so as to control and subdue, still allowing leaves to remain and encourage most thrifty growth. Then at the end of the first year more may be entirely removed as may seem best. The same plan to be followed with the small branches which will come out on each of these foundation branches. A sucker may be considered the strong, vigorous growing branch or shoot which may be coming out near the ground and grow so vigorously that it in time subdues the main trunk of the tree and ultimately the entire tree. The best way to deal with these suckers, provlding the selected trunk of the tree is vigorous in growth and has not been injured, is to suppress by continual pinching back of the young growth, or it may be removed entirely Again, some growers call suckers any strong growing branches which come from the top of the tree. These may be controlled by the same method of pinching back. If allowed to grow without control they soon make another top of the tree. Wood bearing branches, on the other hand, instead of throwing out one or possibly more strong shoots which grow directly upward, are the horizontal branches, yet vigorous enough that they will send out a large number of blossom twigs next spring. The present day method of pruning, especially with lemon trees, calls for suppressing this strong upright growth and forcing the sap into these smaller fruit bearing twigs.

LOS ANGELES DEMONSTRATION

Manager O'Neil of the Traction Engine and Implement Dealers' Association reports Los Angeles lining up for a great demonstration this fall, presumably some time in September. The association has secured through the courtesy of George A. Hancock a portion of the La Brea Ranch at the corner of Melrose and Crescent Avenues just west of the city. This is not far from the demonstration grounds of last year but affords better conditions. The site is just east of Mercury Aviation Field, formerly De Mille Field.

Tannin is all right for tanning leather, but nobody wants it in tea.

The way to get tea-flavor without tannin is to buy a fine tea and then not boil it—steep it just long enough to get the tea-flavor.

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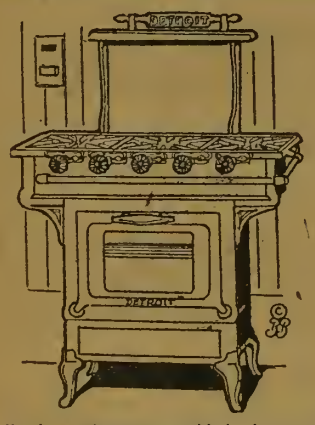

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Household Department

THE LANDLORD

The landlord used to come around
As regular as a clock.
Upon the door we'd hear him pound—
Oh, 'twas a glad and joyful sound
To hear that landlord knock!

He knocked upon the entry-way,
He knocked upon the door;
He came around the first of May
And saw the puppies at their play,
And then he knocked some more.

That landlord used to hand us knocks
Because we had a cat,
A bird, a rabbit in a box,
And half a hundred Plymouth Rocks—
What think you, now, of that?

But when he acted meanest yet
Was over Gwendolen;
When she was born, the littie pet,
He growled and said, "You mustn't let
This thing occur again."

We have another landlord now
And he is different.
We've bought a parrot and a cow—
He doesn't holler, anyhow,
Or press us for the rent.

Now Gwendolen has sisters four
And she has brothers two;
They pound the walls and pound the floor,
And still this landlord doesn't roar
Like that one used to do.

We've put that landlord mean to rout,
And I will tell you how:
We have a cottage farther out,
With vines and roses 'round about,
And I'm the landlord now.

METHODS OF WORK

OUR article in last week's Cultivator dealt almost entirely with equipment for making housework more business like. This week we give best methods of cleaning floors, woodwork, walls, windows, metal surfaces, etc., as described by Ruth McNary Smith of the Oregon agricultural college.

It is important that the housewife should not only have the proper tools to work with and a practical working plan, but also the best methods of doing her work. The following suggestions are made for the average housekeeper who does the work herself with the cooperation of the members of her family.

Care of Floors

Floors should be made of well-seasoned, well-laid two-inch boards, which give better wear although they cost slightly more. The grain of wood floors should be straight because boards with straight grain are less likely to splinter.

Short lengths are undesirable and should not be accepted. Hard wood floors wear better, look better, and are more easily cared for than soft wood but the cost is high in some localities. However, the living-room floor should be maple or oak, if possible.

An easily cared for finish on pine or fir is one coat of light brown stain and two coats of orange shellac, after the cracks have been filled with a preparation for that purpose. Applying shellac once a year, or twice a year in front of the doors, will keep such a floor in good condition. The best way of removing the daily accumulation of dust and lint from such floors is by means of an oiled mop. Floors should not be painted except as a last resort. A painted floor may also be dusted with a mop and washed occasionally with lukewarm water containing a little kerosene. A finish for a hardwood floor requiring but little care and wearing well is one made by filling, shellacing and rubbing down. The waxed floor requires constant polishing with weighted brush and frequent rewaxing and is not practical in the average home unless a man can do the necessary polishing.

Woodwork

The woodwork should be as plain and free from grooves as possible. Stained woodwork in gray or similar tones is attractivo but unless shellaced or varnished over is absorbent and not durable.

The ordinary shellaced woodwork may be cleaned occasionally by going over it with a cloth dipped in tepid water containing one tablespoon kerosene to about a pint; it should be dried immediately with dry cloths. Painted woodwork may be washed occasionally with a good white soap, such as Ivory, followed by thorough rinsing and drying. Whiting applied on a damp cloth will usually remove spots and finger prints.

Furniture

Nothing saves time and labor like plain, dull finished furniture of substantial design. General dusting should be done with a black cheesecloth duster prepared in the following manner. Dip the cloth into hot water, wring dry, then put into boiled linseed oil which has been thinned with one-third its volume of turpentine. Wring out the duster and hang outdoors until perfectly dry. It may be washed and retreated. Cedar oil may be substituted for the linseed, but not being a drying oil it is apt to be more greasy.

Furniture polishes should be avoided as most varieties contain cheap shellac which only covers scratches temporarily and leaves the wood in worse condition than before. If not completely removed, any oily restorative when applied to wood will collect dust and form a dark, sticky spot. This sticky surface may be removed with turpentine. Oils, in general, with the exception of paraffin and poppy seed oil, tend also to darken wood. Scratches may be concealed by applying on a cloth a small amount of water color for wood, to match the finish of the furniture.

White spots due to heat or water are easily removed by applying an oil of some kind such as linseed or sweet oil. The oil is then allowed to stand for an hour or so; it is rubbed vigorously and the treatment repeated until the varnish becomes clear once more. Care must be taken to remove every trace of oil. Sal soda and kerosene may be used for very bad spots; the soda is sprinkled on and rubbed with a cloth dipped in kerosene. Dullness due to long usage may be improved by treatment with a mixturc of two parts boiled linseed oil and one of turpentine. The oil is rubbed off completely with a woolen cloth. This treatment may be followed by applying a good polishing wax in a very thin film, allowing it to stand an hour or more, and rubbing the surface vigorously with a woolen cloth and finishing with a polishing buffer. A suitable buffer is made by covering a brick with several layers of padding, over which a woolen cloth is fastened securely.

Washing furniture occasionally with lukewarm water and kerosene, drying immediately, is also helpful in removing the greasy film likely to appear on it.

Cleaning and Polishing Metals

The same kind of polish is not suitable for all metals. Metal utensils are either solid or plated and some are lacquered to prevent darkening. Different methods of treatment are necessary to suit these different kinds of metals. If lacquered avoid polishing.

Silver, Solid. 1. Put into a bright tin or aluminum pan and boil until oxide disappears. The addition of one tablespoon of soda and one tablespoon of salt helps this action.

2. Polish with whiting or silicon and ammonia, or lard, for a satiny finish.

Plated. 1. Use method No. 2 under solid silver.

Steel Ware. 1. Polish by rubbing a cork into powdered bathbrick and then over the moistened steel. Rinse and dry thoroughly.

Brass and Copper. 1. Remove bad tarnish with vinegar and salt, working quickly and rinsing off thoroughly. (Avoid if plated.)

Polish with a paste made by mixing rottenstone with olive oil, sweet oil or linseed. Wash, rinse and polish off with a flannel cloth or chamois.

Nickel. 1. Boil in vinegar or alum mixture—two ounces powdered alum, one quart vinegar.

2. Polish with whiting and ammonia or lard and whiting.

Zinc. 1. Clean with kerosene.

Aluminum. 1. Fill utensil with water containing a little vinogar, boil five minutes or more. Wash thoroughly and dry. The addition of one-half teaspoon of vinegar to tho contents of an aluminum vessel will prevent the darkening due to the action of alkalis.

2. Polish outside with whiting and ammonia or alcohol.

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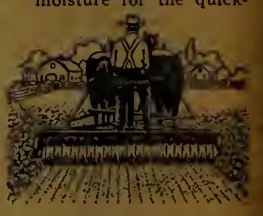

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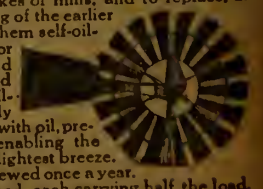

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Write AERMOTOR CO., 2500 Twelfth St., Chicago

Washing Windows

Remove paint and stains with turpentine.

For badly soiled windows prepare a thin mixture of whiting and ammonia. Apply with a cloth over surface. Let dry, rub off with clean cloths. Polish with chamois skin, with newspapers, or orange wrappers.

Put one tablespoon of ammonia into a pan of warm water. Wash windows, drying and polishing. Chamois skin is most satisfactory to finish with.

Cleaning Enameled Plumbing Fixtures

Avoid coarse scouring materials as the glaze is injured and staining occurs more readily.

Wash with hot soapy water, using kerosene to remove black marks and dilute hydrochloric acid for iron stains.

Clean occasionally with the following mixture and a brush, rinsing out thoroughly afterwards: One-half cup chloride of lime, one-half cup whiting, one cup sal soda.

Powder fine and sift or mix thoroughly and put in a glass-topped jar. Sprinkle a little into sink or tub.

Avoid the use of lye in sinks or tubs for cleaning pipes. This forms an insoluble soap plug and results in plumber bills. Sal soda and plenty of hot water should be substituted.

Plaster and Wall Paper

A long handled wall brush covered with lambs wool is useful in keeping walls free from dust but a broom covered with a sack or cloth is a good substitute.

Grease spots may be removed by covering them with warm talcum powder until absorbed.

Linoleum

Inlaid linoleum wears better and is more economical in the end than the painted variety. It is more easily cleaned if laid with a sanitary base as follows:

In measuring floors for linoleum allow two inches extra on all sides.

Fasten the edge two inches above the floor by means of a narrow flat molding, all around the room so that the linoleum joins the wall in a curve instead of a right angle. Linoleum should be shellaced at least once a year to lessen wear. Wash with lukewarm water containing a little kerosene, avoiding soap powders, yellow soaps or hot water.

The addition of a little milk to the rinsing water tends to prevent cracking.

MY FRIENDS THE HUMMINGBIRDS

I first saw my little California hummingbird before my window, running her bill into one clematis flower after another. Finding nothing, she darted off; but was soon back. Evidently she was finding little to eat, so I mixed some honey and water together, and filled the blossoms. Presently she returned, and, half-heartedly, tried a flower. At the first taste, the whir of her wings quickened, and, with an air of pleased surprise, she cleaned up every drop. Two or three other hummers discovered the new lunchroom that afternoon, and it met with instant approval.

I had always supposed that hummingbirds were timid, but three days after the first meal, one, growing impatient, came down while I was filling the flowers, and began to eat. Afterwards she hovered around my head a minute. Another time she sat down on the vine about a foot from me, and inspected me at her leisure. Later I read in a bulletin of the California Fish and Game Commission that the hummingbird was "quite courageous, and seems to have little fear of man. It has even been known to light on flowers held in the hand."

They were curious as well. If I started to pull weeds, or sat down on the porch, they sailed down to see what I was doing, and one day I noticed a very interested hummer sitting on the vine at the window, and craning his neck to watch me.

They soon decided that I was the source of supplies. If they found the flowers empty, they would sit on the wire fence or in the pepper trees until I came. Finally they learned to hunt me up. I would see a hummer hovering before a window; then, when it had attracted my attention, it would dart away to the clematis vine.

They soon learned to eat out of a flower held in my hand. One day, about a month after our acquaintance began, I held my finger in front of the flower, and slowly raised it until it touched the hummer's body. To my breathless wonder, she straightened out her legs, and finished her luncheon perched on my finger.

I learned to recognize only three of them apart. One, which came only a few times, had a fawn colored back, and was, probably, a rufous hummingbird. The other two were of the Anna variety. Their heads and backs were green, and they were gray underneath. The larger hummer learned to perch on my finger also, but he was never as trusting as the smaller one. She would fly up, and examine my face, sit down and scratch her head (she could also perform this feat in the air) pretend to fall off my finger, adjusting herself with much fluttering, eat out of a teaspoon, and run her tongue out at me. I do not think she meant this impolitely, but as a delicate mark of appreciation.

What puzzled me, however, was where she kept that appalling length of tongue. Her bill was about three-quarters of an inch long, and she could run her tongue out fully as far again I have since read that there is a small cavity at the back of the bill in which the tongue coils up like a watch-spring

The male would drive the female away if he found her at the flowers. One day, after chasing her out of sight, he took his station on a vine over the porch, now and then gazing fiercely into the sky for more hummers to conquer. Meanwhile, the female came around from the other direction, and took the last drop of honey.

Sometimes she would refuse to be driven away. Then the male would fly at her again and again, like a vicious little pendulum. He never succeeded in hitting her, but, if he had, there would have been an explosion of small feathers.

One day, after driving her off, he came to the window where I was, and, hovering in the air, sang a song of victory. It was a sweet song of five or six notes, and he repeated it two or three times. I had never known before that the hummingbirds sang, although they had often chirped when there was no honey waiting for them. When angry, they make a chattering sound, and when they fight, they give a tiny shriek.

The last I saw of my hummers that year was near the end of August. The female disappeared first. A few days after I saw the male at the window. I opened it, but, instead of coming down for the honey, he hovered in the air, looked at me for a second or two, and then flew away.—Our Dumb Animals.

AUNT MARY HAD THE IDEA

Aunt Mary Wells is one of the few "befo' de wah" darkies left in a little Kentucky town. Recently she was discussing with her employer the merry-go-round that was running up on the corner.

"Nawsuh, Mr. Malcolm," she said, "nawsuh, I don' ride on none o' dem things. Why, Mr. Malcolm, I've seen some o' these fool niggers git on that thing and ride as much as a dollar's worth, an' git off at the very same place they gits on at; an' I sez to 'em, 'Now you spent yo' money, nigger, whah yo' been'?"—H. I. C.

THE DIFFERENCE

"Why is it, Sam, that one never hears of a darky committing suicide?" inquired a Northern man.

"Well, you see, it's disaway, boss," answered the negro. "When a white pusson has any trouble he sets down an' gits to studyin' 'bout it an' a-worryin'. Then firs' thing you know he's done killed hisse'f. But when a nigger sets down to think about his troubles, why, he jes' nacherly goes to sleep!"

Cut out the fault finding, be sparing of adverse criticism, and be more generous of deserved praise and appreciation. The good traits developed under this system usually crowd out the annoying or bad.

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When writing advertisers, mention The Cultivator.

Los Angeles Markets

Los Angeles, July 23, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price, 56 lb.; prices to retail merchants in 1-lb. squares, 56@57.

Dairy Exchange prices last week on extras:

Creamery Ex., lb. 57.

July	16	17	18	19	21	22
'19 ...	56	56	56	..	57	57

CHEESE

Brokers' prices:

California fresh, lb., 31; price to retail merchants, 33@34.

EGGS

Fresh extras, Produce Exchange closing price 51 doz., price to retail merchants, 54 doz.; case count, Produce Exchange closing price, 50 doz.; price to retail merchants, 52 doz.; pullets, Produce Exchange closing price, 47 doz.; price to retail merchants, 49.

Dairy Exchange prices last week on extras:

July	16	17	18	19	21	22
'19 ...	51	51	51	..	51	52

POULTRY

Prices to producers: Hens, 24@30; broilers, 25@28; fryers, 30; roasters, 35; old roosters, 16; capons, 42; ducks, 23; ducklings, 25@28; geese, 25; turkeys, 34@40; squabs, 45; pigeons, doz., 1.00.

Belgian hares, live, 13.

POTATOES AND ONIONS

Potatoes: Demand and movement slow, market firm, no change in prices. Sales to jobbers—sales from storage. Stockton, old stock, Burbanks, sacked 1.75@2.00; new stock, White Rose, sacked, 2.50@2.75.

Sales to retailers, July 22: Stockton, Burbanks, sacked per 100 lbs., 2.15@2.40; new stock, homegrown, White Rose, 1.15@1.20 per lug box; sacked per 100 lbs. No. 1 grade, 2.90@3.00; No. 2 grade, 2.25@2.50.

Sweets, lb., 7@8.

Onions: Sales to retailers: Demand and movement moderate. Homegrown green onions 35 per doz. bunches. White Globes, 1.20@1.25 per lug box; 4.75@5.25 per cwt. Stockton, yellow varieties 4.50@4.75 per cwt.

VEGETABLES

These are the actual prices obtained July 22, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beets, doz., bunches, 40.

Beans: Kentucky Wonders 2½@4 lb., practically no demand.

Carrots, doz., 35@40.

Cucumbers: Local lug, 40@45.

Celery: Local, best, 1.25@1.35 dozen bunches. Crates, best, 4.50@5.00.

Corn: Roasting ears, 35@40 per lug of 3 dozen.

Eggplant, 8@9 lb.

Lettuce: Sales to retailers, best lettuce in cabbage crates, 75@85.

Parsley, doz., 15.

Radishes: Round Red 15@20 per dozen bunches. Long White, 30@35 per dozen bunches. Long Red 20 per dozen bunches.

Rhubarb: Local Giant Cherry, 1.25@1.50 per packed box. Strawberry, fancy 1.00@1.35 apple box.

Spinach, doz., 20.

Squash: Local summer, lug, 40@45.

Tomatoes: Best locals, 85@1.50 cr.; lugs, 1.00@2.00.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained July 22, by Los Angeles wholesalers in restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: New crop, White Astrakans, apple boxes, No. 1, 2.75@3.00; lug boxes, loose, 1.35@1.50. Gravensteins, bulk, 6@7 lb.

Apricots: Lug boxes, 1.65@1.75; bulk per lb., 6@7.

Blackberries: Cr. 30 baskets, 3.25@4.25.

Cantaloupes: Demand and movement moderate, market firm, little change in prices. Sales to retailers: Homegrowns, Tip Tops standards 45s, 1.75@2.00; Rockyfords, 2.25@2.50.

Turlock: Demand and movement good, market steady. Quality and condition good. Shipment probably at height. Wagonloads cash to growers, green meats, unwrapped, standards 45s, 1.10@1.25, few 1.35, ripes 90@1.00; ponys 54s, demand light, movement limited, 40@50; flats, best 50@65.

Figs, per 10 lb bx, 1.75@2.00.

Grapes: Imperial and Coachella Valley Thompson Seedless 11@12 lb.; Malagas, 10@12.

Loganberries: 3.50@4.00 per cr. of 30 baskets.

Raspberries, cr., 4.00@4.50.

Peaches: Demand and movement moderate. Market steady, no change in prices. Sales direct to retailers: Local and northern, various varieties, 3c per lb.; lug boxes, best 1.75@2.00; poorer, 1.25@1.50.

Pears: Northern Bartletts No. 1, 9@10 lb., No. 2, 6@7 lb.; No. 1, per box, 4.25.

Plums: Demand and movement good. Santa Rosas, 6@7 lb.

Raspberries: Cr. 30 boxes, 3.50@3.75.

Strawberries: Cr. local, 3.60@4.50; best, 2.00@2.25; poorer, low as 1.00.

Watermelons: Demand and movement moderate, quality and condition generally good. Imperial Valley Chileans and Angelinos best, 1½@2 lb.; locals 3 lb.

Lemons: Fancy packed, 6.00@6.50; local pack, 4.00@4.50; loose, some tree ripe, 3.00@4.00.

Oranges: Valencias, medium fancy, 5.25@5.75; local pack, 3.00@4.00.

Grapefruit: Local fancy, 2.50@4.00 bx.; poorer, 1.50 up.

HONEY

Honey Exch.: Carlot prices: Orange Blossom, lb., 18; Wh. Sage, 17; Lt. Amber, Mtn., 14; Lt. Amber Alfalfa, 11. Guaranteed against decline until September 1. Some sales made 2 cents advance.

BEANS

Demand and movement slow, market firm. Carloads f. o. b. usual terms, pool prices, choice, recleaned basis, Limas sacked 9.00; Henderson Bush 8.00. Warehouse cash to growers—choice, recleaned basis, Small Whites, sacked 6.25@6.40; Lady Washington, 5.75@6.00; Blackeye, 4.25@4.50; Tepary, 2.25@2.50.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	17.00@22.00
Barley	15.00@20.00
Alfalfa	16.00@20.00
Wheat or Barley straw	8.00@10.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	26.00@27.00
Standard dairy	23.00@24.00
Standard alfalfa	21.00@22.00
Stock alfalfa	12.00@18.00

GRAIN AND FEEDS

Egyptian corn, 3.40@3.55.
Milo maize, 3.17½@3.21½.
Barley, 3.13¾@3.20.
Corn, 3.75@4.20.
Wheat, 4.75@5.00.
Bran, 50.00.
Feterita, 3.20.

San Francisco Markets

San Francisco, July 22, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	58½
Prime Firsts	57
Firsts	55

Prices extras past week and year ago:

July	15	16	17	18	19	21
'19 ...	57	56	57½	57½	57½	58½
'18 ...	51	51	52½	53½	..	..

Rcts. 5 days ending July 21, 2769 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	31@33
Cal Y. A. fy.	35½
Ore. Triplets	36
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	53
Firsts	51
Extra Pullets	47½

Prices extras past week and year ago:

July	15	16	17	18	19	21
'19 ...	52½	52½	52	51½	52	53
'18 ...	47½	47½	48	53½	..	..

Rcts. 5 days ending July 21, 372,497 doz.

POULTRY

Hens: W. Leghorns, 28@35; roosters, young, 43@45; old, 20@21; broilers, 32@33; fryers, 34@35; squabs, 2.50@4.00 doz.; ducks and geese, 25@28; broiler turkeys, 45@50.

Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1100 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.

Calves: Light weight, 12½@13; medium, 11½@12; heavy, 10@11.

Lambs: Yearlings, 10@10½; milk, 13@13½.

Sheep: Wethers, 9¾@10; ewes, 7½@8.

Hogs: Hard, grain fed, 100 to 150 lbs., 19½; do, 150 to 250 lbs., 20; do, 250 to 300 lbs., 19½; do, 800 to 400 lbs., 18½.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; oanner cows, 4@5; good bulls, 5@6½; calves, 9@10.

Hogs: Today's market on top, packer hogs, hard and well finished, weighed and delivered off cars at our plant, South San Francisco: 175 to 250 lbs., 18½; 150 to 175 lbs., 18; 250 to 300 lbs., 18½. Usual dock and price discounts for other weights and kinds.

Fresh beef: (Carcass beef), per lb.: Fancy steers, 500 to 700 lbs., 16; choice steers, 450 to 650 lbs., 15½; good steers, 450 to 700 lbs., 15; medium steers, 450 to 700 lbs., 14½; fancy steers, 14; common steers, 14; fancy heifers, 14; choice cows, 13½; good cows, 13; fair cows, 12½; cutter cows, 12, hind quarters, 3c over carcass quotations; forequarters, 2c under.

POTATOES

Demand and movement moderate, market steady. Sales direct to retailers: White varieties and Garnets, lug boxes 2.75@3.00, mostly 2.75@2.85 per 100 lbs.

ONIONS

Onions: Per cental, yellow, 3.50@4.00; Bermuda, Crystal wax, 3.50@4.00; green, 1.25@1.50 per box. Garlic, 20@22½

VEGETABLES

Wholesale selling price:

Beans: String, 5@6; Wax, 4½@5; Pole, 7@10; Limas, 10@12½.

Cabbage, doz., 50@60.

Celery, cr. of 5 doz., 3.00@3.25.

Cucumbers: Large box, 1.25@1.50; flats, 75@1.25; Los Angeles, lug, 90@1.25.

Corn, doz., 25@35.

Eggplant, southern, fy., 6@12½.

Lettuce, doz., 30@35.

Okra, green, lb., 6@8.

Peppers, Bell, lb., 10@20; Chili, 7@11.

Peas, lb., 3@7.

Radish, 10 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.00@1.75.

Spinach, 75@1.25.

Squash: Summer, cr., 90@1.00; 20 lb. bx., 1.00; Italian, 75@1.25 per 40 lb. bx.

Tomatoes: Sacramento River per 35 lb. bx., 2.50@3.00; Merced, 75@1.25.

CITRUS

Wholesale selling price:

Per bx: Lemons, 5.00@7.00; lemonettes, 3.50; grapefruit, 2.50@5.00; oranges, 3.50@5.00.

FRESH FRUITS

Wholesale selling price:

Apples: Newton Pippins, 2.25@3.00; Red Astrachans bx., 1.25@1.75; Wh. Astrachan, 2.50; Gravensteins, 2.50@2.85; Crabapples, 20 lb. bx., 75@1.25.

Apricots: Winters, 1.75@2.00; loose, 6@8; Royal, 5@7; ton, 110@140.

Bananas, 4@8.

Blackberries: Ch., 8.00@10.00

Cantaloupes: Cr., 1.25@1.75; pony crate 75@1.00; flats, 60@1.00; Honey Dew, 1.50@1.75 cr., 4c lb.; Turlock melons, 25 cents higher except on flats.

Cherries: Oregons, lb., 20.

drawer; bulk, black, 14@20; do, white, 9@14; Royal Anne, 10@13 lb.

Figs, 75@1.00 bx.; Brunswick, 75@1.00; whites, 75@1.00, 30 lb. bx.

Grapes—Thompson seedless, 1.25@2.00 per box of 25 lbs.: Malaga, 2.00@2.50 L. A. lug.

Loganberries, ch., 8.00@10.00.

Nectarines, 1.25@1.50 bx.

Peaches: Sacramento, 65@1.25 cr.; bx., 50@1.50.

Pears, bx., No. 1, 4.00, No. 2, 2.00.

Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simonl, 1.00@1.25; Santa Rosa, 1.00@1.25.

Pineapples, doz., 2.00@5.00.

Raspberries, cr., Los Angeles, 2.00@2.50; ch., 12.00@14.00.

Strawberries: Ch., 12.00@16.00.

Watermelons, lb., 2@2¼.

DRIED FRUITS

The California Prune and Apricot Growers, Inc., the growers' cooperative nonprofit organization composed of 7000 farmers controlling 75 per cent of the prune acreage of the state, announced prices at San Jose Tuesday which will be paid its members for their 1919 crop.

The growers will be paid a bulk basis price of 13.56 cents per pound. According to the percentage of sizes in a normal crop this means that the growers will average a little more than 14 cents a pound or $284 a ton for their fruit. The base price announced according to sizes are 20-30s, 22 cents flat, 30-40s 16 cents, 40-50s 14 cents, 50-60s 12 cents, 60-70s 11½ cents, 70-80s 11 cents, 80-90s 11 cents, and 90-100s 11 cents. One cent a pound premium will be paid for fruit delivered before September 20. On small sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.

On the basis of prices named by their association the prune growers of the state who have stood by the organization will collect more than $25,000,000 on the largest crop which has ever been produced by the California farmers. It is estimated that the association will market 180,000,000 pounds of prunes for its members.

It was announced in naming prices yesterday that hundreds of orders for stocks from the 1919 pack had been turned down in the last few weeks by the growers' organization because it had already made as many sales as it dared until a more accurate estimate can be made of the size of the yield this fall.

Growers who gambled on beating the association by selling to independent packers, who, in waging a bitter fight against the cooperative organization have been trying for months to buy up crops before the association named its prices, have lost and in rare cases stand to lose almost $100 a ton on their fruit in comparison with the amount the association members will receive.

Peach prices for the 1919 crop were announced at Fresno, July 16, by the California Peach Growers Inc. The price list agreed upon by the directors and announced by General Salesmanager Sturtevant, follows:

Effective this date and until further notice, our prices f. o. b. our California factories, on 1019 crop dried peaches for the domestic and foreign trade: September, October, November shipment, sellers' option: guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾; Muirs, 15.

Choice yellows, 15¼; Muirs, 15½.

TiziT TiziT

Cost of Fruit Loss vs. Cost of Tizit

The loss to the grower of degraded or smutty fruit is many times the cost of spraying with Tizit Spray.

Any method that leaves smut and dead scale or scale not killed cannot be said to be perfect. Tizit Spray cleans off dead scale, moss and lichen that retard the growth of the tree and hinder the development of the fruit.

It is an investment and not an expense, as we can prove to you by the experience of many growers who find that they have more fruit and that it grades better.

You will be surprised at the results and what can be accomplished at so small a cost. Remember Tizit is not an oil base spray. It is positively harmless to tree and soil. Navels sprayed with it every year for the past five years have borne fruit that passed the 8 to 1 test several weeks ahead of groves adjoining. One Black scale will produce 2000 to 3000 young. Think of the condition your grove will be in if you delay treatment until the weather is cool enough for fumigation. Tizit costs less than half and works all season.

It is the most efficient Black Scale and Citricola Scale eradicator that can be used at a price that is ridiculously small compared with the results obtained.

Let us send you the names of grove owners who have been using Tizit Spray during the past five years so you can compare what Tizit has accomplished with every other method and the C O S T.

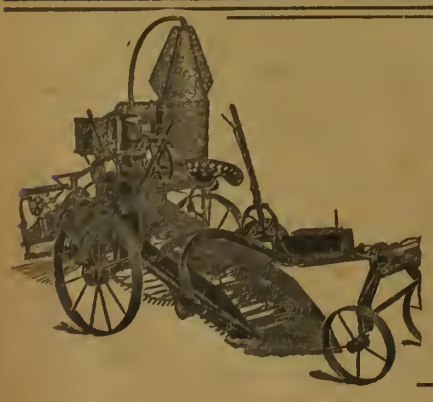
Tizit Spray Mfg. Co.

1344 Willow St. Phone 12089 Los Angeles

Also may be ordered through our local agents, or
The Fruit Growers Supply Co., or Mutual Supply Co.

Write today for Price List and Testimonials
Our Citriculturist, Mr. Wyllie, is at your service

TiziT TiziT



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It reduces the team so lessens the strain on machine.

This 4 H. P. engine may be used for any chore work on the farm.

Send for circular.

Thomas R. Browne
Factory Representative
Stockton Calif.

Fancy yellows, 16½. Mulrs, 17½.
Extra fancy yellows, 17¾; Mulrs, 18¾.
Slabs yellows, 14½.
For "practically peeled" add 1½ cents per pound (any grade).
Prices above are all bulk basis.
For packing in: 50-pound or 25 kilos boxes add 1 cent per pound.
25-pound or 12½ kilos boxes, add 1¼ cents per pound.
10-pound boxes, add 2 cents per pound.
Blue ribbon peaches packed five-pound cartons, 12 per case, 12.00 per case.
Blue ribbon peaches packed two-pound cartons, 24 per case, 10.00 per case.
Bakers' special, "practically peeled," 16¾ per pound, bulk basis.
Figs: Wh. stand., 16; ch., 18½; ex. ch., 20; fy., 22½.
Apples: Ch. (in 50's), 21; ex. ch., (in 50's), 21½; fy., (In 50's), 23.
Pears: 1919 crop, stand., 20; ch., 22½; ex. ch., 23½; fy., 26.

BEANS

Demand and movement moderate, market steady. Carloads f. o. b. usual terms —valley and common rate points—small whites, sacked mostly 6.50; Black Eye, 4.75.

GRAIN AND FEEDS

Oats: Red feed, 2.20@2.40 per cental.
Corn: California yellow, 3.15@3.40 per cental. Egyptian, 2.75@3.25; Milo maize, 2.50@3.00.
Rye: 3.65@3.75.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00 @54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of July 19, Scott, Magner & Miller says:
Receipts past week 183 tons. A large part of these receipts arrived by water. It looks now as if there would be a decided shortage of rail equipment. Demand for hay has been fair and receipts have been moved without difficulty. Choice quality red oat and wheat have met with good demand. The country demand has been fairly active and considerable hay has moved in this direction. There has been very little demand for export, and with the exception of a call from the government for about 1500 tons of hay and alfalfa there has been nothing particularly interesting. Some sales of round lots have been reported as having been made in the country during the week; especially is this so as regards alfalfa, which market has taken on considerable strength and is quoted higher.
We quote today wholesale prices in carload lots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5 wire bales)	17.50@18.00
No. 1 Wheat or Wheat and Oat hay	15.00@17.00
No. 2 Wheat or Wheat and Oat hay	12.00@14.00
Choice Tame Oat hay	15.00@17.00
Other Tame Oat hay	12.00@14.00
Wild Oat Hay	10.00@13.00
Barley hay	12.00@15.00
Alfalfa hay	14.00@18.00
Stock hay	9.00@11.00
No. 1 Barley straw, bale	.50@ .80

Citrus Markets

Los Angeles, July 23, 1919.

Valencias are looking up a bit though conditions have been unsatisfactory for some time. There are still nearly 8000 cars to go forward. Shipments are approaching 100 cars daily.

As to next season's crop there is much diversity of opinion but guesses range usually around 60 to 75 per cent for navels, while Valencias will run not far from 75 per cent.

Lemons are selling well, though some low grade stock has sold at little more than cost of transportation.

Shipments

Shipments of oranges from Southern California to date since November 1, 1918: 28,052 cars; lemons, 8060; total, 36,112. To same date last season: oranges, 12,-188; lemons, 4347; total, 16,535. From Central California to date this season: oranges, 4427; lemons, 354; total, 4783. Last season same date: oranges, 2539; lemons, 115; total, 2654. From Northern California to date: oranges, 244; lemons, 2; total, 246. Last year: oranges, 203.

AT THE AUCTIONS

July 17

New York: 18 or., 2 lem. Poor stock selling low. Val. $1.40-6.10; grapefruit, $5.25; lem., $1.50-4.20.
Philadelphia: 6 or., 6 lem. Val. $2.80-5.25; lem., $1.20-4.05.
Boston: 8 or., 6 lem. Lower. Val. $2.40-4.65; lem., $1.75-4.45.

July 16

New York: 25 or., 2 lem. Val. $2.95-5.10; grapefruit, $2.30-5.00; lem., $1.05-3.75.
St. Louis: 5 or., 5 lem. Val. $3.35-5.10; lem., $3.15-5.75.
Pittsburg: 7 or., 4 lem. Val. $3.40-6.05; lem., $2.05-4.60.
Boston: Lower on lem. Val. $3.05-5.70; lem., $1.00-5.35.
Philadelphia: Slightly improved condition. Val. $3.50-5.10; lem., $1.35-3.90.

July 18

New York: 10 Val., 1 lem. Val. $2.20-6.10.
St. Louis: 3 or., 7 lem. Val. $3.40-4.75; lem., $1.85-5.45.
Cleveland: 2 or., 3 lem. Val. $4.00-5.85; lem., $2.70-4.50.
Cincinnatia: 4 lem., $2.10-4.85.
Pittsburg: 3 or., 2 lem. Val., $3.55-5.00; lem., $1.70-5.00.
Boston: 3 or., 4 lem. Val. $2.60-4.40.

July 21

New York: 20 or., 1 lem. Val. $1.80-7.55; grapefruit, $3.10; lem., $3.00-4.70.
Pittsburg: 7 or., 4 lem. Val. $.50-5.20; lem., $2.65-5.30.
St. Louis: 3 or., 6 lem. Val. $3.50-4.55; lem., $1.75-6.05.
Cleveland: 1 or., 4 lem. Val. $2.15-6.40; lem., $3.00-4.30.
Boston: 6 or., 7 lem. Val. $2.90-5.00; lem., $1.25-3.50.

MARKET NOTES

Arizona cantaloupe growers had shipments curtailed by car shortage caused by wrecked bridge.
It is estimated by the U. S. crop bureau that Arizona's cantaloupe shipments will double those of last year.

A large proportion of the cantaloupes grown in the Los Angeles district are consumed locally, but this year there will be a few hundred cars for shipping out of the district. Unusually heavy plantings were made this season and they are practically all coming on well.
San Fernando Valley and Glendale in Los Angeles County have big acreage planted to cantaloupes.

The Turlock melon district complains of heavier disease infection than usual. The season as a whole has not been favorable. Heavy shipments will be late.
Potatoes generally are not of as good quality as usual. Poor seed is given as the cause.
Fusarium wilt is very prevalent in potato fields.
San Fernando district will ship about 225 carloads of potatoes.
Watermelon shipments from Imperial Valley have been heavy this year. Crop has been about twice as large as last year. Los Angeles County also will have a big increase in production over last year.
Sweet potato shipment from Imperial and Coachella Valley has closed. May and June shipments amounted to 112 cars this year, 88 cars last year. The new district, Irvine Ranch, Orange County, has started shipments with good prospects.
An investigation made last year showed that seven per cent of the acreage of corn in California was cut green for ensilage and 14 per cent was cut for green feed, leaving only 79 per cent harvested for grain. Federal crop reports show a slight increase in acreage planted in this state, with a forecast of 2,500,000 bushels.
In some parts of the state there have been a few days of desiccating north winds which did some damage to all field crops especially cereals. "It is worthy of note in this connection," says J. E. Rickards, field agent, "that the supply of water for irrigation purposes is getting alarmingly low in some parts of the San Joaquin Valley. These two unfavorable factors are reflected in the condition figures of all crops, and unfortunately at this time of the year there can not be any improvement.

Though there has been an increase in acreage planted to potatoes in the Delta region, the state as a whole shows a slight falling off—91,000 acres as compared with 93,000 last year. The production, based on a condition of 88, warrants the forecast of 12,252,240 bushels.

California's acreage of sweet potatoes is practically the same as a year ago, with a forecast of production of 968,000 bushels for California.
There have been sown this year in California about 140,000 acres of rice as compared with 108,000 acres last year. Although the general condition of the crop is favorable the fear is expressed that the late sown rice may not mature unless the season is unusually favorable. Based on the present condition of 94, our forecast of total production is 8,685,600 bushels.
The north winds in June, following the lack of spring rains, reduced prospects for wheat since early spring. The federal forecast is 13,916,610 bushels for California. The forecast of production for the United States is 1,000,000,000.
Last year's average weight of wool per fleece was seven pounds. This year it is increased to 7.4 pounds.
Alfalfa in many sections is showing loss of condition through lack of water.
All vegetable crops, except on irrigated land, are suffering for want of water.
Good prices for hops at the close of the season last year have induced planting a larger acreage than was picked last year.
Fruit crops are holding up, away above the ten year normal average. Prunes top the list, showing condition on July 1 of 131.6 per cent.
The weather has been a trifle cool for drying apricots in some places, but this weather has insured a regular ripening.
More than half of California's peach crop is grown in the San Joaquin Valley where nearly every county has better than a full crop.

DR. MEAD ON BANK COMMITTEE

Dr. Elwood Mead, professor of rural institutions in the University of California, and chairman of the land settlement board of the state of California, has been appointed a member of a committee of which Edward A. Filene of Boston, director of the United States Chamber of Commerce is president, formed in New York to draft measures providing for bank credits on short time for farmers and industrial workers.

DATES AT INDIO

Under date of June 11 a letter from Indio, Riverside County, says: "Individual clusters of Deglet Noors in the government date orchard have already attained an estimated weight of 40 to 50 pounds, and in numerous instances this weight will in all likelihood be exceeded at maturity."

PATTERSON FAIR

Patterson, Stanislaus County, has organized a fair association and has chosen August 22-23 for its first annual

The Almond Growers' Exchange is putting bleaching machinery in its plant at Lodi. Other improvements are being made at a cost of $12,000.

The crop of Elberta peaches in Texas is now moving to market. It is estimated at 1800 carloads.

WEATHER REPORT

San Francisco, California, July 19, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	.00	.11	62	50
Red Bluff	.00	.00	.00	108	66
Sacramento	.00	.00	.00	100	56
San Francisco	.00	.01	.01	64	49
San Jose	.00	.00	.00	86	50
Fresno	.00	.00	.00	106	68
San Luis Obispo	.00	.00	.01	78	52
Los Angeles	.00	.00	.00	84	62
San Diego	.00	.00	.00	76	56

THIS thirty-two page illustrated booklet is of vital interest to every farmer in the United States. It answers the questions you have been asking. It solves the problems you have been wrestling with. It gives you just the kind of information about tractors and tractor farming that you have been looking for. Sent free to any one. Mail the coupon today for your copy.

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Don't wait! Get your *Cletrac* now Orders are coming in fast and we are filling them as rapidly as we can. In another month we will be behind again. If you want your Cletrac promptly *order it now—today!* Don't wait! Every day's delay means a later start in reaping the greater profits that are bound to come with year round Cletrac farming.

Send for this booklet "Selecting Your Tractor." It goes into *your* problems—*and solves them.* It doesn't do a lot of theorizing but gets right down to cold hard facts that are of real live interest to every progressive farmer. Fill out this coupon *now*—and mail it *today.*

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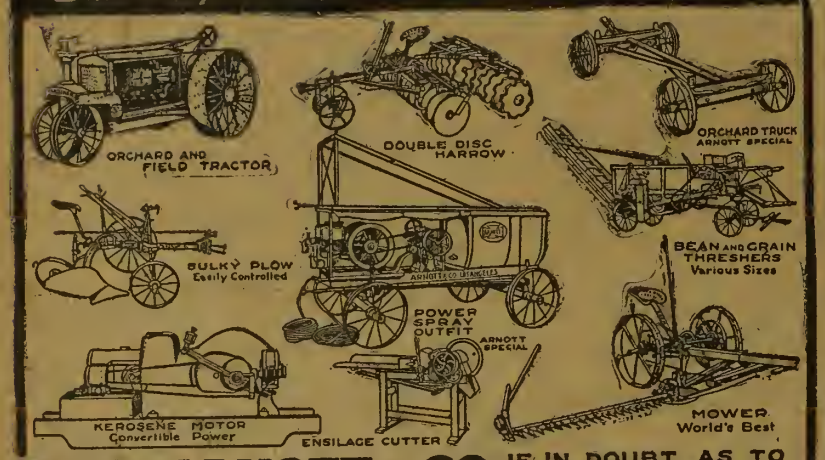

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Made and used in California for 5 years

Catalogue on Request

SMITH BOOTH USHER CO
ESTABLISHED 1893
THE PUMP AND ENGINE HOUSE OF THE PACIFIC COAST
LOS ANGELES

WHY IS JUNE DROP?

Continued from Page 90

distress all through the winter, some trees bloomed in January and again in March and in June. The bloom was more or less erratic, sometimes the whole tree, sometimes one side of a tree and the last bloom, in June, was evenly distributed over the trees and set quite a little fruit which subsequently dropped.

That the hot weather is a contributory cause is generally admitted, but that it is the primary cause as claimed by some writers would seem to be disproven this season as most of the fruit had fallen before any hot weather came and, in fact, compared with previous years, we have had no hot weather yet. The bulk of the fruit that fell in the San Joaquin Valley had fallen before June 1 or had taken on the characteristic yellow color of the orange that is sure to drop.

In some cases the trees showed a lack of vigor and a dying of small branches, that for want of a better name has been called die back. Some of the die back has the characteristics of citrus blast, and it may well be that in some cases a mild form of this disease is the cause of the trouble. Another abnormal condition is shown this season in the heavy leaf drop. Almost all the older foliage is turning yellow and dropping off. This is quite noticeable whereas in ordinary years the fall of citrus leaves is a hardly noticeable occurrence.

Many growers complain that the trees that generally produce the heaviest are this year producing the lightest crop and in one grove those trees fertilized heavily with stable manure last season are carrying practically no fruit while other and apparently less vigorous trees are bearing a moderate crop.

I have myself noticed the extremely patchy manner in which the crop is showing up this season. A tree here and there will be loaded while trees on either side and in the same row will have no crop. This in cases where all trees have had the same treatment.

That this is caused by climatic conditions is hard to believe. Navel oranges have been raised successfully in California for many years and it is hardly reasonable to suppose that the older trees would now change in their reaction to a climate they have withstood successfully for 20 or 30 years.

It would seem more reasonable to suppose that some element of the soil had become deficient and deprived the trees of some support to which they had been accustomed or else that some deleterious substances had been deposited in the soil by the irrigation water, from which a toxic condition had arisen.

With younger groves on virgin soil this could not apply to any great extent and here it would be wise to consider for a moment how far these young trees are from the parent stock and to look for some deterioration in the trees due to the well known faculty of plants for "running out" when not grown from consistently selected buds. For many years buds were "consistently" selected from sucker growth and the trees grown from such water sprouts may well tend to grow their luxuriant foliage at the expense of the fruit.

Some instances have been reported where the use of windbreaks combined with summer cover crops have proven very beneficial. This system requires much water and in many cases more than is available. It is, however, well worth trying out. Care should be taken, however, that a summer cover crop is planted and not the winter crop left over until summer before turning under.

To sum up the situation from the standpoint of the grower it would seem that those trees having the best general care are least susceptible to June drop.

That plowing should be done in the fall or early spring.

That fertilizer should be applied in time to insure the trees being in a good vigorous condition when the fruit is setting.

That care should be taken to supply sufficient moisture and that where a summer cover crop is grown it should be sown early enough to enable it to have a lush growth by the time the warmer weather comes and that sufficient water be supplied for the needs of both crops, otherwise if there is a shortage the trees will be the ones to suffer.

It is quite possible that a system of mulched basins, especially combined with an overhead irrigation system, would solve some of the problems of June drop, and it would, I think, be interesting to hear from Cultivator readers who have experience along those lines.

* * *

R. H. Shoemaker, Tulare County

Generally speaking, this district is in good shape as far as the set is concerned, excepting on certain soils. However, we do not think our growers use sufficient fertilizer to raise heavy crops and until such time as there is more interest taken in the fertilizer question our navel crops will not be very heavy

* * *

E. L. Koethen, Riverside, Riverside County

Drop has been more usual but not equal to drop two years ago It is doubtless due to the sudden advent of the hot weather Besides the hot week was attended with the dry north wind which seems always to increase the drop.

No special effort was made to control it except that it is advisable from all past observation to keep the soil well supplied with moisture. Wherever the soil has been deficient in moisture at the critical period there has been an increase of drop.

Pruning that was done just previous to the advent of the hot wave lessened the drop on those trees. Well pruned trees all show less drop than unpruned trees.

Observation teaches the writer that everything should be avoided at this critical period that will in any way devitalize the trees; a shock from too little water or an excessive long run, plowing so deep as to disturb any of the feeding roots, a lack of sufficient plant food in the ground or unavailable food or any other adverse condition will increase the drop.

A careful survey of a large number of orchards where the history of the orchard is known has resulted in the inevitable conclusion that in this section at least the drop is almost invariably in proportion to the environment of the trees this year at least That is, orchards that are in perfect care as to all the essentials of fertilization, cultivation, freedom from insect troubles, frost and all other adverse conditions have at this time a full setting of fruit on the trees. This down to an entire dropping of the entire crop where the conditions are all unfavorable

There were one or two apparent exceptions to this rule, but we were convinced that if all the conditions were known the rule would hold good in all cases.

The Fall Poultry Shows

By Jean A. Koethen

IT is a good thing perhaps that breeding fancy birds and producing commercial eggs, however interdependdent they may be in fact, are externally two distinct and separate branches of the poultry industry. If they were not there would be no summer vacation for anybody. As it is, the commercial folks, who see their pullets well started and their old hens just going into the molt, are laying off, while the fanciers, who have to get through hatching earlier, have had their rest, and August sees them hustling back onto the job.

A good sized job it is, too, and getting bigger every year. What with the old fellows, like Mr. Walthew and the Goodacres, and Mr. Harrison, who have had their shoulders to the wheel for years, and the little new chaps, with all their high aspirations for the blue, or at least the yellow, and the women who have broken into the magic circle and now can't be left out, and all the crowd of "better poultry" people, and the backlotters who know they only want a chance to become fullfledged fanciers, and the folks that have read, and the folks that have heard, and the back-to-the-landers, but mercy on us, where is it all going to end? The whole world seems to have started out after chickens.

I have a neighbor who several years ago bought a setting of fancy eggs. That fall she had one bird so promising that she took him to a local show and he took first. Then she took him to the Los Angeles show and again he took first. She sold him for $25, but he proved to be such a fine breeder that his new owner sold him, if I am not mistaken, for $75. Reads like a fairy story, doesn't it? Every year since that woman has bought eggs from the same breeder and hatched birds for the shows, but this year she is hatching from her own stock. Hers is just an ordinary backlot establishment, with the difference, perhaps, that she has a good cow. And this is what thousands of women are doing, and thousands more are planning to do. The backlot fancier has come to stay and is a immense factor in the boosting of the poultry industry.

Now all this zeal and effort has as its foundation the poultry show. If there were no shows there would probably be no "better poultry" movement. Egg-type is not quite as tangible, not as easy of apprehension, as blue and red ribbons and beautiful plumage. And so we begin with the most tangible things. Later on we shall work up, some of us, to scientific breeding for high production. The poultry show has always been, and always will be, the greatest single factor in stimulating an interest in high class poultry.

Since the war taught us to conserve all our resources, utility and fancy are joining hands to this extent, that many breeders of exhibition stock keep their egg records and breed for eggs as well as for points. Leghorn breeders have done this for a long time. I have in mind now three or four Rhode Island Red breeders who are doing the same thing, and who point with pride to their 200-egg averages. I met a breeder a few days ago who told me his flock of Reds had averaged 205 eggs the past year. I mention Reds because I know most about them, but I don't doubt I could hear the same thing in a meeting of fanciers of any other breed. The two go together, eggs and feathers, you can't separate them.

An August Show

The first show of the season comes off this year the 23rd of August. It is not a public affair, just a little private show gotten up by the Rhode Island Club and the Ancona Club, to be held at the Goodacre place at Compton. Only club members are to exhibit, I believe, and only pullets and cockerels are to be shown. As there is to be a basket picnic in connection with the show, the public is not invited, but I fancy any one who has a promising bird of either breed and would like to show it might easily become a member before August 23 by writing to E. A. Weaver, secretary of the Rhode Island Red Club, or to W. H. Hocking, secretary of the Ancona Club. This little show will be valuable to novices since it gives them an opportunity to size their birds up alongside those of experienced breeders.

Fall Shows

The Sacramento show comes on in September. This is always one of the biggest and best. It attracts a large number of farmers from the central and northern portions of the state and is one no regular breeder feels he can afford to miss.

The Riverside show is always held in October. It is not so large as some, but is always, to quote a prominent breeder, "a corking good one." The folks come in their autos from miles around, many from Los Angeles, for the trip is easily made in a day, and enjoy county fair and races and poultry together. Riverside is becoming more of a poultry center every year, and breeders from San Bernardino, Pomona and Ontario always make a good deal of this show. This year E. I. Hammond, who has been secretary since the first show was held, some five of six years ago, retires, and Harry Suits, returned soldier and son of the late W. G. Suits, takes his place.

In November there will be, I understand, another Liberty Fair, with its attendant show. In December the Los Angeles Poultry Association will show, as it did last year, and in January comes the big wind-up in the Poultry Breeders' show. It's a bit hard on the birds that have to go to all, but it gives everybody a chance to find out who's who in poultrydom.

HONEY PROSPECTS IN ARIZONA

By B. A. Hadsell

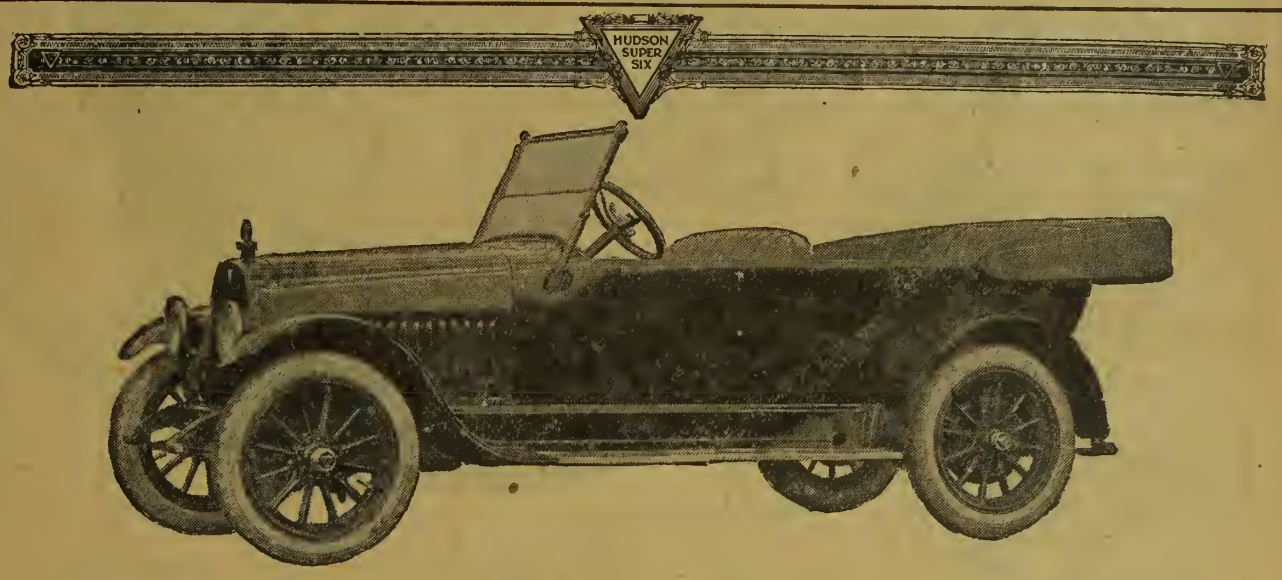
As far as I am able to learn from our bee inspector, foulbrood has only been discovered in two places in Arizona. The bees wintered in a fair condition, but wintered in a fair quite yielded little honey, and very few young swarms were secured. As alfalfa, which has plenty of moisture and irrigation through the winter, is so rank and the blossom so deep that the honeybee can not reach the honey or fertilize it for a seed crop; it is therefore pastured or mowed for hay. But the second and later crops, if not overirrigated, yield heavily in both honey and seed, providing there are no other insects to suck the honey from the bloom during the night. For the past few years small insects and butterflies have greatly reduced the yield of honey. This year the bloom is alive with insects. Many of the apiaries so far have not secured enough to winter on. And beekeepers in Southern Arizona report only about one-fourth of a crop. It is possible that some honey may be gathered yet from alfalfa and cotton

Considerable rain has fallen through this section, giving plenty of water for irrigation with prospects for heavy crops of cotton, maize and alfalfa. The biggest crop of wheat and barley ever produced in this section has already been thrashed.

"Father, what kind of beasts were the rams they used so much in the civil war?"

"They were probably the ancestors of the ewe boats of today, my boy."

A live wire won't get stepped on.



What Car Now Rivals The Hudson Super-Six?

Experience Gained in Building 60,000 Super-Sixes Result in the Car Which Men Say Has No Rival

Owners of earlier Hudson Super-Sixes—there are 60,000—are the most appreciative appraisers of the new model.

They know the reliability of Hudson endurance and have long said it was potentially the greatest car built. The improvements their experience has suggested have been made. Annoyances that have been regarded as inevitable to all cars have been eliminated.

With practically every dealer, his first sales of the new Hudson Super-Six were made to those who have owned Hudsons for years.

They Saw Qualities You Will Want

This is the tenth year of Hudson leadership. The Super-Six is four years old. When it came the trend was towards motors of many cylinders. But its freedom from vibration, obtained by a patented motor which added 72% to power without increase of size or weight was what had been sought for. Smoothness meant easier riding and greater endurance.

The Super-Six established its leadership in these qualities in every avenue open to such proof. It became the most famous speed car.

But the Super-Six was not designed as a race car. It merely established its speed qualities in the development of its value as a reliable enduring car such as you want.

Those qualities were established with the first Super-Six. Subsequent models revealed the refinements that came only from experience. Each year saw an advancement over previous models. This new model attains the ideal for which we have sought.

No other fine car is so well regarded by so many people. There is a Hudson Super-Six for each six miles of improved roadway in America. You will see more Hudson closed- and chauffeur-driven cars on Fifth Avenue than of any other make. It is the choice car of the business man, the farmer, the rancher, the mountaineer and the tourist. With changes that can be made in any Super-Six, it is the car upon which race drivers rely to win prizes in 500-mile speedway events or in the most famous road races.

How It Was Improved

The new Super-Six starts easier, rides easier and runs smoother. All its excellent qualities you know are retained—in many instances, enhanced.

Owners of earlier Hudsons see its finer values as you detect the matured nature of a friend in whom you have long admired qualities of sturdiness and reliability.

Each season has seen a Hudson shortage. Reports from dealers indicate sales are increasing faster than production. Buyers have waited months to get the car of their choice. You will do well to decide now.

(1083) Hudson Motor Car Company Detroit, Michigan

'Chain'

'Usco'

Take it in the Car

Think how your car shortens those trips to town!

Going or coming—carrying any one of the hundred and odd things you have to carry, how much it means to you in time saved, alone!

Give it tires that will vouchsafe its greatest usefulness and most economical operation.

Experience has taught hundreds of thousands of folks—both in the cities and on the farms—that United States Tires are good tires; the best tires they can buy.

Last year, when thrift was a necessity and dependability vital, United States Tires showed the remarkable superiority that has always marked their performance.

That is one reason why the 1919 sales of United States Tires are far beyond any previous demand.

Another big reason is this:

There are five separate and distinct types of United States Tires—among them tires that will meet—and meet exactly—any existing need for tires. This means greatest economy, longest mileage and most satisfaction all 'round.

United States Tires are Good Tires

The United States Sales and Service Depot Dealer in your neighborhood will gladly point out the tires that will serve you best. Let him help you.

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — August 2, 1919 — No. 5

Turning the Stubble Under

TiziT TiziT

Tizit Spray

Shows Big Results on White Rose Ranch

Four years ago the 20 acre orange and lemon grove of the late Kaspare Cohn at Montebello was badly infested with Black Scale although fumigated seven years out of eight previous to that time.

There was perhaps no more badly infested grove in Los Angeles County.

Mr. Enyart, the manager, was discouraged on account of the dirty condition of the grove and its non-productiveness. He was persuaded to try TIZIT SPRAY. This was in 1915 and Tizit has been applied each year since.

On July 25th, 1919, the grove was carefully inspected by Mr. Enyart, Mr. Ben R. Meyer, administrator of the estate and Mr. Wyliie, citriculturist of the TIZIT SPRAY CO. After a careful inspection of all parts of the grove Mr. Enyart said:

"If I were offered $1.00 each for every live Black Scale I could find on this ranch or $2.00 per day hunting them, I would take the $2.00."

The crop on this grove in 1918 was the best in ten years and this year another splendid crop is set.

The cost of spraying these 20 year old trees with TIZIT SPRAY has been approximately $10.00 per acre per year. Figure the difference yourself between the cost of this and the cost of fumigating, and the results.

Another grove in the Montebello district which has not received a pound of fertilizer in five years but has been sprayed in the bloom has a crop set this year that is truly phenomenal and the owner attributes it solely to the use of TIZIT SPRAY, which has been used exclusively.

Investigate this thoroughly tested and proven eradicator of Black and Citricola Scale.

You can clean and protect your grove with TIZIT in a most effective and economical way.

Our citriculturist, Mr. Wyliie, will confer with you regarding your scale troubles.

The Tizit Spray Mfg. Co.

1344 Willow St. Phone 12089 Los Angeles

Exchange members may be supplied through the Fruit Growers Supply Co.

TiziT TiziT

3 PAIR OF HANDS-

A Saw, a Hammer, and a Monkey Wrench are all you need to Build

THE INDIANA

Still not too late to have your

INDIANA SILO

ready for this harvest-time

As soon as your order is received we ship complete directions for buildings. The complete Silo is shipped by the time your foundation is built.

You need no skilled carpenters to erect the Indiana Silo. The usual size is easily put up in two days with a couple of unskilled helpers, a saw and a hammer, and a wrench.

—and when it's up you know it's going to STAY UP.

The straight grained fir staves, held firmly together with shaped steel hoops form a wall that will not burst. The silage juices actually preserve the fine fir fiber.

Send in right away for the full statement of the EASY TERMS and a blank contract.

SEND FOR FREE SILO BOOK, TOO

Address Dept. C

The Chas. K. Spaulding Logging Co.

SALEM, OREGON

NO WASTED SILAGE

The Air-tight walls and doors of the Indiana Silo keep the silage sweet. None thrown away. It's *all good* in the Indiana.

"Kissel" Motor Trucks

Are Money Makers For the Farmer

For hustling around the ranch—going into open fields where trails have never been blazed—hauling heavy loads where need be—or speeding to town over boulevards the "Kissel" truck is the farmer's standby.

One extensive farmer, who has a "Kissel" truck and several others, says, "The 'Kissel' is the best truck we own. We put it through every day where our other trucks won't go, and

I only wonder how it does it."

Gear ratio to suit the farmer's needs.

Extra large loading space.

¾, 1½, 2, 3½ and 5 Ton Models.

Western Motors Company

Oakland Los Angeles San Francisco

Gilbert Woodill, Manager

Eleventh and Flower Streets Telephone 60388

LAST CALL

THE WEST'S GREATEST

HAMPSHIRE SALE

Ortega-Underhill Rancho

Santa Barbara

Wednesday, August 6

65 BRED SOWS AND GILTS 65

This sale will afford a real opportunity for the selection of Hampshire breeding stock that represents as good blood lines as the breed has produced. Every sow and gilt has been bred to our great herd boars and every one is guaranteed to be a breeder.

Remember that Hampshires are the coming breed of the West and that now is the time to lay a foundation for a sure and profitable business.

Hampshires Are Popular Because:

They are prolific, good mothers, splendid rustlers, make rapid and economical gains and are vigorous.

Hampshires are the Hogs of No Regret

Francis T. Underhill

Ortega-Underhill Rancho

Santa Barbara California

Col. Ord L. Leachman, Auctioneer

California Cultivator

Vol. LIII, No. 5 | Los Angeles, August 2, 1919 | One Dollar Yearly

Better Grasses for Forage and Silage

ONE of the greatest needs of the California stockman is for pasture or forage grass. In seasons of abundant rainfall the rich covering of wild oats, bur clover, alfilaria, Bermuda, salt grass, Australian salt bush, and even foxtail, affords rich pasture. In some sections the underbrush, bunch and many other grasses cure so as to afford a living for some of the stock. Still the stockman asks for something which will grow with a minimum of water and still make rich luscious pasturage, soilage and silage. Years ago the state experiment station of the University of California investigated and introduced seed of various plants which have been tested.

One of these, a so-called millet, oryzopsis miliacea, was first introduced nearly a third of a century ago. Some of it was sent to San Diego County, scattered on the hills, and is now developing into a grass of remarkable economic worth. This is a low-growing but very rich forage which is exceptionally satisfactory to all live stock on which it has been tried.

But this is only one of the grasses which have been introduced within the past few years.

To give visible evidence of the worth of some of these grasses the Aggeler and Musser Seed Company made experimental planting in a small plot of ground in Los Angeles. Soil conditions are not of the best, but water has been applied to give a good one year test of a great number of these grasses. The plot has been under the direct supervision of H. L. Musser who is a decided enthusiast in the matter of things which will prove of economic value to California. There are plots of Red Cob Ensilage corn, Eureka Ensilage corn, Orange County Prolific corn, Hickory Cane corn, Pima and other corns. Then there are millets, a dozen varieties, rows of Napier, Para, Guinea, Cocksfoot rye, or wild rye, Fog grass, Paspalum, Billion Dollar grass, Rhodes, Natal, Perennial and Italian rye, brooms, forage crops of various types, sorghums and a brand new introduction, Teff grass.

The Indian corn which is being tested is all of the silage making type. Some of it was 13 and 14 feet in height. The Rhodes grass has been tested in this state for a few years, and from its manner of growth on the test plot it appears it should have more general planting than has ever been given to it. It is shown in illustration Number 1 on this page.

Number 2 illustration shows a really wonderful plant; in fact, it is called the Wonder Forage plant. There have sometimes been known to be as high as 60 husky stalks from one seed. The plant in the illustration had its seed deposited in the ground April 3. This plant was only introduced in 1916 and first planted in Riverside County. As may be seen in the illustration it grows extremely tall, has been known to grow as high as 16 feet. It is estimated that it will produce 40 tons of silage per acre.

Another type of grass, more of a pasture plant, is that shown in the lower left hand corner of the illustration. This is Teff grass, Eragrostis Abyssivica. Mr. Musser has lifted one plant which shows remarkable growth of fine nutritious grass. This grass is being tested on alkali land and so far has given exceptionally good results under most trying conditions. It is also known to do well on dry hillsides and even under trees. It is an annual and seeds freely.

Forage Grasses and Silage Makers are Being Tested Out

1.—Mr. Musser standing on post holding Rhodes Grass plant, seed for which was planted some three months ago. Prof. Keinholtz standing by Mr. Musser's side. 2.—Wonder Forage plant just beginning to seed out. Sometimes as high as 60 stalks will stool from one seed. Seeds from this plant placed in ground April 3. 3.—A bunch of millets. Taller millet in background, Indian; shorter, in foreground, White Wonder. 4.—Teff Grass, one of the latest to be introduced from Australia. 5.—Smilo, introduced many years ago. It has persisted in growing on the dry hills of San Diego County. It is now being more generally planted. 6.—Broom Corn, taller variety in background, dwarf variety in foreground.

Mutual Fire Insurance Companies Need Uniformity

NEARLY 2000 farmers' mutual fire insurance companies in the United States have a total of $6,000,000,000 of insurance now in force. These companies in general have shown a high degree of stability and have proved of much value to their members, specialists of the United States department of agriculture say in Department Bulletin 786. These companies are organized in all states except Florida, Louisiana, New Mexico, Arizona and Nevada, more than four-fifths of them being located in the Middle Atlantic and North Central states.

Of the 1161 companies replying to questionnaires, 124 were incorporated by special acts of congress, while 967 were incorporated under general statute, and 21 existed as voluntary associations without incorporation. The smallest membership of any company was 25, and the largest was 32,433, the average membership being 1532. The prevailing plan is to allow each member one vote regardless of the amount of insurance or number of policies held. More than four-fifths of the companies follow this plan.

All the companies returning a questionnaire gave information concerning the hazards against which insurance was written. Thirty-three companies insured against fire only, 958 against fire and lightning, and 170 gave combined protection covering fire, lightning and windstorms. The giving of the last named form of protection can be engaged in with safety only by the larger companies with their risks widely distributed. The more local mutuals in many states have cooperated with one another in the organization of statewide companies to care for the wind storm insurance of their members.

Among the 898 companies which reported the maximum single risk was $15,000, and the lowest $750. A total of 349 companies reported their maximum single risks as large as $4000, and only 58 companies provided for a maximum of less than $2000. The average maximum risk for all companies reporting was $3994.

While rigid uniformity may not be desirable a reasonable approach to uniformity in the plans and practices, at least within a given state, would be a material advantage. The general public would be more easily convinced of the soundness and real value of these companies. The approval and support of the insurance department of the state would be more easily secured than is sometimes the case under present conditions. Financial institutions which lend money to farmers would more readily accept the policies of these companies as collateral, and lastly the companies themselves would find it easier to cooperate with one another in matters of reinsurance or joint insurance, as well as in meeting other problems that arise.

Agricultural News Notes of the Pacific Coast

Northern California

Many wine grape growers have perfected arrangements for drying.

Newcastle, Placer County, reports plums selling around $4.85 to $5.25 per crate.

Vaca Valley fruit growers have been shipping to canneries outside of Solano County.

Nevada County reports outlook for pears exceptionally good; plums and apples also looking well.

Vacaville has now shipped about 500 cars of fresh deciduous fruits, shipping each week approximately 60 carloads.

One Vacaville farmer has produced an exceptionally fine crop of tobacco which he thinks will command a dollar a pound.

The cannery at Yuba City has a baby checking room where mothers working in the cannery have the children cared for

The Butte County farmers bureau is making a definite campaign against "citrus blast" which is affecting many of the orange groves.

Gravenstein apple picking in the Sebastopol section is in full swing. It's the biggest crop in the history of the industry in Sonoma County.

There has been some injury to the grape crop of Sacramento Valley because of exceptionally warm weather during several days about July 15.

Tuolumne apple orchards are bearing their biggest crop ever and the growers are giving much attention to spraying for codling moth and expect big returns.

The California Tractormen's Association has engaged 200 rooms at Sacramento hotels during state fair week. They propose to be the whole show—pretty nearly.

The Penobscot Farm in Eldorado County and McFarland Farm in San Mateo County have received the state's largest shipment of Ayrshires. It is from Canada.

Colusa County's barley crop is nearly harvested. It is the largest in some years. The Sacramento River steamers are moving the crop to market as rapidly as possible.

Shasta County is fighting the Iron Canyon irrigation project. The claim is made that the dam will back up waters of the river so as to destroy $15,000,000 worth of property.

Sacramento is becoming headquarters of garden pea seed. This year's crop has been exceptionally successful. Over 1000 acres are planted in the Natomas district alone.

The first year of the cow testing association of Alameda County is just ended and steps are being taken to continue the work another year It is anticipated many new members will be added.

Rio Vista, Solano County, had the biggest asparagus cut of any year in its history. The California Packing Corporation's plant put up over 200,000 cases of grass; this is 30,000 cases more than last year.

Sacramento Valley canners piece work is on the following schedules: For preparing fruit—asparagus, per 100 pounds, 22 cents; cherries, 65 cents; apricots, 47 cents; cling peaches, 31 cents; free peaches, 20 cents; hand-peeling peaches, 50 cents; pears, 55 cents; plums, 16 cents

Central California

San Joaquin County farm bureau is talking county fair.

U. G. Strader, the Ceres Dutch Belted breeder, died recently.

A $200,000 potato dryer or dehydrator, is to be installed at Turlock.

A 135 acre barley field near Modesto went up in smoke last week.

Bartlett pears are now selling in carlots at approximately five cents each.

The first dried apricots delivered in Fresno County were brought in on June 25.

Cooperative associations never had such control of dried fruit markets as this year.

150 acres of Lindsay grown tomatoes will be packed by the Terra Bella Canning Company.

Commissioner Marchbank of Madera County is outlining a campaign for squirrel warfare.

The Farm Owners and Operators' Association will install grain graders at its Stockton headquarters.

California Dairy Council is discouraging the suggestion that Japanese milkers be employed in dairies.

During the height of the harvesting season in apricots at Hanford one association employed 1287 people.

Fresno estimates the San Joaquin Valley will ship 1500 carloads of peaches to Eastern markets this season.

Tulare County Cooperative Poultry Association is materially increasing its membership and amount of business.

Farmers of San Joaquin County who refused to abate the squirrel pest on their lands are being sued by the district attorney.

San Joaquin County farmers, especially those about Linden and Waterloo, are planning volunteer fire fighting organizations.

Fred Brosius, commissioner of Sacramento County, is making persistent fight on deceptive packs in fruit and vegetable markets.

A public sale of fat hogs at Tegner by the Stanislaus and Merced County farm bureaus brought what is claimed to be the highest price paid in this state, $19.75.

The Monterey County Cattlemen's Association recently met at Salinas and discussed cattlemen's interests, especially appealing for the ending of over-pasturing.

Representatives of various cooperative creameries met recently in Fresno to discuss turning the plants over to San Joaquin Valley Milk Producers and arranged to sell ten plants to that association.

The cantaloupe fields near Turlock, Stanislaus County, are being attacked by a fungus which it is claimed has reduced the crop at least 50 per cent The state horticultural commission is investigating.

Kings County creameries are paying: Lucerne Cream and Butter Co., 66 cents; Los Angeles Creamery Co., 66½ cents; California Central Creameries, 64.75 cents; Riverdale Cooperative Creamery, cream 65 cents, butter fat in milk, first grade, 82 cents, second grade, 77 cents; Kings County Creamery, 63 cents.

Southern California

Apricot growers are anticipating $37.50 per ton for pits.

Riverside citrus orchardists are installing new type orchard heaters.

San Bernardino is planning a fine county exhibit at the Riverside fair.

Nematodes have been causing serious losses in some cantaloupe sections.

Flowing artesian wells are showing a greatly reduced flow compared with former years.

Field and forest fires swept over 6000 acres of Etiwanda and Lytle Creek Canyons.

Lima bean crop of Ventura County, will be but little more than 60 per cent of normal crop.

Yucaipa shipped 4500 boxes of early peaches and is now busy shipping early summer apples.

Two canneries at Pomona put up in one week 1,300,000 pounds of apricots. The payroll for the week aggregated $13,000.

New edition of "Agriculture in the Imperial Valley" by W. E. Packard is being issued by the college of agriculture.

Architects are in consultation with Bruce Drummond and date growers of Indio devising plans for a date packing house.

A great number of women of the former Women's Land Army went into the apricot sections and aided in harvesting and cutting.

Citrus growers of Pomona in Los Angeles County, have asked an injunction against the city of Pomona enforcing its anti-smoke ordinance.

Orange County reports: "Valencia crop fair". However, Valencias have been more seriously affected by a few hot days this year than any preceding.

San Bernardino people near Urbita Park have declared war on the bull frogs because of their rich deep basso. One was killed which measured 13 1-3 inches.

The San Jacinto and San Bernardino mountains were given a terrific thunder shower, nearly an inch of rain falling and aiding many of the summer irrigators.

Rev. Mr. Gillan of Coachella Valley recommends a date association to market the products of the valley, the association to be founded along the lines of those followed by the fruit exchange.

A petition has been signed by a large number of irrigators under the Palo Verde levee, asking for changes in the management of affairs, especially with reference to the work of two engineers.

The Poultry Producers of Southern California Inc. are signing up contracts which will go into effect on January 1, 1920. This contract to take the place of the one which has been in existence for the past three years.

San Dimas, Los Angeles County, is still discussing the possibility of large water storage in the hills. Waters of the San Gabriel River have been filed upon to the extent of 25,000 acre-feet.

The County Beekeepers Association of Ventura have resolved, in a formal statement to the board of supervisors of the county, that the district attorney investigate matters in connection with the office of the county bee inspector.

The Coast and General

Schools of Arizona will cost $564,017 for next year.

Hood River is packing immense quantities of cherries.

Corn acreage in Arizona shows an increase of ten per cent.

Pima County, Arizona, is to vote on a bond issue of $1,500,000 for good roads.

The assessed valuation of mines of Arizona shows an increase of $7,000,000 over the valuation of 1918.

The state of Arizona is to have 300 trucks and other road equipment from the government for use on state and federal roads.

Heavy rains have occured throughout the entire state of Arizona. This has resulted in much benefit to the range and considerable damage to roads.

Klamath Falls, Oregon, started a campaign against grasshoppers with a showing of 120 of them to the square foot. The menace has been greatly reduced.

Retail dairymen supplying the Phoenix market have been obliged to raise the price of grade B milk from 12½ cents to 14 cents, on account of a ruling of the city milk inspector requiring them to keep it cooled to a temperature of 60 degrees.

It is probable that an election of the Salt River Valley Waters Users will be held in the near future to decide whether or not they will purchase and operate a cement plant, not only for the benefit of the association but for the manufacture of cement to be used in road making. It is said that by manufacturing the cement locally, a saving of more than $1,000,000 will be made in the building of the system of roads voted on at the recent road bond election.

A new system of checking the amount of water used by farmers has been adopted by the Salt River Valley Water Users' Association. Under the new system, each water user is notified of the amount of water consumed by post card the day following his run of water. This enables the farmers to check the amount used against the amount purchased, to prevent any possible errors, and enables the farmer at all times to know what his reserve supply of water is.

The agricultural experiment station at Tucson has issued a new bulletin number 87, entitled "Insect Pests of Interest to Arizona Cotton Growers" This was written by Dr. A. W. Morrill consulting entomologist of the agricultural experiment station, and former state entomologist. At the present time he is an expert on cotton diseases and cotton insects, employed jointly by the Arizona Cotton Growers' Association and the Arizona state horticultural commission.

The cantaloupe season in the Salt River Valley will be shorter than usual this year owing to weather conditions which ripened the melons faster than they could be gathered or shipped The total shipments will run probably about 1600 cars for the season. First shipments were made June 27. Early sales in Eastern markets were very good, some were selling as high as $7 a crate. Heaviest shipments in one day were 193 cars. Last year the heaviest shipments in any one day were 82 cars.

Further Comments on the June Drop

By Robert W. Hodgson

THE June drop continues to be one of the most important problems facing the grower of Navel oranges; it constitutes the most serious difficulty standing between the interior valley orange grower and prosperity, but the experience of the past three years has emphatically indicated that June drop may be a most aggravating problem even in the more favored coast counties. And not only are complaints voiced regarding the drop in Navels, but much concern is being manifest during the present season particularly over the serious shedding of immature Valencia oranges. The shedding has apparently even spread to lemons of recent years, much complaint being registered regarding the dropping of young lemons during the past two seasons.

In company with many others, both growers and investigators interested in this problem, the writer recently received a questionnaire from the Cultivator asking for the results of his observations during the present season and has read with a great deal of interest in last week's issue replies received from growers in many parts of the state. Having been connected with an investigation of this particular problem carried on during the past four years, the writer has been particularly interested in getting the viewpoint of the grower regarding the cause of the "drop" and has been especially pleased to note that practically every reply published reflects ideas regarding its cause which are in direct accord with the results of the investigation. In almost every reply the feeling is expressed that there is a definite correlation between the amount of drop and climatic conditions occurring during the critical period, which is precisely what the aforementioned investigation has clearly indicated. The idea is also frequently given utterance that one of the most satisfactory methods of avoiding heavy losses by the "drop" is to keep the trees in as vigorous and thrifty a condition as possible, which is also in accord with our findings. The reply of Geo. W. Waterbury of Corona is most interesting. He could hardly have written a statement more closely in agreement with the writer had we two been comparing notes. Another point of interest is the kindly feeling toward the summer cover crop where it is possible to grow it, expressed by a number of growers in their replies.

Although the Valencias and lemons have been dropping to an unusual extent this season we must still admit that the June drop is primarily a Washington Navel problem. Although it is to be presumed that the factors operative in causing abscission in the Navel might also and probably do act to cause more or less shedding in the two other important citrus varieties, there are still other factors which may have to do with this dropping and which play no part in the June drop of Navels. Such are, for instance, the presence of seeds. Other things being equal, the fewer the seeds the more likelihood there is of the fruit dropping before reaching maturity. Rather extensive researches along these lines with apples and pears in the East have shown a very definite correlation in this regard, and there is no reason why the broad general principles uncovered should not apply to citrus varieties normally bearing seed. The unusual shedding of lemons and Valencias may therefore be connected with poor pollination or failure to develop normal ovules in the fruits. But what have been the conditions this spring conducive to a heavy drop of the Navel oranges?

In many respects this season has been very similar to that of 1917 when the famous heat wave occurred. The greatest difference has been in the magnitude of the temperatures reached. During the spring months weather conditions have been dry and relatively cold. In fact, one might say they have been ideal for the trees in every way, just as in 1917 the state in general experienced a delightfully cool spring. The disastrous feature of such climatic conditions, however, is the fact that they do not favor hardening up of the young fruits so as to make them able to withstand hot dry weather. Suddenly with the advent of June there came a heat wave with three days of temperatures of 100 and better. The result was just what was to be expected, a heavy shedding commencing about the seventh of the month. Had we experienced a heat wave of the magnitude of the famous 1917 "sizzler" nearly everything would have gone just as it did then. The only thing that saved the crop was the comparatively low temperatures.

This statement of course has to do with Southern California in particular. In the San Joaquin and Sacramento valleys it is not so much high temperature which induces the drop as low atmospheric humidity. There the drop comes almost every year and has ever since Navel oranges have been grown. To be sure in certain years it is much worse than others and may be correlated with climatic extremes which occur, but it is a more or less regular phenomenon.

Then another condition generally regarded as conducive to a heavy drop, and which occurred this season, lies in the heavy bloom. In most sections the bloom was excessively heavy. Some recent work done by Heinicke on apples in New York is interesting in this regard. He found that trees which carried a very heavy bloom set and matured only 14.1 per cent of the blossoms while trees carrying only a normal bloom matured 73.8 per cent of the flowers. It stands to reason that a tree bearing many times the number of blossoms it can possibly mature is under a much heavier strain than one carrying but few more than it can successfully mature. And under such a strain it would only be natural to expect a much heavier shedding of the blossoms. And not only is a heavier fall of blossoms to be expected but also a generally weakened conditions among even the more vigorous flowers which cannot but be conducive to a light set of fruit. And the fact remains that the set itself was comparatively light this season, in most districts.

It is not reasonable to expect weak or sickly trees to bear satisfactory crops. Trees permitted to suffer for lack of water, trees underirrigated, trees not given adequate fertilization and trees neglected in any way cannot be expected to bear satisfactory crops.

There is, however, a June drop which has occurred on the healthiest trees, given every possible care. This is the true June drop, all others being a natural thinning down to the normal crop. Our investigations indicated that the true June drop in the Washington Navel orange is occasioned by two very distinct causes, one, abnormal water relations set up between the leaves and young fruits under severe weather conditions, and two, the attacks of a very weak parasitic fungus, Alternaria citri, which also causes a navel end rot of Navel oranges.

There is a delicate water balance or equilibrium existing in all plants, any severe disturbance to which is bound to react more or less detrimentally to the plant's general well being. Water is being absorbed by the roots and being given off as water vapor through the leaves. In order for growth to occur and a healthy condition to obtain, absorption must more than equal evaporation. If for any reason evaporation exceeds absorption, a water deficit occurs in the plant which, if carried far enough, results in wilting and ultimate death from desiccation. The ability of a plant to maintain a satisfactory water balance against more or less adverse conditions largely determines its zone of natural distribution. Thus we find desert plants provided with various devices, structural and otherwise, to reduce evaporation, and in addition with special powers of extracting moisture from relatively dry soils. Plants indigenous to the tropics however, such as citrus, are not found to be adapted to withstanding harsh climatic conditions. In the course of their evolution they have never experienced any such need.

When a deficiency of soil moisture occurs certain plant parts by virtue of their structure and function have a decided advantage over other parts in obtaining moisture. Thus the leaves, being subject to a strong atmospheric pull through evaporation, continue to take the larger part of the water supply to the marked detriment of young fruits if such happen to be developing at that period. Under certain conditions the leaves may actually withdraw moisture from the fruits, resulting in their desiccation. When this occurs many plants initiate a process called abscission and throw off or shed the fruit, and if the necessity becomes severe enough, even drop the leaves.

The June drop of the Navel orange has been found to be the direct result of an abnormal water relation of the kind above described. During hot dry weather the leaves actually draw moisture from the young developing fruits so that there is a periodical swelling and drying out which when continued for several days results in shedding within a week or ten days. This is only what would be expected when we remember that citrus trees originated in the tropics where they are still to be found growing wild in the shade of immense forest trees. Here climatic conditions obtaining during the blooming and critical period before the fruit is set are about as different from those occurring in California during the same period as possible. The atmospheric humidity is high and the temperature not excessive. The atmospheric pull on the leaves for water is comparatively low. With our hardy temperature-zoned fruits and even our desert shrubs experiencing abnormal water relations during periods of intense dry atmospheric conditions, what could be reasonably expected of citrus trees so poorly adapted to withstanding a high atmospheric pull for moisture? The wonder is that they hang on to as much fruit as they do.

Citrus trees have been found to exercise absolutely no control over their water loss; during hot dry periods they are absolutely at the mercy of the elements and react by shedding those parts of the least importance in the economy of the tree, the fruits.

Since the drop is largely due to climatic conditions, obviously measures of control must be largely in the nature of ameliorating climatic extremes which may occur during the critical period lasting between April and July 1. The most effective method of accomplishing this has been by the use of a rank growing early summer cover crop which carpets the ground in the orchard during this period. Plantings at Bakersfield and elsewhere last year, where managed properly, showed phenomenal results in increasing the crop matured.

Of all the crops used to date, Melilotus alba, alfalfa, and buckwheat have given the most promising result. The writer knows of no good reason why Melilotus indica should not prove more satisfactory than any of these. Cowpeas and beans apparently must be abandoned as crops for prevention of the June drop. Where plenty of water is available, planted early enough, irrigated copiously and handled properly, the summer cover crop for prevention of the June drop still holds out the greatest promise of successful control.

Protecting the soil in any way from our intense summer heat has shown beneficial results in preventing June drop. Thus mulching with almost any material was found to be a decided aid in 1917.

Providing a plentiful supply of available nitrogen for the trees during the critical period has been shown to result in a decidedly better crop of fruit.

The influence of pruning on the set of fruit is a subject of considerable interest to growers, some contending that it is beneficial, others insisting that it be avoided as inducing an undesirable shock to the trees. Since most of the true drop is undoubtedly due to abnormal water relations occasioned by the leaves appropriating moisture from the fruits, it would seem that a judicious reduction in leaf surface accomplished by pruning at a period early enough so that the trees would be well over the shock before coming into bloom would have a very beneficial effect. Certainly all suckers and rank growing shoots should be cut out prior to the blooming period for they lose many times the amount of water per unit of area as the heavier, more coriaceous and pulpy leaves.

A certain part of the shedding is due to a fungus, Alternaria citri, which infects the young fruits through the cracks and imperfections in the navel end. The amount of infection and consequent dropping due to this fungus varies greatly from season to season, but apparently has been large during the past two seasons. Some of the affected fruits persist to maturity

Continued on Page 131

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, August 2, 1919

OUR ADVERTISERS RELIABLE
We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Summer fallow is keeping some of our tractors busy, and orchard work which continues the year through is keeping many of the lighter power machines in action, but it is possible that more of them have been resting during the past few weeks than will be for another ten months. The tractor and farm power and implement people are anticipating greater activity in their trade during the next few months. The Northern association is making preparations for a great show at the state fair the first of September. The Southern association is planning for a demonstration which possibly will eclipse all others, and the farmers will take advantage of both of these opportunities to secure information as to more efficient and more profitable farming. The two events will be materially different because the one at the fair at Sacramento will be a still exhibit of power and implements while that at Los Angeles will be in the nature of a private demonstration. No public contests are to be staged.

BEAUTIFUL AND FRUITFUL

Nurserymen's associations of the country are uniting in a "More Beautiful and Fruitful America" campaign, and the first proposition is that the nurserymen encourage the campaign not only by propaganda but by producing the highest and best quality of fruit and plants which will produce high quality sought for fruits. The wealth of fruit growers depends greatly on painstaking care on the part of some nurseryman who has hybridized and selected to the end that orchards and fruit gardens have been made more productive.

LESS WHEAT

Several sections of the East are complaining bitterly because drouth, hot weather, rust or other unsatisfactory condition is greatly reducing the prospects for big crop. This seems to be especially true in portions of Ohio. There stinking smut has been one cause which has reduced the output more than any other. An extremely small portion of this smutted wheat reduces the grade of wheat and flour so as to materially cut prices. This trouble may be controlled by seed dipping, and it is presumed the next crop will have more attention paid to modern planting methods.

THE BOARD OF AGRICULTURE

Former Horticultural Commissioner Hecke is now agricultural commissioner for California. The dairy bureau which formerly had its headquarters in San Francisco is now moved to Sacramento, and it and other agricultural activities will be under the direct supervision of one head.

The farmers of the state are hoping for more efficient service from this newly organized department of the state administration and everything indicates that it will be all that is hoped for it. Commissioner Hecke has announced that there will be few if any changes in the personnel of the various bureaus or departments.

METRIC SYSTEM

Now arises a new society, this time to secure adoption by the United States of the metric system. We might feel more sympathy with the propaganda of this association were it not for the tone of the matter which it is sending out: "The two stupidest nations are Great Britain and the United States." German wisdom in accepting the metric system is lauded while the "two greatest?", with emphasis on the question mark, are "trying to do business with Germany's cast-offs."

However, it must be admitted that scientific work usually calls for the metric system and ultimately the United States will come to this more easily handled and common sense system of weights and measures, as it has in its monetary system.

CANNING COMPOUNDS

The time was when many of the housewives of the country used preservatives in all home canning operations. The department of agriculture has taken pains to make thorough investigation and it has determined that this practice is harmful. Within the past few years the practice has materially declined and but few use any other sterilizer than heat. However, there are occasionally those who do, and the department is giving warning that the practice should be discontinued by all. This seems to be made necessary by the enterprise of certain manufacturing chemists who are producing compounds and selling them under various trade names. These preparations usually contain salicylic or boric acid and are entirely unnecessary where proper canning methods are used.

IN THE SHED

House the farm implements. The hot sun of midsummer shortens the life of many a farm implement. To be sure, lumber is high; farm machinery and farm implements are higher. A bit of shade is just as grateful to the tractor or implement as it was to Old Dobbin.

While it's being housed a spare day may occasionally be given to cover some of the bare spots with a bit of paint.

THE FLEET IS HERE

The population of the Pacific Coast will receive its greatest increase this week. The great Pacific fleet which has passed through the Panama canal and is now leisurely floating up the coast brings to us an increase in population of practically 50,000 people in one day.

Heretofore it has been considered that the Atlantic Ocean ports were all of America that needed protection. The wisdom of dividing the forces has been seen and the Panama canal has made possible separating the great fleet of the nation. California is preparing for its greatest celebration.

San Diego is the first point touched Later Los Angeles and San Francisco will give welcome to the boys who have been so efficient in carrying nearly 2,000,000 of our soldier boys across the Atlantic and bringing them home again with scarcely a loss at sea. The fleet is composed of over 200 vessels.

AN EYE ON THE TARIFF

Without question there will be tariff revisions. Some are in favor of making immediate revisions because of war conditions and the effect on some exports. For example, there is potash. It is generally conceded that that industry needs protection. Others think that there should be no revision or change until the country is ready to make a change all along the line. But in any case the question is up.

Farmers interests will be protected if the farmers arise to the occasion and attend to their own protection. Otherwise they will get what their indifference entitles them to. Fortunately strong cooperative organizations have brought farmers together so that it is possible to make their influence felt. It makes little difference whether one is a free trader or a believer in protective tariff when it comes to his own product being discriminated against.

ATTACKING FARM LOANS

A bill has been introduced into congress providing, amongst other things, that that feature of the law which governs farm loan banks, exempting bonds from taxation, be repealed.

The foundation of the federal farm loan scheme has been the handling of the people's money under government guarantee by the farmers at what, from the farmers' standpoint, is a low rate of interest. This has been regarded—by its enemies—as a paternalistic provision under which government money is advanced to farmers at a lower rate of interest than the government would loan to business interests.

Such an idea is entirely in error. The management of the bank is under government control. To secure money to loan to farmers bonds are sold which bear a low rate of interest but are tax exempt. If this tax exemption can be removed banks feel that they will have a more even chance in loaning money to farmers at a much higher rate of interest.

Meantime it's wise for farmers to watch the action of their own representatives and make known their desires as to federal farm loans

THE NEW MOTOR LAW

The new motor, or headlight, law which was passed by the last state legislature went into effect on the morning of July 22. Thirty days will be allowed the motor vehicle people to fit their machines and their driving practice to the new law.

One point which calls for immediate attention — for it may require some time for adjustment—is that relating to headlights. There have been many accidents caused by the glare of headlights, and it is well that action has been taken by the state legislature in this particular. Here is the merest outline of the new law:

Registration

Upon the transfer of a motor vehicle from one owner to another the registration certificate is transferred to the new owner and the registration number remains with the motor vehicle so transferred.

Headlights

Headlights on motor vehicles must be of such force as to permit driver to see any object in the road 200 feet in front of the motor vehicle.

Motorists must comply with the provisions of the headlight law within thirty days from July 22.

None but authorized headlight devices can be used to prevent the glare which the law is enacted to eliminate.

All bicycles must carry a light visible 300 feet directly in front of the bicycle and a reflex mirror or red light on the rear, visible for at least 200 feet.

All horse drawn vehicles must carry a light so arranged that it will be visible from every direction for a distance of not less than 200 feet.

All spot lights on motor vehicles must be so arranged that no portion of the beam of light when measured 100 feet or more ahead of the light shall rise to more than 42 inches above the level surface upon which the vehicle stands.

Rules of the Road

On suburban roads there must be a distance of 15 feet between any motor vehicle and another motor vehicle, horse-drawn vehicle, or person.

The operator of a motor vehicle shall yield the right of way at the intersection of their paths to a vehicle approaching from the right unless such vehicle approaching from the right is further from the point of the intersection of their paths than such first named vehicle.

Hand Signals

Signaling may be done with the hand and arm or with a mechanical or electrical device approved by the State Motor Vehicle department.

When signaling with the hand and arm use these signals:

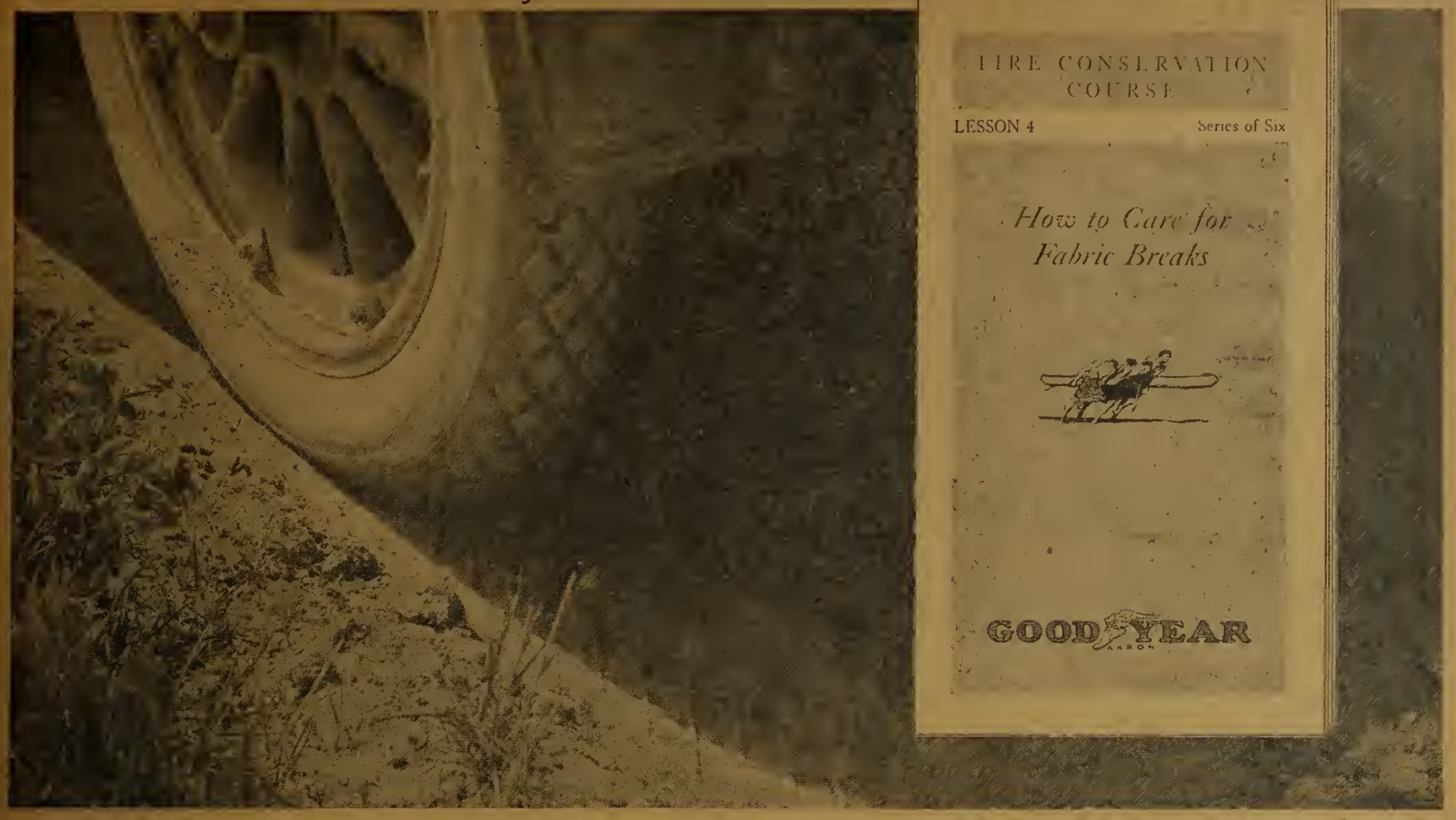
1. Arm straight out—Turning in direction toward which the arm and hand is pointed.
2. Arm pointed upward—Turning in the opposite direction.
3. Arm pointed downward—Stopping or suddenly checking speed.

No baggage carried on the left running board of a motor vehicle can extend more than 12 inches from the body of the car.

Speed Limit

Under certain conditions, chief of which is that there shall be an unobstructed view of the road for a distance of 400 feet in front of the machine, the speed limit on the county highways will be 35 miles an hour.

No vehicle shall be turned around on a public highway except at the intersection of another street or highway, except that in country districts where intersecting streets are few in number this rule will not apply.



Saving 2,000 Miles

by Repairing Stone Bruises

A GOODYEAR Tire that looked perfectly sound on the outside blew out one day. The owner, Mr. J. G. Jenkins, of 2106 Maryland Avenue, Louisville, took it to a Goodyear Service Station. Examination revealed a fabric bruise on the inside of the tire—probably caused by bumping into a sharp curb. The bruise had been neglected so long that it had developed into a serious fracture whose edges caught and pinched through the tube, causing the blow-out. The Goodyear Service Station Dealer advised the use of a Goodyear Rim-Cut Patch. With it Mr. Jenkins got 2,000 more miles from the tire.

◇ ◇ ◇

NOT even the thick muscular Goodyear All-Weather Tread can protect the inner plies of fabric tires when cars are backed sharply against square curbs or strike objects at high speed.

In such cases the innermost layers of fabric are sometimes stretched beyond their elastic limit and some of the threads have to break.

The tire is weakened at this point, the fracture enlarges, and eventually the tube is pinched by the jaws of the resulting fabric break and a blow-out follows.

Generally such tires can be satisfactorily repaired.

Goodyear Service Station Dealers and many car-owners use the Goodyear Rim-Cut Patch to temporarily repair such bruises until it is possible to have them permanently vulcanized.

If the tire is too old to be worth vulcanizing, the Goodyear Rim-Cut Patch, securely cemented in, makes a permanent repair enabling the tire to deliver a great many additional miles.

This most effective inside boot is so constructed that it will repair any possible injury—a cut through the top—a blow-out in the side, or even a rim-cut.

It gained its name many years ago, before Goodyear improvements had produced tires constructed to eliminate rim-cutting.

For Cord Tires the Goodyear Cord Patch is used in the same manner as the rim-cut patch.

Lesson 4 of the Goodyear Conservation Course tells you how to detect and repair stone bruises—ask your Goodyear Service Station for it, or write to Akron.

The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR

AKRON

TIRE SAVERS

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Found free from the following noxious weed seeds: Dodder, Star Thistle, Thistles (*Circium spp.*, *Carduus spp.*, *Cnicus spp.*) Morning Glory, Johnson Grass, Hoary Cress and Ribwort.

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LOWEST GERMINATION 90 20/100 %

Insure a better, thicker cover crop by planting only Germain's high-test Melilotus Indica Seed.

Look for the certificate of quality which is attached to every sack. This is your protection against seeds of inferior grade.

Samples and prices will be forwarded promptly upon request.

We are headquarters for all varieties of cover crop seeds. When ordering, ask for GERMAIN'S PROVEN SEEDS.

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Filled with Ring Oiling Bearings

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We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

1919 Standardization Chart

A CHART summarizing, or giving at a glance, the provisions of the 1919 standardization law has been prepared by the state commission of horticulture. From it we give:

All fruits, except oranges, must be mature but not overripe, well colored for variety and locality, virtually uniform in quality, free from rots, bruises and sunburn, and must be uniform as to size. In addition they must approximate the same numerical count in each layer.

Oranges must be free from insect and fungous pests, virtually free from frost injury or other serious defect. Sugar content (soluble solids) eight parts to one part of acid and 25 per cent yellow or orange color before picking; substantially colored (75 per cent color) before picking if test is less than eight to one.

Almonds must be virtually uniform in quality, free from insect and fungous pests, and free from other serious defects.

Berries must be mature but not overripe, virtually uniform in quality, free from insect and fungous pests, free from rots, sunburn or other serious defects, uniform as to size.

Onions must be uniform in quality, virtually free from insect and fungous pests, rots, other defects, and same numerical count in each layer.

Grapes not overripe, well colored, uniform, free from insect and fungous pests, rots, bruises, frost injury, sunburn or other defects. They must have a sugar content of not less than 17 per cent Balling scale, all varieties except Emperor, Gros Colman and Cornichon, which must test at least 16 per cent.

Sweet potatoes must be uniform, free from pests, rots, other serious defects, uniform layers.

Walnuts, uniform, free from insects, sunburn or other serious defects.

The apple standardization act is a separate act. It provides that California Fancy grades shall be well grown, mature, one variety, hand picked, stems retained (excepting Gravensteins may be packed as California Fancy with stems removed), well colored, normally shaped, uniform in size. (A variation in size not to exceed three-eighths inch, measured through widest portion of cross section shall be allowed. No apples less than two and one-quarter inches when measured in like manner shall be allowed in "California Fancy" grade, except Lady and Winesap apples, when the smallest size shall be two inches). Well packed, free from pests and diseases, (three per cent of any one defect, not to exceed ten per cent total defects shall be allowed), free from visible rot, dry rot, Baldwin spot, insect bites, bruises, frost marks, sunburn and other defects.

"B" grade requirements the same excepting retained stems not required, neither does the well-colored provision stand. Insect bites which have healed in the process of maturing and which do not cause serious deformity, and slightly misshappen apples shall be permitted and slightly frost-marked or sunburned apples shall be allowed.

"C" grade exemptions are that they need not be so well grown nor hand picked nor stems retained nor well colored nor uniform in size and pack nor free from bruises, frost marks, dirt, etc.

An exception will be made of bruises and other defects necessarily caused in packing.

Stamps designating grade may be purchased from state commission of horticulture at one-half cent each. State inspectors are paid from fund accruing from sale of these stamps. When state stamps are not used the same grade requirements must be met and boxes stamped with proper grade in letters not less than one-half inch high.

A variation of five apples more or less than the number stated shall be allowed.

If variety is unknown to the packer the statement "variety unknown" must appear on the box.

Apples which do not conform with the packing requirements may be sold in bulk to by-products factories or consigned to a packer for packing.

Box Marking

Grade (California Fancy, B or C).
Number in box, or net weight.
Each variety.
Name and address of packer. (Either first pack or repack).
Date when packed or repacked.
No misleading statements.

Standard box, depth 10½ inches, width, 11½ inches, length 18 inches, inside measurements.

Dried Wine Grapes

The state board of viticultural commissioners, Sacramento, has issued Bulletin No. 15, "Dried Wine Grapes" which will doubtless be placed in the hands of every wine grape grower of California. It has to do with the drying of these wine grapes. Prof. Bioletti gives information as to methods and returns. He takes the ground that many of these grapes will be dried for the purpose of later being soaked up with water and made into wine, and calls attention to the steps necessary to produce such a product. The method of making an evaporator for wine grapes is given with photographs and drawings by Prof. W. V. Cruess. However as to general principles of evaporator construction we quote from the bulletin:

By W. V. Cruess

After studying numerous home-made evaporators which have been used for drying grapes in various parts of the state the form described here appears to be the most suitable for the drying of wine grapes during the coming season. It can be easily and quickly constructed by local carpenters and plumbers in any district; it has proved in several years' trial in Fresno County to be a satisfactory and practical type, and apparently is of such design that no patent rights are violated in its construction. This evaporator is also suitable for drying rain-damaged raisins or prunes and for other fruits or vegetables.

Other types of evaporators can be used. The most important are described in Circular 213 of the California Experiment Station. (Evaporators for Prune Drying, W. V. Cruess, University of California Agricultural Experiment Station. May be obtained free of charge upon application to the College of Agriculture, Berkeley, California).

A brief summary of the principles of evaporation as applied to the drying of grapes will give a clearer understanding of the requirements that must be fulfilled in the building and operation of a grape evaporator.

Principles of Evaporation

The principal object to be attained in evaporation is the removal of enough of the moisture from the fruit to prevent spoiling of the dried product in storage or shipment. This, in the case of wine grapes, must be accomplished not only economically, but also in such a way that as much as possible of the grape flavor and color are retained.

Evaporation is the change of water from the liquid state to the gaseous or vapor state. Heat is necessary for this change.

The necessary heat may be furnished naturally by the sun or may be obtained by the burning of fuel. Sun evaporation changes the color and flavor more than drying in an evaporator.

The moisture evaporated by heat is taken up and carried away by the atmosphere. In order that evaporation may be rapid and continuous, the moisture-laden air must be removed rapidly and continuously; that is, movement of air through the evaporator is essential.

The volume of air necessary depends upon two factors: the temperature of the air and its moisture content or "humidity." Each 27 degree Fahrenheit rise in temperature doubles the moisture-absorbing capacity of air—

for example, a given volume of air at 154 degrees Fahrenheit has about twice the moisture-absorbing power of the same amount of air at 127 degrees Fahrenheit. Air on a rainy or foggy day has less moisture-absorbing power than air on a dry summer day. This affects the volume of air that it is necessary to use. About 65,000 cubic feet of air falling 1 degree Fahrenheit will furnish enough heat to evaporate one pound of water, or 2600 cubic feet falling 25 degrees Fahrenheit will be necessary to accomplish the same result. The last figures are convenient as a rough measure of the amount of air necessary under average conditions because the air will in most grape evaporators enter the drying room at 145 degrees Fahrenheit to 150 degrees Fahrenheit and leave it at about 25 degrees Fahrenheit lower.

A large amount of heat is unavoidably lost during the operation. Some radiates from the walls of the evaporator; some is consumed in warming the fruit from outside temperatures to the temperature of the evaporator; but the largest loss is in the air leaving the evaporator. The extent of this last loss is shown by the fact that during summer the outside air, averaging, say, 80 degrees Fahrenheit enters the drying room at 145 degrees Fahrenheit and leaves it at 120 degrees Fahrenheit. The air is heated 65 degrees Fahrenheit, but only 25 degrees Fahrenheit of the added heat is used. Thus more than half of it is lost. Theoretically, we would be able to use the heat more completely if we permitted the air to become thoroughly saturated with moisture before leaving the drying room. Practically, this is not feasible, because the fruit gives up its moisture very slowly to air that is nearly saturated with moisture, and to obtain a reasonable rate of drying the air must be allowed to leave the evaporator only partially saturated. Tests reported by the Association of American Heating and Ventilating Engineers indicate that on the average only about 40 per cent of the heat furnished to the evaporator is actually utilized in evaporating moisture from the fruit.

Other things being equal, the rate of evaporation is proportional to the volume of air passing through the evaporator and the temperature of the air. It is possible, however, to reach a point where the moisture in the interior of the fruit can not diffuse to the surface as rapidly as it is absorbed by the air. This results in drying out and hardening of the surface of the fruit, a condition termed "case hardening." This condition greatly slows up the drying process. It is not believed that grapes will exhibit this phenomenon except near the end of the drying period because their juicy nature will permit the rapid diffusion of moisture.

There is for all fruits and vegetables, when dry, or nearly dry, a temperature above which rapid deterioration takes place. For grapes of the Sultanina variety, this temperature has been found to be about 145 degrees Farenheit, and it is believed that wine grapes are no more resistant; 145 degrees Farenheit is a very much lower temperature than is used for vegetables, or even for prunes.

PRUNING METHODS; OLD AND NEW

By Leonard Coates

IF it be admitted that the method of pruning deciduous fruit trees advised by Dr. J. C. Whitten and his assistants of the college of agriculture will increase production so that "the average yield of the trees pruned is said to be about four times as great as that of trees of the same age pruned in the old way," the questions arise: "How will the size and quality of such fruit be affected?" "How will the soil, already claimed to be overstrained, stand this extra demand upon it?" "What will be the increased cost of thinning to those who desire only a fair crop if the quality is right?" "How will the Prune and Apricot Growers' Inc. be able to handle four times as many prunes as are already predicted as a crop in the near future?" These, and other questions naturally suggest themselves.

Amongst the many evils to be corrected in California orchards, perhaps the greatest is that of overcropping. Is there an orchardist in the state who yet has been able to get his fruit properly thinned? This may not apply to prunes, although I doubt the ability of the average prune orchard to properly mature four times or even twice as much as it is accustomed to do. The complaint of packers has been for years that fruit is running too small, and many apricot growers are asking the association if they may not dry their fruit whole as it is too small to cut. Will not the new and admirable standardization laws object when smaller fruit is shipped East, and how will this be avoided if the trees are going to be coaxed into much heavier bearing?

California's climate, or climates, conduce to heavy and regular yields of fruit, but it is true that adverse weather conditions occur and are much more noticeable now that there are hundreds of thousands of bearing acres instead of thousands, besides the ever increasing list of insect pests which play havoc to the extent of many hundreds of millions of dollars annually on farm products generally.

Quality is better and pays better than quantity; as a broad proposition, you can not have both. The progressive grower, shipper and packer has been advocating this for years.

Pruning has for its object the limitation of production as much as its extension, although it must be admitted that a promised increase is most alluring with present prices in view. In Europe, especially in Great Britain and Northern Europe, the whole art of the gardener and of the orchardist is used to increase production, even to the extent of periodically "lifting" the tree and pruning its roots, and by "pinching" the growing shoots throughout the summer season.

The various fruit growing states in

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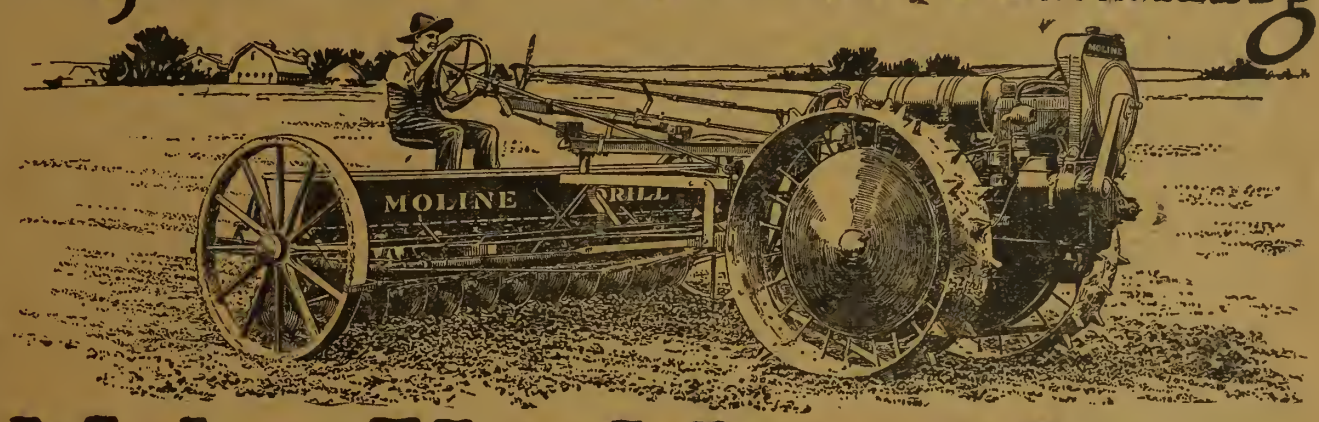

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"Makes farm work more enjoyable. Does away with high feed prices and shortage of labor." Zimmermen Bros., Earlville, Ill.

"It has placed me above my neighbors, who do not use the Moline-Universal Tractor, for efficient and economical farming." J. C. Felts, Winfield, Kans.

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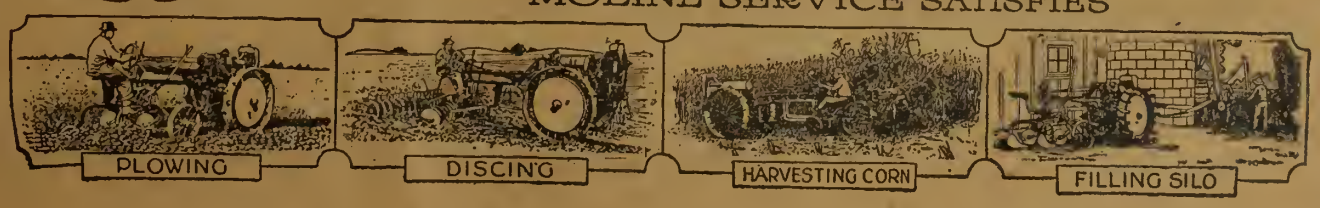

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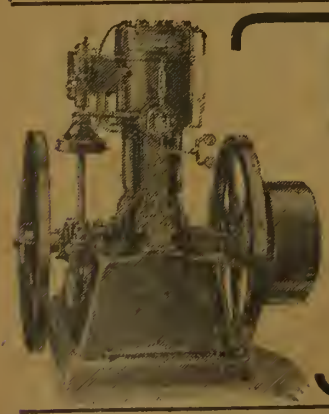

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the Union, apart from those on the Pacific slope, frequently have partial to total failures of crops, those providing a rest for both tree and soil. Such trees should be better able to carry very heavy crops in years when weather conditions are favorable, but California's fruit trees are usually expected to do full duty every year, and generally fulfil these expectations.

PREPARING THE SURFACE FOR PAINTING

It is common practice when we do an odd job of painting around the home to simply apply the paint without thought in regard to the surface for foundation. It is just as important that the surface be in good condition as it is that we select a good grade of paint, for no matter how good the paint the result will be far from satisfactory if some attention is not given to this detail.

In the first place, the surface to be painted must be clean, dry and free from dust, grease and dirt. On new work, a thin coat of shellac should be applied to all knots and sappy places. On work that has been previously painted, use a wire brush to remove all loose particles, and spots that are entirely bare where the paint has chipped off should be given priming coat of paint reduced with turpentine.

The extra labor in thus properly preparing the surface will be more than justified in the durability of the paint coat and the smooth, uniform appearance of tho finished surface.

This Month in the Vegetable Garden

Northern California

By A. R. Gould

REAPING the harvest of one's labor is the most encouraging part of work in the garden. Besides being profitable it can also be interesting if a record of planting events has been kept; and it should be possible to refer to data throughout the year. Such a system will lead to increased interest and greater results. Our record should show condition of soil when crop was planted, quantity of seed used, with or without manure, when and how cultivated, weather conditions and full details of yield. This information will prove to be invaluable for all future work as by it one can best judge if the results have been worth while. Trouble from insect and fungoid pests should also be carefully recorded and methods of control adopted. Investigation along these lines should be the duty of all who love garden work as there is always something new to learn. This month many important crops may be dug and stored ready for further use, and every care should be exercised while digging these up so that they are not bruised, and any root crops so damaged or found diseased should be thrown out and not stored with the rest. Store in dry sand or earth in a cool, dark place such crops as turnips, beets, carrots and potatoes. Clear as much ground as possible and never leave these root crops in after they have reached maturity as they will start a secondary growth and become tough and useless, besides wasting the ground which can be used for further production.

Tomatoes

There are already signs of a good crop and the vines are still in very active growth. Where they are being grown on the single stem or trained system all side growth or axil shoots should be kept pinched out. To assist pollination the plants should be kept free from heavy overhead watering and it is advisable to gently shake the branches during the middle of the day.

Beans

Keep this crop picked off as the green pod or golden wax become ready for table as it will help the vines to produce larger crops. On ground cleared from root crops sow stringless green pod and golden wax, and the plots sown last month should be watered and the cultivator kept busy. Collect all dry beans from early crops and store these in a dry place for winter use. If required for seed keep the varieties together and have them of selected type.

Corn

Any cobs of the desired type required for seed saving should be marked and harvested when properly ripe. Early plots should be cleared off and prepared for planting up to other crops in the fall. A sowing of the early Golden Bantam may still be made. Corn sown last month should be well cultivated especially after irrigation. Apply dry arsenate of lead to the silks, of any ears as they develop to prevent the corn worm.

Lettuce

Sow May King and Big Boston or Iceberg for late summer and fall supply. Sow thinly in rows and thin out to eight inches apart or it may be sown on a seed border and shaded from the hot sun during the day.

Brussels Sprouts and Kale

At the end of the month seedling plants of these sown last month may be planted out on richly prepared soil

Cabbage and Cauliflower

Seeds of these should be sown thi month. Sow Early Snowball cauliflower on a border of well prepared soil or in boxes and Autumn Kin cabbage.

Leeks and Celery

There is still time to plant ou strong healthy plants you might s cure from your nurseryman. Thos previously planted should be well w tered and at the end of the month a application of artificial or liquid m nure may be given. Soot may also b applied very liberally.

Onions

This crop will be ready to harve this month, and after the tops hav dried off they should be ready to pu This is always a sure indication. Th bulbs should be well dried off in th sun before being stored away.

Potatoes

If the tops of these have beco yellow the tubers may be dug up, fact the main crop should be rea this month to store away. Lat crops should be irrigated once t month and hoed.

Turnips

Sow White Egg and Purple Top A erdeen for fall and winter use.

Southern California

By D. F. Reichard

THIS is the time that we get ahead of our Eastern friends. During August and for a couple months to follow we of California make garden for our crops of fresh winter vegetables. August starts our second spring.

Where early crops have matured clean up the ground and give it a thorough soaking. Plow or spade it deeply and pulverize it well. Then about a week before you wish to plant soak up your land again and work it over, putting it in shape to properly receive the seed or young plan All this irrigating is to take the pl of the rains we don't get.

Your plantings should follow t second working of the soil as clos as possible so as to take advantag the moisture which so readily osca during these warm days. In the c of seeds they should be planted ab twice as deep at this season as w planted in the early spring bec the surface dries out so much quic

at this time. For the looks of the garden as well as the ease with which it can be handled plant stuff in neat, regularly spaced rows.

Many of our vegetables like beets, carrots, turnips and parsnips are better grown in the fall and winter months than at any other time of the year. The cool months in which they mature give them better flavor and they have better keeping qualities than spring grown stuff.

Cabbage and cauliflower are best when grown during cool weather. Plant the seed now for crop to come off during January and February.

The first part of August is the time to plant fall potatoes. Those in at this time mature during cool weather and keep in good shape through the winter and spring. For fall plantings about 50 per cent more seed is required for a given piece of ground than is necessary for the spring planting. That is to say, it will take about 1000 pounds of seed potatoes to plant an acre now as compared to 600 pounds in the spring.

In the sections of late frost many of the regular summer vegetables may be planted during August with safety and profit.

The fall planting of peas starts this month. Be sure to have the ground well wet and prepare for irrigating every week until the weather cools. For successions, plant lettuce, radish, kale, parsley, Swiss chard, beet, carrot, turnip, salsify and onion. All of these should be drilled in rows 12 to 20 inches apart where they are to grow to maturity. Thin out the young plants when a few weeks old so that they will not crowd each other. With peas, beans, corn and potatoes it is better to plant in hills where they are to grow with rows 30 to 36 inches apart. Cucumber, summer squash and melons should be planted four to six feet apart.

Watch for insect and fungous attacks. Red spider and mildew are liable to be bad at this time. A liberal dusting of sulphur will control the spider while lime sulphur solution or Bordeaux mixture will eradicate the fungus.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Summer Wilt of Tomatoes

Am sending part of a tomato plant. Its leaves suddenly wilted as have others in the same field. They have been well irrigated and can see no cause for the trouble.—Subscriber, Big Pine.

This is plainly fusariun or summer blight of the tomato. There is no saving of the plant which has become affected. Sometimes an entire field is destroyed by this pest. About the only procedure is to remove and burn at once any plant as soon as it shows that it is affected with the blight. Care should be taken to secure disease free plants and place in soil free from the disease. In fact the selection of the seed should be done with an idea of securing the seed from disease free plants. Write University of California, Berkeley, and ask for Bulletin No. 239 "Culture of Tomatoes in California". This gives photographs showing the appearance of the plants so that every tomato grower may quickly locate the cause of the trouble.

Spineless Cactus to Dairy Cow

Will the feeding of spineless cactus dry up a cow? I have been told that it will. Would like to hear from someone who has had experience in that line.—Subscriber, Redlands.

We pass this on to subscribers who have had experience. However we think it may depend largely upon the other feeds supplied. If the spineless cactus is fed with the idea that it will sustain life and supply all milk making feed, the cow will certainly decrease in flow. Analysis shows the feeding value of cactus to be extremely low, lower even than pie melons and with not one-half the milk producing value of mangels, pumpkins and similar feeds. If, however, these feeds are used simply to supply succulency and as appetizers, with sufficient alfalfa hay and possibly a concentrate, there is no reason why they should not induce increased milk flow. Alfalfa hay contains five times as much protein as does spineless cactus.

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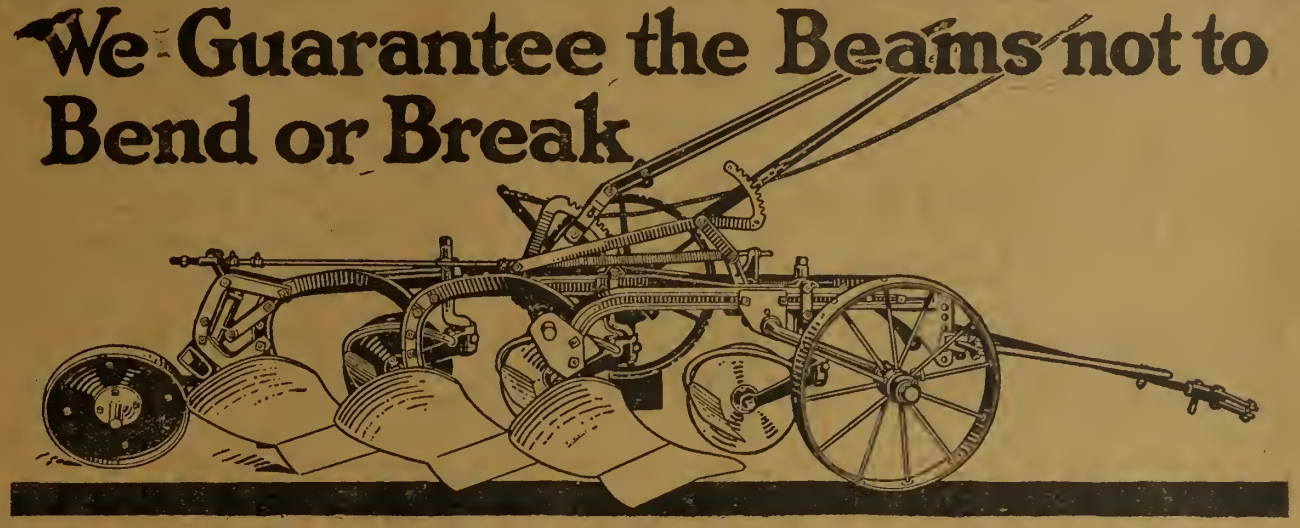

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CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $25 with fodder binder. The only self gathering corn harvester on the market. that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y. writes: "3 years ago I purchased your Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Huggins, Speermore, Okla. "Works 5 times better than I expected. Saved $40 in labor this fall." Roy Apple, Farmersville, Ohio: "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John F. Haag, Mayfield, Oklahoma. "Your harvester gave good satisfaction while using filling our Silo." K. F. Ruegnitz, Otis, Colo. "Just received a letter from my father saying he received the corn binder and he is cutting corn and cans now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvester at work and testimonials.
PROCESS MFG. CO., Salina, Kansas.

Fresno County Poland-China Breeders Association

will hold their

Inaugural Sale

of

POLAND-CHINAS

Fresno, Wednesday, August 20

The consignors to this sale feel that you will appreciate the quality of this initial offering. The blood lines represented in the offering include such noted boars as PRESIDENT, JUMBO'S EQUAL, KING'S BIG BONE LEADER, YOUNG JUMBO AND MODEL FELLOW.

The bred sows and gilts will be bred to VAUGHN JONES, HATER'S BIG BOB, CALIFORNIA JUMBO BUSTER and BLUE VALLEY KING.

50 Head Will Be Sold at Your Own Price

Sale starts at 12:30 P. M. Free lunch.

Write Walter C. Ficklin, Secretary, Bank of Italy Building, for catalog.

Alfred Buckland, Pres. Walter C. Ficklin, Sec'y

Col. Geo. W. Bell, Tulare, Auctioneer

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

It's a Source of Satisfaction to Know Where to Find the Right Kind of Hogs When You Want to Buy

King Jones Over

A son of the great King Jones. Dam by Long King out of a Big Bob sow. He possesses all the qualities of the modern Poland-China, weighs 600 pounds at 14 months, stretchy, deep, well hammed and right up on his toes.

He leads the best herd of strictly big type sows in California.

Some extra good fall boars for sale now. Cholera immune.

McCarty & Starkweather
P.O. Box 2250, San Francisco
Ranch, Paradise Road, Modesto

Look to the Future

Many good sons of King's Big Bone Leader have gone to head good herds. If you want big type Poland-Chinas come where they are bred. Wakeen Herd of Champions.

Les McCracken Ripon, Calif.

Bred Sow Sale in October

WHIZ---BANG

A real big type Poland-China boar by Forrest View Bob by Caldwell's Big Bob. Bred big. Is big. Two litter mates now for sale at a reasonable price. His pigs a little later. Write for price and description.

J. H. Cook Paradise, Calif.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

The Record of Production for Grade Cows

By C. V. Castle, University of California

IN starting this record of production the University of California feels that there is a need for this work and that it may be a great help to the dairy industry in a large portion of this state.

Never before has dairying been so profitable and never has the price of grade cows been so high, yet the price of many a grade cow might have been doubled and that of her heifer calf also if she had had an authentic certificate of production, showing just how good a cow she was. At one recent public auction in this state heifers from a grade cow, that had been the leading grade cow in the recent California State Dairy Cow Competition, sold for more than twice the price of heifers that looked just as promising but whose dams had nothing to show for their production.

It is up hill business to build up a dairy herd from cows bought on the market with nothing to show their value, while if it were possible to buy cows that you knew were producers, or heifers from such cows, and breed them to a pure bred bull with production back of him, it would be a simple matter to build up a profitable herd.

The issuing of a certificate to a cow will increase the care and feed given to her by the ordinary farmer. It will stimulate the work of cow testing in general because the cows with certificates, and daughters of such cows, will be in demand, and farmers who have never had their cows tested will become interested and begin to join the cow testing associations.

This work would be complementary to the work of the cow testing associations. The ordinary association has not the time to issue certificates to the eligible cows in its membership and, besides, it is felt that the certificate would mean more and have more value if issued under the supervision of the University of California.

Following are the rules and regulations under which the work is proposed to be carried on. Changes may be required from time to time, but they seem to provide the necessary machinery for carrying on the work at the present time.

RULES AND REGULATIONS

1. The work of collecting the records and issuing the certificates to be done by the University of California in cooperation with the various California cow-testing associations, nothing herein saying that other methods may not be also approved.

2. The University of California to have absolute authority in questions as to eligibility of cows, authenticity of records, etc.

3. A fee of $1.00 to be paid upon application for entry of any cow, to cover cost of supervision, forms and certificates.

4. On completion of a ten month record period the University of California will issue a certificate of record of production for cows that have qualified for the record.

Keeping of Records

1. The herd records as compiled by the various cow testing associations are to be accepted as authentic and correct, but the University of California is to be the final judge in all questions arising.

2. Any certificate secured by fraud or misrepresentation to be cancelled if the evidence warrants.

3. The cow tester or owner of cow to send in to University Farm, upon application, a detailed description of the cow, upon blanks to be supplied for this purpose by the University of California.

4. At each monthly test the testor or owner of the cow shall mail to the University Farm a report of the milk production and fat test of the cow for the testing day, on a blank form furnished by the University of California.

5. At the end of a lactation period of ten months a summary is to be sent to the University farm on blanks provided for that purpose, of the production of the cow, which will be compared to the monthly reports already sent in.

Eligibility of Cows

1. Until January 1, 1922, cows may be eligible that are of either grade or "scrub" breeding. After January 1, 1922, only cows that have been sired by a registered pure bred dairy bull will be accepted.

2. To qualify for a certificate, cows with first calf and under three years of age at the time of freshening must produce in ten consecutive months a minimum of 300 pounds of butter fat.

3. Cows with second calf or more must produce a minimum of 350 pounds of butter fat in ten consecutive months.

4. In addition to the fat production, a cow to qualify for the certificate must carry calf at least five months of the ten-month period.

5. Any cow that is known to have tuberculosis will not be able to qualify for a certificate.

6. To be allowed to continue on the test, any cow in normal condition must produce a minimum of 30 pounds of fat, for cows with first calves, and 40 pounds of fat, for older cows, during the first month of the test.

7. The owner of cows to be entered shall agree not to use or dispose of their male offspring for breeding purposes.

Eastern and Western Duroc Herds

By R. K. Walker

I have just returned from a trip to the leading Duroc-Jersey herds of the Middle-West and thought Cultivator readers might be interested to know of conditions there.

My first stop was at W. M. Putman & Sons at Tecumseh, Nebraska. They own the boar, Great Pathfinder, the best son of Pathfinder. This boar is a giant, being 86 inches long from between the eyes to root of tail. He is 42½ inches tall and has full ten inch bone. He is one of the great sow sires the breed has produced. Putmans also own Demonstrator, a great Col.-bred senior yearling. He will be at the National Swine Show. Great Pathfinder is a half brother to my grand champion sow, Cherry Blossom.

John Bader has some great pigs sired by Great Orion Sensation, the boar he sold to Ed Kern. Kern says he will not take $40,000 for this fellow. I believe he is the largest senior yearling in the world and he is one of the best of any age. The Sensation-Orion cross, of which this boar is a representative, is the most popular breeding in the hog belt states today. The Sensations give the size, feet and legs and the Orions add finish and type. Ed Kern owns both Great Sensation and Great Orion Sensation, and they are a wonderful pair. Fifty sows bred to or sired by Great Sensation sold in his fall sale for $102 each. Mr. Lelsey of Wisner, Nebraska, asked me $15,000 for a fall boar sired by Great Orion Sensation. He was the best boar of his age I saw on my trip.

Dan Kane at Wisner, Nebraska, has one of the giants of the breed in Mammoth Sensation, the breed's largest boar for his age.

I was very much pleased with the sows I saw at Hanks & Bishops sired by Pathfinder, in fact Pathfinder sows seemed to have a habit of being outstanding wherever I saw them.

I visited a large number of other breeders and saw some hogs I would like to see on the Pacific Coast. I will say also that I have seen a lot of hogs on the Coast that would look well in the best herds of the Middle West. I think the Pacific Coast herds of Durocs stack up very favorably with those I visited. We of course do not have the numbers of real outstanding animals in any one herd that are to be found in some of the best Eastern herds, but almost every well established herd I know out here has a few that would look well in any company.

It is a safe prediction, that in a few

Kreso Dip No. 1

(STANDARDIZED)

WILL

PROTECT YOUR PROFITS

BY KEEPING

All Livestock and Poultry Healthy

Effective. Uniform. Economical.

Kills Lice, Mites and Fleas.
For Scratches, Wounds, Scab, and Common Skin Troubles.

PREVENTS HOG CHOLERA

Experiments on live hogs prove that a 2 1/2 per cent dilution of Kreso Dip No. 1 will kill virulent hog-cholera virus in 5 minutes by contact.

FREE BOOKLETS.

We will send you a booklet on the treatment of mange, eczema or pitch mange, arthritis, sore mouth, etc.
We will send you a booklet on how to build a hog wallow, which will keep hogs clean and healthy.
We will send you a booklet on how to keep your hogs free from insect parasites and disease.

WRITE FOR THEM.

Animal Industry Department of

PARKE, DAVIS & CO.

DETROIT, MICH.

Rosedale Farms
Hampshire Sheep

We offer for this season:
25 Head Ram Lambs.
50 Head Yearling Ewes.
100 Head of Ewe Lambs.
1 3-year-old Butterfield Ram.
10 Head purebred Rambouillet Rams.

Apply to or address:

D. E. Kelliher Eugene, Cal.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
El Monte, Cal.

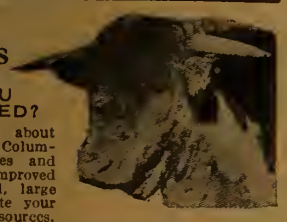
Want Shorthorns That Combine Beef and Milk!

We receive many inquiries for Shorthorns that combine beef and milk. We urge that all who are hand-milking Shorthorn cows join the Milking Shorthorn Cattle Club of America. J. L. Tormey, Secretary, 13 Dexter Park Avenue, Chicago.

Grass-fat Shorthorn steers have topped the Chicago market. In the Record of Merit there are listed 830 Shorthorn cows of all ages whose records average over 8000 pounds of milk annually. Send for literature.

American Shorthorn Breeders' Association
13 Dexter Park Ave., Chicago, Ill.

Cattle Ranges



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In knowing facts about Central British Columbia Cattle Ranges and mixed farming, improved and non-improved, large and small? Write your requirements, resources.

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Phone Main 2335J. Sacramento

DIAMOND G HEREFORDS

are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 4th, one of the best bulls in the West. Correspondence invited and visitors welcome.

H. H. Gable Esparto, Calif.

Beef Cattle Specialist

For 30 years I have been devoting my entire time to pure bred beef cattle. I know the kind of cattle California needs and where and how to buy. I make regular trips to the great producing centers and will buy on order. Best of references. Satisfaction assured. Correspondence invited.

R. M. DUNLAP, Hotel Land, Sacramento, Cal.

years California breeders will be able to carry off the honors at the National Swine Show. We have the climate to grow pigs the year around and the breeders are bringing out better foundation stock from the East every year. I believe our Western breeders are more alive and up to date than the corn belt farmers. The fairs this fall will bring out the improvement that has been made in Western Durocs the last 12 months. I expect to see the greatest Duroc-Jersey shows ever held west of the Rocky Mountains.

SACRAMENTO-YOLO COW TESTING

The Sacramento-Yolo Cow Testing Association has continued its good work. The report for June shows prize won for herd average for the month by A. Krull. The average monthly fat production of this herd was 44.1 pounds, average butter fat test, 6.34; daily production from average cow, 23.2 pounds of milk. Another herd materially increased this total milk production, giving 37.8 pounds of milk, but its average butter fat was only 3.17, or exactly one-half the butter fat test of Mr. Krull's herd. The lowest record for monthly fat was 18 pounds. There were 42 cows that produced over 50 pounds of butter. The highest producing cow was the property of F. W. Kiesel, producing 78 pounds fat.

OLDEST COW TESTING ASSOCIATIONS

Humboldt County has two of the oldest cow testing associations of the state and they have been the cause of the material uplift of the dairy industry of that county. One of these associations has a membership of 1377 cows with an average production of fat in the month of June of 41.65 pounds. The average of the best herd in the association was 52.99 pounds; the average of the lowest herd, 29.40. The best cow in the association produced 87.45 pounds fat and the association had two cows producing over 80 pounds, 11 producing over 70, 79 over 60, 271 over 50.

Another association in the same county has 1390 members. Its average butter fat this year is almost identical with that of the first, 41.62 pounds. The average of its best herd was higher, however, showing 56.70 pounds of fat. The lowest herd produced an average of 33.80. The best cow produced 88.61 pounds. This was the only cow over 80 pounds, but there were 19 producing over 70 pounds, 62 producing over 60 pounds and 180 over 50.

CONTRA COSTA COWS

Statement of the high producing cows of the Contra Costa Cow Testing Association is made by Prof. Woll who is in charge of cow testing associations.

Contra Costa County cows to the number of 15 have had their names inscribed on the honor roll because of having produced 55 pounds of butter fat. The highest producing cow in this county during the month of June was a pure bred Holstein with a record for the month of 70.83 pounds of fat. Her milk production for the month was 2361 pounds. While her percentage of fat was much lower than that of any other cow which secured entrance to the honor roll her enormous production still made her the leader. Other cows on the honor roll belonged to Durroughs Brothers, E. H. Fox, E. Emerson, M. W. Hotchkiss and J. M. Christien.

ALAMEDA COW TESTING ASSOCIATION

Prof. F. W. Woll of the University Farm sends outline as to some of the performances of the cows, members of the Alameda County Cow Testing Association. There are ten cows which gave above 55 pounds butter fat during the month of June. Eight of these were in the dairy of F. Stenzel. The highest producer for the month was in this herd and gave 69.36 pounds of fat. The Koopman dairy has two cows in the honor class. The best of these came close to Mr. Stenzel's record maker, producing 66.08 pounds fat.

Duroc-Jersey Hogs

250——Spring Pigs——250

That have been mated with extreme care and properly raised and fed. The big, tall, rangy, high-backed, big-framed kind that can carry an awful load of pork and walk off with it. We have on our Orland ranch, the sires and dams of the $1100 sow and $1000 boar recently sold at San Jose Sale. WHEN YOU NEED GOOD DUROCS—WRITE US.

F. D. Burr Co.
235 Montgomery St. San Francisco

Greenwood Durocs

It is possible to secure as good but none better.—We not only breed them right but grow them properly. It will be well worth while to write Greenwood Farm for the kind of Duroc-Jerseys you want.

H. C. Witherow, Mgr. Live Oaks, Sutter Co., Calif.

All Good---We Sell

No animal leaves our ranch for breeding purposes unless it is of the correct Duroc-Jersey type and breeding.
That's one reason, and a mighty good reason, for our large business.
Write me just what you want and I will send you full description and price them reasonable.

Allen Thompson Tulare, Calif.

DUROC JERSEYS
IMMEDIATE SHIPMENT
YOUNG BOARS, WEANLINGS
BRED OR UNBRED GILTS
WRITE FOR PRICES
GARDINER RANCH
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Duroc-Jersey Pigs

from both Eastern and Western Registered Sows of Best Blood Lines. Sired by LEADING BOARS

Ranch: Van Nuys, Calif.
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Secure Profitable Berkshires

We say profitable Berkshires because we have thoroughly demonstrated on our farm that our Berkshires are profitable. We have assisted many farmers in starting a herd and they are making money. AMES RIVAL 70TH, the Grand champion of 1918 and five other boars equally as well bred do service in our breeding herd.
JUST NOW we are fortunately situated and can offer you young animals or bred sows and gilts. The price we are asking will afford you a profitable investment. Can furnish one animal or a foundation herd. Write us and we will send you full particulars.

MILLS BERKSHIRE FARM
Hamilton City, Calif.

ANCHORAGE FARM BERKSHIRES ARE PROFITABLE

Future Champions Can Be Secured NOW

by placing your order for a young Berkshire boar from the famous Anchorage Farm herd. Star Leader and several of his sons have been mated with our large type Berkshire sows. Star Leader is famous wherever good Berkshires are known.
One of these young boars will not only add size and vigor but will add the quick maturing qualities demanded by pork producers.
Write immediately for full particulars and breeding and secure your future herd boar. Priced within reason.

Anchorage Farm Orland, Calif.

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

Raise Your Hogs and Cattle at a Profit
Assist Nature by Feeding
Economy Stock Powder

A general conditioner, a worm expeller and a disease preventive.
Send for FREE SAMPLE and our BOOK on LIVE STOCK.

Save Your Hogs
ECONOMY HOG & CATTLE POWDER CO.
Hearst Bldg. San Francisco, Cal.

Long Jumbo and Yate's Big Orphan

have sired some wonderfully fine pigs. Big type Poland-Chinas by these two boars for sale at a reasonable price. Write immediately for full description. Fully guaranteed to satisfy.

R. J. Yates, Orland, Cal.

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Col. Ben A. Rhoades
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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

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Our cards are on the table, ***Besgrade Dairy Food*** is an open book.

When you buy ***Besgrade Dairy Food*** you know just exactly what ***ingredients*** go to make it. You know its analysis and that it is scientifically balanced to produce milk and at the same time maintain the cow's body reserve for heavy milk yield all the year, not for only a short period.

We build our feeds on a scientific basis and are willing to stand by results. What the dairyman wants is the best result per dollar obtainable—***and we guarantee it.***

We have prepared a pamphlet giving the name of every ingredient used in its manufacture, the analysis of it and why you cannot afford to make it yourself. Clip the coupon and mail. A copy of this pamphlet, also a copy of the new feed law, will be mailed to you immediately.

Besgrade Dairy Food not carrying this new tag has been manufactured previous to this date, but analysis is the same as shown on tag or in pamphlet.

GREAT WESTERN MILLING CO.
LOS ANGELES, CALIF.

GREAT WESTERN MILLING CO., Los Angeles, Calif.
Please send me your pamphlet on Besgrade Dairy Food, showing analysis and list of ingredients used, and its advantages in feeding. Also a copy of the new feed law.

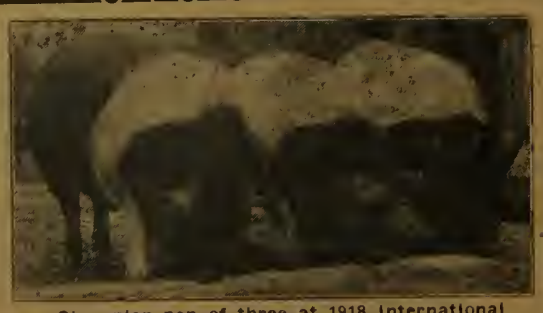
Name .....

Address .....

Dealer's Name .....
C. C. No. 1.

Hampshire

The Popular Hog



Champion pen of three at 1918 International

This hog has become America's most popular hog through the quality of the Hampshire alone.
The 1918 International Livestock Show was his last great record, winning grand championship over all breeds, and selling for $2.25 per hundred more than his nearest competitors.
Free information and literature and sale catalogues by addressing

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Hampshire Record Association
Santa Barbara Route No. 2 California

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Live Stock News Notes

SALE CALENDAR

Shorthorn Cattle

Holstein Cattle

September 18, Henderson Company and Bonita Stock Farm, Stockton.
October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

August 20. Fresno County Poland-China Breeders' Association, Fresno.
September 17, John M. Bernstein and W. L. Haag & Son, Hanford.
September 19. San Joaquin County Poland-China Breeders Association, Stockton.
September 30, Dimmick Brothers and DeRaad, Hanford.
October 4. Marsh & McCracken, Modesto.
October 7, Bassett, Ross and Crawshaw, Hanford.
October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.
October 18, Trewhitt, Vaughan and Nehls, Hanford.
October 21, Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine

August 23, W. M. Carruthers, Live Oak.

Hampshire Swine

August 6, Francis T. Underhill, Santa Barbara.
August 20. W. M. Carruthers, Live Oak.

Duroc-Jersey Swine

August 19, Jersey Queen Farm, San Jose.

T. T. Miller of Hollister has sold the two year old Shorthorn bull, Matchless Elite, to Thornton S. Glide of Davis. Matchless Elite was sired by White Gloster and his dam was Matchless E. He stood second as a junior yearling at the Liberty Fair at Los Angeles last December.

The Adams interests of Oakdale were on the Kansas City market July 22 with 424 head of steers. Two hundred and thirteen, averaging near 1100 pounds, sold for $13.25 and 211 of about the same weight sold for $13.00. On the same day, 40 California raised steers that had been on Kansas grass sold for $15.

The Western Berkshire Congress will hold a donation sale at Sacramento during the state fair. The purpose of the sale is to raise sufficient money to cover the special premiums offered by the association at the California State Fair, the Los Angeles Livestock Show and the California International Livestock Show to be held at San Francisco. Frank B. Anderson, secretary, states that the association will probably offer a total of $750 at the three shows.

It is doubtful if any California hog sale has attracted wider interest than the Francis T. Underhill sale of Hampshires to be held at Santa Barbara Wednesday, August 6. Thomas Dinsmore, who is managing the event, states that he has received word that a number of prominent Eastern breeders plan to attend the sale in company with E. C. Stone, secretary of the association
During the morning of the sale the California Hampshire Breeders' Association will be organized. The meeting will be followed by a big barbecue and the sale will start at 1 o'clock.

Dr. L. J. Belknap, proprietor of the Jersey Queen Farm, San Jose, has claimed Tuesday, August 19 as the date for his sale of Duroc-Jersey hogs and Shropshire sheep. Dr. Belknap held a very successful Duroc sale early last spring.

W. M. Carruthers, Live Oak, has decided to change the date claimed for his public sale of Berkshires from August 20 to August 23. The change was made necessary on account of the arrival of the Pacific Fleet. On the above date Carruthers will offer around 65 head of high class boars, bred sows and gilts.

Professor J. I. Thompson of the animal husbandry department of the University of California has been notified by Secretary Carmichael he has been selected to judge Berkshire swine at the National Swine Show to be held at Des Moines, Iowa, September 29 to October 4. It has been rumored that Thompson will be asked to judge Berkshires at the International Live Stock Exposition to be held in Chicago.

Andy Simpson, herdsman for Edward Cebrian, arrived in Sacramento last week with the three Shorthorn herd bulls purchased in the East by Cebrian. As noted in these columns in a recent issue, Cebrian purchased from Anoka Farms, Waukesha, Wisconsin, the great imported bull, Caledonia at a price that is said to be the highest ever paid by a California breeder for a bull of any breed. He also secured the Canadian bull, Gainford Matchless. Simpson says that he was particularly impressed with the character of calves sired by this bull. The acquisition of two bulls of such recognized merit places the Cebrian herd in a very commanding position and will serve to strengthen the Shorthorn interest of the entire West.

Alex Benjestorf, superintendent of the Hollow Hill Farm, Colton, has recently returned from an extended trip through the East where he went to buy Guernsey cattle. Eighteen head were purchased and include 14 mature cows, one yearling heifer and three heifer calves. One of the mature cows, Lady Rilma, is a half sister to Azucena's Pride 2d, that holds the record in the three year old class with 16,203 pounds of milk and 855.7 pounds of fat in 12 months. Lady Rilma is a daughter of Ledyard Boy. The cows are bred to some of the most noted of the Eastern bulls, including Ne Plus Ultra 4th, half brother to the two bulls sold recently for $25,000 and $14,500. Several of the cows are bred to Pencoyd Secret Premier, a bull that traces nine times the great old cow, May Rose 2d. The Hollow Hill herd is considered one of the top collections of Guernseys in Southern California.

Following their established custom, the Kings County Poland-China Breeders' Association will hold their annual fall consignment sale at Hanford October 11. As usual, the sale will be held in the sales pavilion at the fair grounds and will consist of 80 bred sows and gilts. The association is one of the most active of any of the state livestock organizations. The sale will have the active support of all the members and the following breeders will consign: M. Bassett; J. A. Crawshaw; Wm. Bernstein; John Bernstein; G. I. McCune; G. Nehls; C. L. Newport & Son; H. E. McMahan; T. J. Woodworth; W. L. Haag & Son; R. G. Hamblin; H. McCune; R. Waltz; C. A. Vaughn; W. T. Dice; W. S. Hubbard & Son; C. G. DeRaad; Dimmick Brothers; W. D. Trewitt; E. G. Meyers and F. D. Ross.

H. D. McCune, Lemoore, who breeds Poland-Chinas, will have his show herd at the state fair headed by his senior herd boar, Kings Massive Orange. In the herd will be found an exceptionally good senior boar pig, McCune's Buster, by Giant Buster. His son Earl who will have several entries in the junior and senior pig classes is particularly well pleased with a litter by Surprise Prospect and from a sow that he purchased early in the spring at the Grover Sampson sale in Missouri. Another member of the Mc-

Harvest Beans with a DAVENPORT RIDING BEAN HARVESTER

Our strongly constructed two-row Riding Bean Harvester is the result of many years experience in California bean fields. Blades are 6 inches wide of plow steel, frame very strongly braced. Both lumber and steel are going up. The next lot manufactured will cost more. Buy early.

Davenport Implement Co.
1032 East First St., Los Angeles

ARCADIAN
Sulphate of Ammonia

A ton of ARCADIAN Sulphate of Ammonia carries more plant food than a ton of any other nitrogenous fertilizer.

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼ per cent. Made in U. S. A. Arcadian is the great American Ammoniate.

For sale by all the principal dealers.

For information as to application, write

The Barrett Company
Agricultural Department
510 First National Bank Bldg.
BERKELEY, CALIF.

Cune family, Miss Marie, had two entries in the Lemoore High School pig club sale, one sold for $220 and the other for $100.

Since his sale held last April Wm. Bernstein of Hanford has added a number of very high class Poland-Chinas to his herd. Among the recent arrivals at the ranch is a son of Black Prince, the grand champion at the 1918 National Swine Show, and a sow by the same boar. A fall boar sired by the well known boar Big Ben has been purchased from an Illinois breeder. From R. A. Welch, Red Oak, Oklahoma, came a son of Chief's Defender's Choice, and from N. Hauk, Alton, he secured a young boar and four gilts. Mr. Bernstein is making his selections and laying his plans for a spring sale of strictly big type Polands that he hopes to make the most attractive of his career as a breeder.

W. T. Dice, who two years ago sold his farm and removed to Oregon, returned to Hanford early this spring and again entered the ranks of the Poland-China breeders. He has assembled a herd of about 80 head. In the sale which will be held at Hanford November 11, he will consign four sows of big type breeding. His show herd this fall will consist of senior and junior yearlings and senior pigs and will be seen at the state fair and the shows that follow.

Chas. L. Weaver of Tulare who breeds Milking Shorthorns and Poland-Chinas, recently purchased from Thomas Harrison of Santa Rosa the bull, North Star. North Star was sired by Brandsby's Coming Star, a first prize winner at the English Royal Show of 1910, and first in class at the London Dairy Show in 1911 and afterward sold for $4000 for export to the United States. The dam of the Weaver bull is the $3000 Blossom 23d, imported by the late James J. Hill. North Star will be seen at the head of the show herd at the state fair. Mr. Weaver states that A. D. Severe, a prominent Iowa Poland-China breeder who recently visited this state said that the boar, King Golden Gate by Golden Gate King was one of the best he had seen.

A recent arrival at the farm of Joe N. Chinowth, Visalia, breeder of Duroc-Jerseys, is a sow from the herd of F. O. Lord & Sons, Greentown, Indiana. She is by the noted Colonel Jack and out of a daughter of Jack's King Lady, one of Ira Jackson's foundation sows that is said to be one of the greatest sows the breed has produced. At the recent sale held by the Tulare County Duroc-Jersey Breeders' Association Mr. Chinowth not only made the highest average but topped the sale with Ohio Lady, sold for $300. Herd boars in service at the present time are Lord's Orion Cherry King and Joe's Orion Cherry King 5th.

At a meeting held July 22 the Tulare County Poland-China Breeders' Association made final arrangements for a sale to be held at Tulare October 21. The sale will be the first semi-annual sale of the association and will consist of 50 head, 42 of which will be bred sows and gilts, four open gilts and four boars. The following breeders are expected to consign: R. F. Guerin; Mrs. Z. Loslebin; W. E. Martin; G. B. Martin; Thos. Jacobs & Brother; J. H. Handschilt; John E. Clark; F. E. Fay; J. K. Macomber; Hugh C. Shinn; B. M. Hargis; A. J. Elliott and Chas. L. Weaver.

A daughter of Matador Segis Walker, one of the great Holstein sires at the head of Carnation Stock Farms herd, Seattle, Washington, sold recently at public auction in the East for $12,200. It will be remembered that two choicely bred heifers in calf to this bull were sold in the Guaranty Sale at Sacramento last March. One of them was purchased by Burr Farm, Los Angeles, and the other by H. J. Long, Mason, Nevada. The one owned by Burr Farm is now fresh with a nice heifer calf.

Judge Matador, a few months old son of Matador Hengerveld Bess the $12,200 daughter of Matador Segis Walker, sold for $7000 in an Eastern sale recently. He is sired by the famous Judge Segis, head of the big herd at Hollywod Farm, Hollywood, Washington. A granddaughter of Sir Skylark Ormsby Hengerveld bred to Judge Segis is owned by S. G. Kounias, Modesto.

Some excellent official records have recently been made in the good herd of registered Holsteins owned by Albert E. Smith, Sumas, Washington. Possibly the most remarkable one of them was made by a cow milking out of only two quarters. In seven days she made 31.36 pounds butter from 667.7 pounds milk, and in 30 days made 120.31 pounds butter from 2594.1 pounds milk. She is being continued on yearly test and A. W. Dahlquist, superintendent of Milky-Way Farm, believes that she is capable of making 1000 pounds butter even with her great handicap. Another good cow in the herd, Lady Aaggie Echo Hengerveld, has to her credit 30.5 pounds butter from 607 pounds milk the first seven days on test. There is a beautiful lot of daughters of Chimacum Spring Farm King Pontiac to freshen this summer and fall in Mr. Smith's herd and some good records may be looked for. It will be remembered that a daughter of this sire sold for $2600 in the March sale at Sacramento to Toyon Farm Association, and after freshening as a junior two year old she has made over 23 pounds butter in seven days.

Carnation Pauline Walker, owned by Carnation Stock Farms, Seattle, recently completed official records of 20.42 pounds butter from 445.4 pounds milk in seven days, freshening at the age of two years, one month. She is full sister to Matador Segis Pauline Jennie that made 29.91 pounds butter in seven days as a three year old.

Helena of Sunnyside, a junior two year old daughter of Sir Veeman Korndyke Pontiac, recently completed an official record of 20.32 pounds butter from 408 pounds milk in seven days in the herd of registered Holsteins owned by R. F. Guerin, Visalia. Mr. Guerin's herd is largely composed of daughters of this sire and they are an unusually promising lot. The bull himself is now at the head of Burr Farm herd, Los Angeles, where he is being mated with a large number of good cows.

The members of the Fresno County Poland-China Breeders' Association who are to hold a sale at Fresno, August 20 are looking forward to a splendid crowd. The request for catalogs has been very gratifying and covers a wide territory. Walter C. Ficklin, secretary of the association says that the committee that made the selections are more than pleased with the class of animals they were able to secure. Most of the offering represents such well known sires as Kings Big Bone Leader, grand champion at the 1918 California state fair; President; Jumbo's Equal; the great Bassett boar, Model Fellow and Young Jumbo. Catalogs are being mailed to all who make the request to Walter Ficklin. Col. Geo. W. Bell of Tulare will serve as the auctioneer.

J. H. Crawshaw, who, in conjunction with M. Bassett and Fred Ross will hold a sale of Poland-Chinas at Hanford, October 7, will offer 20 bred sows and gilts by California Gertsdale, a son of the famous $6600 Gertsdale Jones. The dams of these animals represent such popular blood lines as Story's A Wonder, Jumbo Equal, Longfellow Equal and Long Model. The gilts have been carefully grown out and will be bred to farrow at 15 to 16 months of age.

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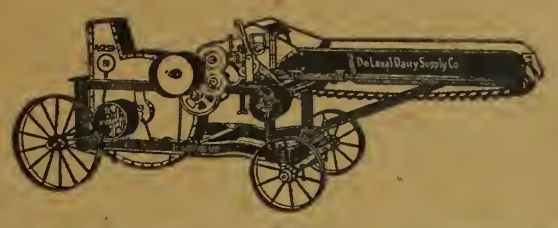

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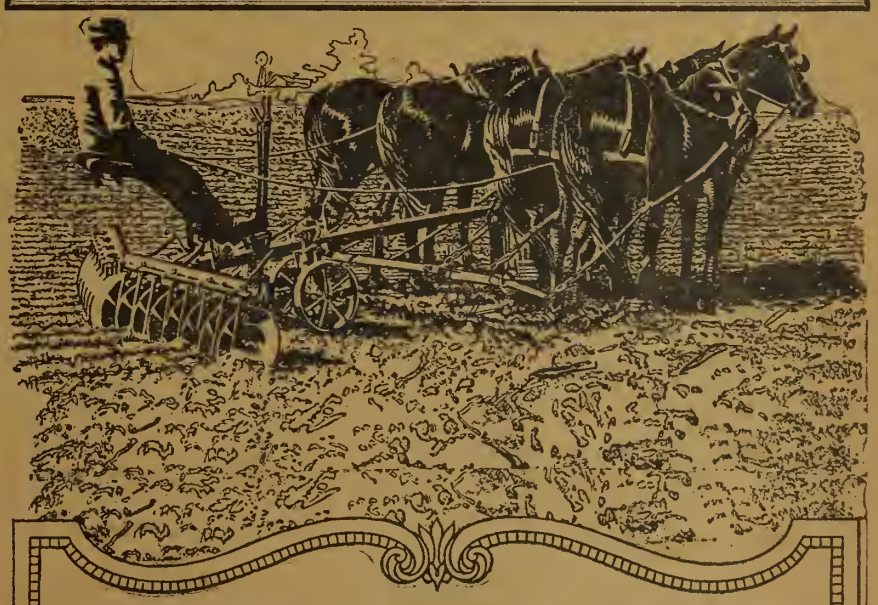

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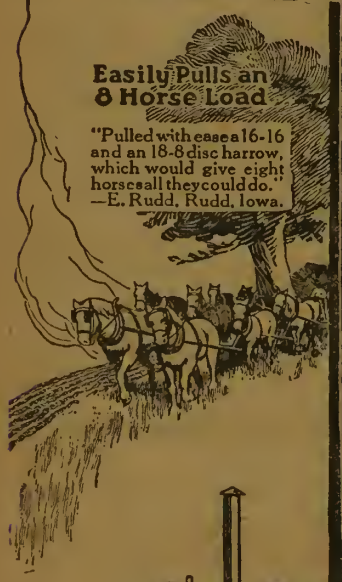
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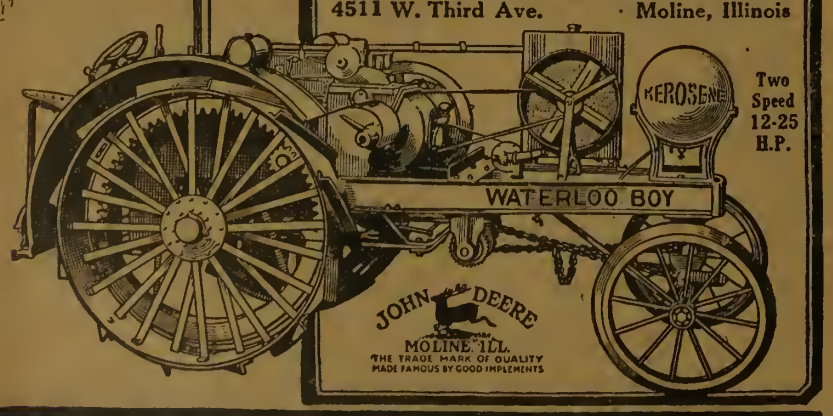

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Dr. H. W. Hand **Orland, Calif.**

The Tulare County Poland-China breeders met in Tulare Tuesday, July 22 to make final arrangements for the holding of their first semi-annual consignment sale which will be held in the new sales pavilion Tulare, October 21.

The committee which was appointed to visit the various herds has selected 50 head from the following breeders: R. F. Guerin, eight; Mrs. Z. Losleben, one; W. E. Martin, ten; G. B. Martin, two; Thos. Jacobs & Brothers, five; J. H. Hauschildt, one; John E Clark Jr., one; F. E. Fay, five; J. K. Macomber, one; Hugh C. Shinn, eight; B. M. Hargis, two; A. J. Elliott, six; Chas. Weaver, one. The animals entered in the sale consist of 42 bred sows, four open gilts and four young boars.

Announcement is made that Senator Benj. F. Rush of Suisuin has purchased the well known white heifer, Lady Ruberta that was reported sold in the Carruthers' sale to a firm at Caldwell, Idaho. The Idaho buyer was not able to make a satisfactory settlement and as soon as Senator Rush learned of the fact he made an offer representing a substantial advance over the sale price and secured her for his own herd. He also purchased privately from Mr. Carruthers the red junior yearling bull, Victor Lad. Victor Lad was sired by the well known bull Maxwalton Rosedale and is out of a Victoria dam.

A. A. Jenkins, Tulare, breeder of Jersey cattle, and whose herd is considered the equal of any on the coast, recently sold to C. R. Sortor, Tulare, a young bull. This is the third bull Mr. Sortor has purchased from the Jenkins herd in the past four or five years. Twenty cows now in milk have returned from the sale of cream alone, an average of practically $25 per head for the past four months.

Poland-China breeders in San Joaquin County have organized the San Joaquin County Poland-China Breeders' Association. Practically every breeder in the county holds a membership. At the initial meeting held at Lodi, J. H. Lehman was elected president, and Sherwood Beckman was elected secretary-treasurer. Plans for a full sale were discussed and it was decided to hold a sale of boars and bred sows and gilts at Stockton on September 19. Col. Ord L. Leachman, who will handle the sale, states that it will be held at the fair grounds adjoining Stockton.

M. C. Allen of the Winsor Ranch, Bonita, is visiting the Jersey herds in the San Joaquin Valley with the view of purchasing a number of high class cows. Mr. Allen visited the Jenkins herd of Tulare and was greatly impressed with the quality and type of Jerseys found there. As the number of animals Mr. Jenkins was willing to let go was limited Mr. Allen is making quite an extensive trip to see if a sufficient number can be secured to establish the size herd he has in view. While in Tulare he attended the sale of Duroc-Jersey swine and was a liberal buyer.

H. H. Gable has been informed by Professor Gordon H. True, who recently judged at the annual Territorial Fair at Honolulu, that two young Hereford bulls purchased last spring from Gable's Diamond Bar herd stood first and second in class. Mr. Gable, who was the first president of the Pacific Coast Hereford Breeders' Association, has one of the leading herds of Herefords owned in this state and he has recently strengthened the herd by purchasing the outstanding bull, Don Perfect 4th. This bull made an enviable reputation in the Griffith herd in Iowa and was brought to California at a long price. He has been given wide service in the Diamond Bar herd the past spring and Hereford men are looking forward to his first crop of calves to be dropped next spring.

C. H. Walker, Kansas City, publisher of the Poland-China Journal, in a letter to Col. Geo. W. Bell, the auctioneer, writes that he is planning an extensive trip through California and hopes to meet every Poland-China breeder in the state. As a large number of public sales will be held during the month of October he has selected that month for his visit.

Geo. A. Stengle of Lark Meadow Ranch has sold a Superbus Masterpiece boar to C. N. Esender, chief dispatcher for the Salt Lake Railroad, who is developing a Berkshire ranch at Moapa, Nevada; also a fine bred gilt of same breeding to Frank M.

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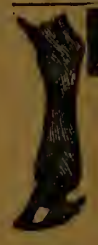

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The Glenn County Shorthorn Cattle Breeders' Association was organized Friday, July 18, at Butte City. This is the first organization of the kind in California and one of the first in the West. Officers were elected as follows: President, W. S. Guilford; first vice-president, Col. D. A. Shelloe; second vice-president, Dr. T. T. Purkitt; third vice-president, Robt. McKee; fourth vice-president, Adolph Loshe; secretary, Ernest V. Eibe; treasurer, P. H. Green, cashier of the Bank of Willows; official veternarian Dr. L. E. Tuttle; inspector general, Chas. H. Glenn. Board of directors: O. L. Raper, chairman; Col. D. A. Shelloe; Dr. T. T. Purkitt; Curry French; Robt. McKee, Adolph Loshe; E. V. Eibe; L. E. Tuttle; Chas. H. Glenn; P. H. Green; W. S. Guilford; A. H. Culver; Henry Compton; Lee Logan; J E. Knight; August Henning Jr.; Chas. L. Lambert Jr.; J. M. Walters; W. P. Dwyer. A committee was appointed to arrange for space at the Glenn County fair at Orland in September and to arrange for the next meeting of the association at that fair —as follows: D. A. Shelloe, chairman, O. L. Raper, Ernest V. Eibe. Another committee to arrange with breeders to make an exhibit at the fair was named as follows: Dr. T. T. Purkitt, chairman; Henry Compton; Chas. Lambert Jr. Colonel Shelloe called attention to the fact that the breeders of Glenn County were under obligations to Butte City Ranch for the establishment of the large herd maintained there and for making it possible to secure stock of the highest quality without sending to the Eastern states for it. He predicted that within five years there would be dozens of herds of from 20 to 200 head of registered Shorthorns in Glenn County.

Walter R. Gatton, manager of swine department of the Diamond Bar Ranch, Spadra, states that they will have a complete show herd of their Duroc-Jerseys at all the leading shows on the coast and may possibly send a few to the National Swine Show, Des Moines, Iowa. Mr. Gatton recently returned from an extensive trip through the East where he purchased 70 sows and a few boars, making his selections from several of the leading Eastern herds. The sows purchased were by such noted boars as Pathfinder, Col. Gano, Orion Cherry King 5th, Creator and Great Wonder I Am. Included in the above shipment is a senior yearling litter mate to Great Orion Sensation and an under year sow by Pathfinder. He also secured Mammoth Sensation 2nd, by Mammoth Sensation, and Top Sensation Jr. by Top Sensation, two boars of the most popular blood lines, both of which will be seen at the shows. Mr. Gatton states that he will hold a public sale of bred sows shortly after the first of the year and will include in the offering some of the best animals on the ranch.

On September 30 at Hanford, Dimmick Brothers and C. H. DeRaad will hold a complete dispersal sale of Poland-Chinas. Dr. DeRaad, having sold his farm, is retiring from the business, while Dimmick Brothers are dissolving a partnership of several years, Oscar Dimmick removing to his farm recently purchased in another county. The entire herd of some 70 animals of DeRaad and Dimmick Brothers will be sold and include herd boars, young boars just ready for service, bred sows and gilts, open gilts and spring pigs It is to be regretted that these men are temporarily at least, retiring from the ranks of Poland-China breeders, as in their herds some of the best blood of big type Poland-Chinas is found.

Les McCracken of Ripon writes that on October 4 he and Hale I. Marsh of Modesto will hold a joint sale of Poland-China bred sows and gilts representing as choice bloodlines as California herds afford. A feature of the sale will be a goodly number of sows and gilts bred to King's Big Bone Leader, grand champion at the 1918 state fair. This boar is now owned by Mr. McCracken. The sale will be held at Modesto.

John A. Bunting, secretary of the Pacific Coast Hereford Breeders' Association, states that the association will hold a meeting at Sacramento during the week of the state fair, at which time plans will be completed for the sale to be held at San Francisco during the live stock show. Bunting states that the prospects are excellent for a big exhibit of Herefords at the fall shows.

R. M. Dunlap of Sacramento, one of the veteran cattlemen of this state, has just returned from an extended trip through the principal cattle sections of the Middle West. While East Dunlap selected over 100 head of registered Shorthorn and Herford bulls to be delivered early in November to California ranchers. Dunlap has made two trips East since the first of the year and expects to make at least three more during the next six months. He says that he has never known such widespread interest in better bulls as is being manifested by ranchers of this state.

Malcom H. Gardner, superintendent of Advanced Registry for the Holstein-Friesian Association, advises that the cow, Creampot Pontiac Korndyke has broken the record for fat production in the seven-day division by producing in seven consecutive days 795.9 pounds milk containing 40.561 pounds fat, with test still in progress on June 30. Computed on the 80 per cent basis, the production credited to Creampot Pontiac Korndyke to date is equivalent to—50.70 pounds butter. Her sire is Cedardale Pontiac Korndyke and her dam in Genesta De Kol Creampot.

J. Francis O'Connor, Santa Rosa, proprietor of the Castleview herd of Berkshires, recently sold to Jenkins Bros., of Indiana the sow Grand Lady Mayhews 4th. The sow was bred by A. B. Humphrey of Escalon and after winning the grand championship at the 1916 California State Fair was purchased at public auction by A. W. Foster for $600. She afterwards passed into the ownership of O'Connor. The deal was consummated by L. E. Frost, of the Berkshire World, during his recent visit to this state.

Owners of stock brands in Arizona, according to a law passed by the last legislature, are required to re-register them. The Secretary of the Livestock Sanitary Board, Ed. Stephens, states that the applications already received show "sufficient discrepancies to make the ownership of some brands a matter of doubt had it ever come to a court test. There are cases where a man's entire herd could have been taken away from him because he was innocently using a brand that legally belonged to some one else. Such matters as these will all be straightened out by the re-registration, and possibilities of future disputes obviated."

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R. L. English of Pasadena and Chino has recently purchased ten bred Hereford heifers from W. D. Johnson & Son, Kansas City, Missouri. Mr. English has been a very prominent exhibitor of saddle and show horses at Pacific Coast shows, and he plans to build one of the leading Hereford herds of the West.

John I. Cazier, Wells, Nevada, president of the Pacific Coast Hereford Breeders' Association, writes that he expects to show at the forthcoming state fair. Western Hereford men are hoping that they will have an opportunity to see Beau Blanchard 76th, the young bull purchased last spring by the Caziers for $10,000. This bull is the highest priced Hereford bull owned in Nevada or California and is regarded as one of the best sons of the noted Engle bull, Beau Blanchard. The Nevada Hereford Ranch, owned by the Cazier family, represents one of the leading herds of the West. Besides the above mentioned bull, they own Harris Standard 2d, a son of Standard and out of Disturber's Lassie, dam of the $35,000 Repeater's Model. They also own Debonair 64th and Nevada Lad 8th, both proven sires of the first order. Over 250 head of registered females are maintained. Cazier states that there is an encouraging development of interest on the part of range men for better bulls and that the quality of bulls demanded insures the future for many new breeding herds. They have recently sold to the Dumphrey Estate of Battle Mountain a carload of young bulls.

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We have 30 of his daughters in our herd, seven are on official test. At the average age of two years and two months, three of his daughters average better than 21 pounds. As a sire he is proving his ability to breed true to the best Holstein type.

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With two such remarkable sires together with our wonderful producing cows, you should have no difficulty in deciding where to purchase your next bull.

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FARM LANDS FOR SALE

For Sale: 58 Acres — Highly improved farm—½ mile from city limits of San Bernardino, California. Land partly drained with tile; part in alfalfa, part in corn and other crops. Small orchard of about 75 trees; apples, peaches, plums, prunes, apricots, pears, almonds, walnuts, figs and grapes—also small fruit. Nearly new 2-story 9-room house in best condition, bath and electric light, water in house. Good horse barn, hay barn, cow barn, milk house, hog house, chicken house and garage. Buildings electric lighted, water at buildings for stock. One metal 100 ton silo, ensilage cutter—6 head horses—32 Holstein cattle consisting of one registered bull, one registered cow and her heifer calf, 2 registered heifers bred, 16 grade cows, 3 yearlings and 10 calves. Hogs and chickens. For information address R. F. D. 2, Box 73, San Bernardino, California.

For Sale: 400 Acre Grain and Stock Ranch, 3 miles from R. R. station, Mariposa County, California. 100 acres cleared and tillable, balance fine pasture land; rolling to hilly; large oak and pine trees; buildings and fences—hog tight, family orchard. Average rainfall 29.80 inches, elevation 1500, plenty spring water the year round. No alkali or hard pan, fine for fruit of all kinds, good roads, ½ mile to school. Free outside range adjoining. Price $30.00 per acre including farm implements, horses and household goods. One-fourth cash and balance 6 years, 7 per cent. Will take property in trade not exceeding $2500. Some cattle on the ranch can be bought for cash. OWNER: A. F. Zurilgen, Greenfield Dairy, Chowchilla, California.

1465 Acres—750 of which is farming land and if properly farmed will produce from 7 to 10 thousand bags of grain; balance of land pasture and timber land all feneed in three fields, with 4 barbed wires and redwood posts. Good 6-room house (new), large barn and ten thousand gallon steel galvanized tank and windmill—water soft and quantities of it, which is piped into each field, with stock troughs. Some years there are tons of acorns on this place. Several other stock and grain ranches ranging in size from 40 to 7000 acres. Write me your requirements and I will fix you up. C. P. Gould, 334 East Ocean Ave., Long Beach, California.

159 ACRE CENTRAL WEST FARM
$7900, ONE OF THE BEST
Producers in the county, near depot, short drive city of 25,000. 100 acres record crop, tillage, 50 head woven wire fenced pasture, wood and timber to nearly pay for farm, variety fruit. Good 8-room house, 3 barns, granary, 2 corn houses. Aged owner made money here, retiring, names low quick sale price $7900, easy terms. Details page 89, Catalog Bargains 19 States, copy free. STROUT FARM AGENCY, 831 A. G., N. Y. Life Bldg., Kansas City.

CITRUS LAND FOR SALE
You can buy citrus orchards at Escondido as well located, as productive, for one-half to two-thirds you must pay elsewhere. Why pay more? Walnut land at $200 per acre. All kinds of properties for sale. Bargains in three citrus fruit orchards. You must see to appreciate. Also a 26 acre tract I have for sale. MOTTO: ALWAYS FOR LESS. Escondido Valley is the famous Sun Kist Vale. Theron J. Smith, Real Estate, Escondido, California.

For Sale—11 acres improved land in the beautiful Santa Clara Valley; 4 acres within the city limits of Mountain View; 1 acre to family orchard; 2 electric pumping plants, 5-room house, with modern improvements; $3500 income off of 6 acres last year. Easy terms. Good reasons for selling. Address D. R. SPERRY, 386 Mountain View Avenue, Mountain View, California.

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For Sale—Relinquishment on 320 acres in San Bernardino County: Includes pumphouse, 18 H. P. engine and derriek. Domestic water at 35 feet. Will sell or trade for cost of improvements. E. N. Warr, 1032 East First Street, Los Angeles. Phone 12728.

Mountain Ranch 300 Acres with sawmill, also free water for power and irrigation. Buildings, machinery, horses, cattle, hogs, chiekens, all crops, fruit, furniture goes at a bargain. I am going East. Write to A. Sirotka, Fern, Shasta County, California.

1280 Acres—300 of which is good farming land, balance good pasture, with some oak and pine timber on it. Good 10-room house (new), two barns, hog houses, chicken houses, corrals, windmill and tank; also engine to pump water when mill don't run; quantities of water, dairy house with separator, family orchard, quantities of wood. Household furniture, implements and tools, 12 horses, harness, 12 cows, 15 head of young cattle, hogs, chickens—in fact, everything on the ranch goes with it. All fenced and cross-fenced. A ranch where you can step right in and begin to make money if you will work. Several other stock and grain ranches ranging in size from 40 to 7000 acres. Write me your requirements and I will fix you up. C. P. Gould, 334 East Ocean Ave., Long Beach, California.

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EXECUTOR'S SALE OF REAL PROPERTY—LANDS MUST BE SOLD AT ONCE TO CLOSE ESTATE
These lands include 1100 acres of farm land at Vallejo; 900 acres in one tract; front on the Napa River on the west and electric railway and state highway pass this tract on the east; also includes best business lot in the city of Vallejo, Harbin Springs in Lake County, and other desirable farm and city property. Executors are required by the will to sell all of this property and will meet interested parties at Vallejo or send full information on request.
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Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

160 Acres Unimproved rich farm land for sale in Yolo County. $50 per acre. Three miles from town. A. L. Friel, College City, Box 31, Colusa County, California.

For Sale. Big Snap—5.80 acres of good land, 12 in. flowing well, good crop, $4000. Terms. Paul McKaughan, Hueneme, California.

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50 windmills. 100 tanks.
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Standard and casing gates.
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Remember new machinery you buy will soon be like these but not necessarily worn out. Every article guaranteed to do same work as new or money back. Liberty Bonds accepted face value, also buy. Office DEMMITT CO., upstairs, 120 N. Main. Yards, 816 Yale, Los Angeles.

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600 Acres Summer Fallow.
Inquire: Langenbeck & Sharp, Pleyto, Monterey Co., California.

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BUTTE CITY RANCH
SHORTHORN CATTLE, SHROPSHIRE SHEEP, BERKSHIRE HOGS, SHETLAND PONIES. Stock for sale at all times. Second Farm Sale—all breeds—August 2, 1919. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

For Sale: Registered Holstein Bull, 2½ years from 24 pound dam, sire's dam 30 pound butter. Heifer three years old milking; two heifers 23-26 months, to freshen September 1st. Heifer calf 6 months, not from above bull. All choice breeding. A good foundation herd. D. C. Stanion, Box 18, Kerman, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show Herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

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Ayrshires — Quality Bulls at farmers' prices. Redwoods Ayrshire Farm, La Honda.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

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Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

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Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

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BRED SOWS GILTS BOARS
In order to reduce our herd and to make room for young stuff we find it necessary to offer for immediate sale a choice lot of Poland-China sows, gilts, and boars. The offering represents as good blood lines as we could buy and has been nicely grown out. All are cholera immune. Prospective buyers should not overlook this opportunity. You will be surprised at the extremely reasonable prices we are quoting. Scrub hogs are not profitable. Our registered hogs are money makers. Write now for prices. Act quick. These hogs must be sold. AMERICAN HOG CO., 920-922 CROCKER BLDG., SAN FRANCISCO.

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We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

TWO SOWS AND A BOAR
$100 the trio.
Two sow pigs from ten raised, sired by Baron Duke 201st, 780-pound $1100 Grand National Champion, from Rival B. Princess, a prize winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion Boar from Symboleer Belle, and of Superbus blood lines; a boar from a litter of ten raised, big, long typy, stretchy pigs. Sandercock Land Co., in charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, California.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

Billiken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

For Sale—Registered Duroc-Jersey pigs, McKee Bros., Pilot Defender blood, owned by C. T. Thompson, Bishop, farrowed April 3rd, 1919. Very fine. For particulars and breeding, write: W. E. Detrick, Bishop, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Pathfinder and King's Col. Stock, immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Have Sold All the Pigs advertised recently. Will have fine pigs from spring litters for sale in June. Fine Shropshire ram lambs, pure bred, for sale. J. J. Prendergast, Redlands, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724, Sacramento, California.

Duroc-Jersey Swine and Sheep Sale, see ad on page 123. Jersey Queen Farm, San Jose, California.

HOGS

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

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Fall Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock. Price during August: 25, $4.00; 50, $8.00; 100, $14.00. Price during September: 25, $4.50; 50, $8.50; 100, $15.00. Special prices 500 and 1000 lots. Safe delivery guaranteed; you pay only for chicks received alive and in good condition; no money in advance, pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

White Leghorns are the most profitable breed of poultry. If you are in the business for profit you will eventually have them. Early broilers; early payers; early PROFITS. We sell only WHITE LEGHORN BABY CHIX from heavy laying HOGAINZED hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

It's like groping in the dark to attempt raising poultry successfully without some knowledge of the business. Poultry for Profit tells you how to house, feed and raise chickens, ducks and turkeys successfully in California. It contains 225 pages with 18 pages of illustrations and bound in cloth $1.00 postpaid. Cultivator Publishing Co., 115 N. Broadway, Los Angeles, California.

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
It's our business to improve egg production for you. We have the stock planned for your success. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trapnested S. C. White Leghorns every day in the year since 1912. Box B 337, Inglewood, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Baby Chicks From My Thoroughbred, heavy-laying strain of S. C. White Leghorns. Am booking orders now for July delivery at $12.00 per 100, $110.00 per 1000. Prices for August and September delivery on application. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Baby Chicks—Our large, bred to lay S. C. White Leghorn hens will produce the pullets that will bring in the dollars this winter. Tupman Poultry Farm, Ceres, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

For Sale: Silver Campine Cockerels, also eggs for setting. Roy Ward, Lindsay, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Wanted—Pullets, any kind and age. Pay 40 cents pound. Pioneer Hatchery, 320 South Spring Street, Los Angeles.

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There are Advantages in Borrowing Money secured by real estate from a strong reliable and well managed company of long standing, organized to transact a mortgage business exclusively. You can deal direct with this company and no commission or brokerage is charged. Money is loaned at lowest current rates and you can keep it as long as wanted, provided the security remains good. You are under no obligations in borrowing here, as we always have money of our own to loan and are constantly seeking new and acceptable acquaintances. Borrowers are assured here of that security, safety and protection under all circumstances that only a well-established company of large capital and surplus can offer. Loans are made from 3 to 5 years on ranches, orchards, business blocks, residences, etc. We would be pleased to have you call or write you needs. MORTGAGE GUARANTEE COMPANY, Mortgage Guarantee Bldg 626 So. Spring St., Los Angeles. Tel 10707. Fresno office, Room 20, First National Bank Bldg.

Borrow Money While Available. Loans Made 5 and 10 Years. Interest only 6 to 6½ per cent. Repay all or part at any time. Will loan to build house, put down well, make fence. Repay present loan, etc. Write today for quick action. James Brown, 423 Hollingsworth Bldg., Los Angeles.

DUCKS

Mammoth Pekin Ducks, extra fine for breeders, 2 to 4 months old, $1.25 and $2.00 each. August Surtman, Merced.

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Paradise Strain of White King Pigeons. Young unmated birds $2.00 a pair; old mated birds $3.00 a pair. Paradise Valley Poultry Ranch, National City, California.

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Look, Tobacco—Homespun, chewing or smoking, mild or strong. Lb. 50c; 10 lbs. $4.50 postpaid. One order will convince what real tobacco is. Write for particulars. RANDOLPH TOBACCO FARM, PADUCAH, KENTUCKY.

Made of Redwood, Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

If You Want to sell or exchange your property write me. John J. Black, 116 St., Chippewa Falls, Wisconsin.

War Pictures, best ever brought over. Postpaid each 25c, set of 10 for $2.00. Cash Nurseries, Sebastopol, California.

Good Work Horse For Sale, also potato digger CHEAP. 7710 Towne Avenue, South 6605-J, Los Angeles.

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Wanted—Salesmen and Agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1.00. W. Porter Barnes, Santa Rosa, California. Dept. A-11.

Agents Wanted — Sell Automobile Tires and tubes on liberal commission. Address Arnott & Co., Dept. 10, Los Angeles.

Wanted to Hear From Owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Feeder Hogs Wanted. R. B. & N. Ranch, Waukena, Tulare Co., California

SEEDS AND PLANTS

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Box 501, Fowler, California. Write for circular, prices on seed and plants, Sudan, Dwarf Milo Maize, Honey Sorghum, Amber Cane.

Seed Potatoes for August planting: True White Rose, British Queen and Earliest of All. Stock limited, order early. H. A. Hyde, Watsonville, California.

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

RABBITS

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

FERTILIZER

EARL A. HOLCOMB
SOIL LIFE
Fertilizer and materials mixed to balance every soil. Bureau of testing and advice free on all horticultural and agricultural subjects. 1022 Washington Bldg., Los Angeles. Phone 62907; res. 16116.

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101. Watsonville.

MULES

For Sale at a Greatly Reduced Price—I am closing out my breeding business and will sell the following almost at your own price—must be sold soon. One registered Jack, a good one. Sixteen good brood mares, all bred. Eight head of two year old colts. Seven suckling mules. All well bred animals. Chas. Hubbard, Box 96, Riverdale, California.

ENGINES

For Sale—20 Horse Gasoline Engine (Olds), perfect condition, with belt and pump; cheap for cash. H. M. King, Anaheim.

JACKS AND JENNETS

For Sale or will exchange for land fine bunch black registered Jacks and Jennets. No better bunch to be found in California. A. L. Allen, Perris, California.

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BEST OF BUSINESS TRAINING
Munson School
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Private Secretaries.
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AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
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The Yellow Front. Established 1892
112-118 S. Los Angeles St. Los Angeles.

DOGS

Collie Dogs For Herding, cattle, sheep and turkeys. John G. Mee, breeder of Bronze turkeys and Embden geese. St. Helena, California.

GOATS

61 Head of Angora Goats for sale. K. J. Easby, Jr., Merced, California.

Shall We Set Hens in August?

By Jean A. Koethen

IF not, why not, and if so, why?

My attention was called to the advantages of August as a setting month and of September as a hatching month some years ago, when Rev. Edgar Warren, associate editor of the American Poultry Advocate, declared that August is, next to April, the best hatching month in the year. Had he lived in California, he would have said February instead of April, but if Eastern reasons for setting hens in August are good, California reasons are better. Acting on Mr Warren's suggestion, I began setting hens in August, found that he spoke the truth, and have continued to set hens in August ever since.

Before we decide to set hens in any month, we must be sure that we want or need chicks. If every chick that is to be hatched on general farm or specialty plant, could be hatched in January and February, a great deal would be gained. Hatching chicks is trying and expensive business, and the nearer we can come to raising all our young stock in one flock the better off we are. There is no argument for fall hatching except the one of expediency. Sometimes it happens that for lack of sitters or of brooding equipment we are not able to finish up our hatching in early spring. Sometimes hatches are unexpectedly poor, or misfortune overtakes the half-grown chicks. Sometimes a beginner is unable to begin in the spring, but can make a start in the fall. Sometimes hatching is delayed in the spring and we must choose between raising chicks in June and July or waiting till early fall.

Under any or all of these conditions, the beginner or sideline or farm woman, being fully persuaded that some chicks should be hatched between April and December, is justified in asking the question which appears at the top of the page, and the answer is an unqualified affirmative. By all means set hens in August if you need more spring layers, or roasters for late winter or fryers for Christmas. Not many hens, unless you wish to set them for their own sake, or can set them all about the same time, for looking after a lot of small broods through the chilly or rainy days of late fall is weariness to the flesh, but as many as you can care for comfortably. It would be a good thing if every hen that goes broody in August could be set, for the sitter molts easily and gets her new feathers quickly. She rests and incubates and does her fall dressmaking all at the same time. What a fortunate combination of circumstances, and how economical for all concerned!

But why August instead of September? Because, for one reason, there are more broodies in August. For another, because hens that are set in August hatch in September, when the weather is hot and the chicks that come out then find a world just fitted to their needs. October, in most seasons, is also a good month for chicks, but there comes now and then an October like that of 1916, when chilly rains began the first of the month and continued till Thanksgiving. In such a year the chicks that must be raised out of doors, either by a hen or in a fireless brooder, have a hard time. If we had reason to expect a wet October, it would be better not to hatch in September, but such is not our expectation, and the September chick has ordinarily a very easy life. Warm mornings, warm nights, long days that can be spent out of doors, few insect pests, for mites do not breed in the fall as they do in spring, and later in the fall an abundance of green feed from fall gardens and wayside weeds—such favorable environment makes the care of September chicks extremely easy. By the time cold winds and chilly rains come they are ready for the laying house or colony coop.

One great advantage of fall hatching, and this applies to September as well as to August, is that by that time the slackers and hens of doubtful vigor have stopped laying, and you breed, without any special effort at culling or selection, from the best. The hens that are laying good-sized, fertile eggs in August are the best hens on the place. Hatch their eggs and you are sure of bred-to-lay pullets, provided, of course, that the male is the son of a high producer.

Another advantage is that in August you are sure of your broodies. For those who must depend on hens, this is no small consideration. In January broodies are scarce. It is often impossible to get out February chicks because there are no broodies in January. Hatch in September, and you get pullets that will begin to lay in March and will lay steadily through the summer. Other things being equal, we would all rather hatch in February, but as between fall and late spring, fall is greatly to be preferred.

The difficulty experienced by many poultry people in securing a sufficient supply of green feed for their chicks during the long, dry summer months is gradually bringing us to the conclusion that in this climate chicks should, as far as possible, be gotten out of the shell between the first of September and the first of March, and more and more hatcheries are opening in the fall, not for their whole output, but to supply the increasing demand for fall chicks. The farm woman, who must depend on hens for her hatching would do well to do a large part of it in the fall, rather than trust to the belated broodiness of hens that have molted late. The fall pullet is not quite as profitable, perhaps, as the spring pullet, for she lays smaller eggs in the beginning, but she is a consistent summer layer. The fall hatched cockerel is more profitable for market than the spring cockered, for he goes onto the market as fryer or soft roaster just when prices are highest.

The fall cockered is not as valuable as a breeder, for he will reach ten months, the age at which cockerels are usually mated, in July. If he can be used in the breeding pen in the fall, that is, from August on, he will be just the right age for mating. If pens are not mated till January three of the best months of his first breeding year are lost. Cockerels that are intended for exhibition should not be hatched before January.

Poultry Queries--- Conducted by Jean A. Koethen

Worms Remedy

Please give remedy for round worms in chickens?—Subscriber.

A teaspoon of turpentine followed by a tablespoon of olive oil is a standard treatment for round worms, but a remedy more easily given and just as effective is that recommended by Dr. Beach of the California experiment station. This consists of tobacco dust or powder mixed into the dry mash in the proportion of one pound of tobacco to 50 pounds of mash. This may be left before both hens and chicks till all signs of worms have disappeared.—J. A. K.

Swell-head

My turkeys have been doing well until lately when some show a swelling under the eyes and running at nose. What can be done for them?—Subscriber, Owensmouth.

Your turkeys have swell-head, a form of roup. In many cases these swellings disappear in a few days or weeks. In others they develop into abscesses which must be opened and cleansed with antiseptics. Dr. Kaupp advises washing the nasal passage with a 20 per cent solution of common baking soda, using a medicine dropper or small syringe, as the catarrhal material must be forced through the nasal passage into the mouth. Follow this with an injection of peroxide of hydrogen. The soda dissolves and removes the mucus, and the peroxide cleans out the cavity. After the swelling under the eyes has been opened, cleanse it in the same way. Then inject into both places the following mixture: Oil of thyme, 30 drops; oil of eucalyptus, 20 drops; menthol, ten grains; oil of petrol, two ounces. In aggravated cases this treatment may be repeated three times a day. Give an abundance of clean water and soft, easily digested food.—J. A. K.

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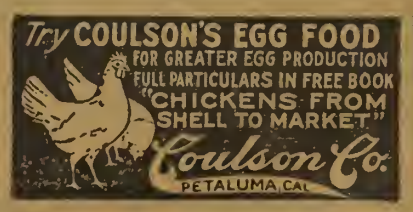

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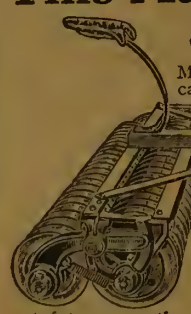

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Household Department

PRESERVING-TIME

All over the land there's a savory smell,
You meet it abroad or at home;
The days of your childhood come back for a spell,
No matter how far you may roam—
'Tis the scent of preserving the strawberry red,
The pineapple, raspberry, plum,
That the gooseberry, currant and cherry must shed
When the jelly and marmalade come

For the kitchen's a sight in these summery days,
As the kettles all simmer or steam;
The mountains of sugar we view with amaze,
And the fruits are an epicure's dream;
Abroad through the land goes the savory scent
Made by nieces of good Uncle Sam;
And prosperity's balm with th' odor is blent
Of marmalade, jelly and jam.—Anonymous.

SAMMY SAUSAGE'S DISCOVERY

"I NEVER knew before," said Sammy Sausage, "that children had so much sense."

"Do you know that now?" asked Brother Bacon.

"I do," said Sammy Sausage, twisting his tail and squealing delightedly.

"They're really quite nice and sensible," he continued.

"I'm sure they'd be pleased if they knew you thought that of them, Master Sausage," said Miss Ham.

"Now don't be sarcastic and rude," said Grandfather Porky. "You don't like it when some oue discovers something without your help, you know."

"That's not so, at all," said Miss Ham. "Some one else discovered this country, and still another discovered this farm and yet another discovered this pen—and I suppose my mother discovered me. None of those things annoy me in the least. They were all before my time."

"Then you will admit that you don't like to have anything discovered in these days that you don't have something to do with, eh?" asked Grandfather Porky.

"Oh, not altogether, and perhaps not at all," said Miss Ham grunting in a rather bored fashion, for she knew she was getting the worst of the argument.

"Go on with your speech," said Grandfather Porky to Sammy Sausage. "We all want to know what makes you say that you think children have so much sense."

"I didn't say I thought it, I said I knew it," squealed Sammy Sausage.

"Well, what makes you know it?" asked Pinky Pig.

"That's the sort of question to ask," said Sammy Sausage, turning his head and gazing at Pinky out of his watery pink eyes.

"I'm glad you can ask the right sort of questions," he said as he tried to smile with his very ugly snout.

"Go on and tell us," urged Brother Bacon.

"I will do so," grunted Sammy, "but first I must have a little nourishment."

"Ah, he's a pig all right. He must have food. Thinks of nothing but his fat little tummy. Ah, he's a pig," grunted Miss Ham.

"You hate to eat, too, don't you, Hammy dear?" asked Sammy Sausage.

"Nothing to do with my appetite," said Miss Ham. "I was talking of yours."

"Oh, to be sure, to be sure," said Sammy. "Now where is the small morsel of food? Or will it be a big one? I have been kept waiting and my appetite has increased.

At the mention of food all the pigs had picked up some goodies for themselves but had not given any to Sammy. Of course he was not surprised and he grabbed for some good bits himself.

"I feel better now," he said.

"Continue with your story," said Pinky Pig.

"Begin it," said Grandfather Porky. "He can't continue when he hasn't yet begun."

"All right, only hurry," said Brother Bacon. "It will soon be time for supper."

"Children like mud," said Sammy. "They make mud pies. They actually enjoy it. Now haven't they sense?"

"They have, they have," squealed all the pigs. "The children like mud like their dear piggies."

"Perhaps they would like to be like us," said Miss Ham.

"They wouldn't show sense if they didn't," said Sammy, "and I am sure they must, for I have seen so many making mud pies lately that I have come to the great and final conclusion that children are sensible. They like mud!"

"And a great discovery," said all the pigs.

"Ah, trust your little Sammy to find out what goes on in the great world," said Sammy Sausage, squealing with pleasure, for all the pigs were smiling upon him.

"And I know something else, too," said Sammy.

"He knows something else," squealed all the pigs.

"They like to eat! I heard them say so! They were talking about their next meal when they were making mud pies! Yes, they were talking of goodies to eat."

"The bright little things," said Grandfather Porky.

"They weren't so little," said Sammy.

"The bright big things then," said Porky.

"Ah, it must be a pleasure for children to be so like pigs," said Sammy and as all the creatures around were pigs they didn't know that children would not have been flattered by such a silly remark!—Exchange.

HELPS IN WASHING CLOTHES

Continuing the practical helps for housekeepers given in the past two issues of the Cultivator, we give this week laundry helps. These also are from the Oregon agricultural college bulletin by Ruth McNary Smith.

In laundering clothes, a process should be chosen that will remove stains and soil with the least possible injury to the fabrics. For the best results it is important to use the best soap, bluing and starch.

Soap

The yellow savon soaps contain a great deal of rosin and free lye and are injurious to fabrics as well as the hands. It is really an economy to buy the white laundry soaps and if some additional aid seems necessary, a little washing soda may be used. A soap solution made by dissolving one bar in one gallon of water is a convenient and economical way of using soap.

Soap Powders

Soap powders are composed of cheap yellow soap finely pulverized, washing soda, soda ash, etc. They are too strongly alkaline to be used safely as a regular thing on cotton and linen and will yellow wool and silk.

Bluing

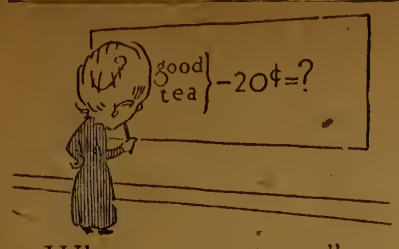
Analine bluing is the cheapest and most effective bluing on the market, as it has none of the bad qualities of the other bluings. It may be purchased by the ounce or pound from any laundry supply house. One ounce in powdered form makes a gallon of liquid bluing which is enough to last for many years.

Most liquid bluings are composed of coal tar dye dissolved in water, with Prussian blue frequently added Powdered bluings are almost invariably Prussian blue, which being an iron compound is likely to cause rust spots or a general yellow tinge if the clothes are not very thoroughly rinsed. A good grade of ball bluing, if used in a bag of at least two thicknesses, is very satisfactory. The cheaper grades are not an economy as they are aduiterated.

Starch

Flour starch is cheaper than package starch; it makes the garment more pliable and is less lustrous. In selectiug package starch it is well to get that with small crystalline sticks, rather than in large irregular lumps, as the latter usually contain impurities, making straiuing necessary. The following proportions are for starch of medium stiffness made from package starch:

One and one-half tablespoons starch mixed with a little cold water, one and one-quarter teaspoons lard or paraffin, one teaspoon borax, one



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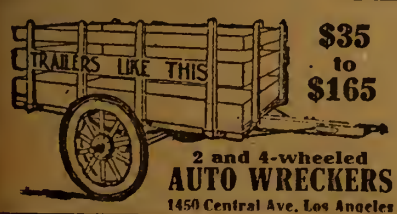

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quart boiling water. Mix the starch and cold water, add lard and borax and boiling water, cooking thoroughly in a closed utensil to present scum.

Javelle Water

Occasionally a bleach of some sort is needed to remove stains and Javelle water is perhaps the safest. However, it should not be used regularly and should be made very dilute. Following its use rinse the fabric thoroughly and dip in water containing ammonia.

One pound washing soda, one quart boiling water, one-half pound chloride lime, two quarts cold water. Dissolve the soda in the boiling water in an enamel pan, the chloride of lime in the cold water. Pour the liquid off the latter, after it has settled, on to the soda. Bottle tightly and keep in a dark place.

Stains should always be attended to before laundering. If soap and water will not remove them there is danger of setting. The longer a stain stands the more difficult it is to remove. Avoid using strong alkalis on silk and wool, as they are softened and yellowed by these.

Acids, except those made very dilute, should never be used on cotton and linen without carefully neutralizing afterwards with ammonia, washing soda, or borax water. Javelle water will remove many difficult stains, but should be used carefully and never on wool or silk. Removing stains on fabrics not easily washed as silk and wool should be done without the use of water if possible, that is by means of absorbent processes. For greasy stains of any kind volatile cleaning materials like gasoline and turpentine should be used.

Directions for treating some of the more common stains will be given next week.

HOUSEHOLD QUERIES

Dill Pickles

Please give again in the Cultivator a recipe for dill pickles, published about this time last year. I have lost mine?—Subscriber, Los Angeles.

Use knife to cut cucumbers from the vine so as to leave a short stem. Do not rub off the little briers. Cucumbers three to four inches long are a good size for dill pickles. Put layer of grape leaves on bottom of stone jar, then a layer of dill, then a layer of cucumbers, repeating grape leaves, dill, cucumbers till jar is full. Cover top with grape leaves. Make brine of six quarts water to three-fourths pound salt (enough for 100 ordinary sized cucumbers). Boil. After cooling pour over cucumbers, with the addition of seven cups vinegar if wished. Place cloth over pickles, over this a board or plate that will fit down on the pickles. Weight this down so that all cucumbers are forced beneath the brine. Leave in dry cool place ten days, then pour off brine, wash pickles carefully and cover again with cold, freshly boiled brine (or brine and vinegar) as before. The pickles are ready for use in about 30 days. About two pounds of dill is required for four gallons of pickles.

ALL THE SAME TO HER

"I shall have to ask you for a ticket for that boy, ma'am," insisted a conductor, speaking to a quiet-looking little woman. The woman declined to pay.

"I am afraid if you don't pay for that boy I'll have to stop the train and put him off," he persisted.

"All right; all the same to me," she said.

"You ought to know the rules. How old is that boy?"

"I don't know. I never saw him before."

PLUMBING THE DEPTHS

An American motorist, stopped by a Scotch constable for speeding hinted broadly that he might pay to be let off.

"What, sir!" cried the constable. "Dae ye suggest that I wid take a bribe? Dae ye dare to insult me, sir?"

"Oh, excuse me," said the American. "I really—"

"But, now," put in the constable, "supposin' I was that kin' o' a man, how much wid ye be inclined to gie?"—Boston Transcript.

A teaspoonful of borax to a quart of water will make hard water soft so that it can be used for washing the most delicate skin.

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Los Angeles, Cal.

Los Angeles Markets

Los Angeles, July 30, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 58 lb.; prices to retail merchants in 1-lb. squares, 58@59.

Dairy Exchange prices last week on extras:

July	23	24	25	26	28	29
'19 ...	57	57	57	57	57	58

CHEESE

Brokers' prices:
California fresh, lb., 32; price to retail merchants, 34@35.

EGGS

Fresh extras, Produce Exchange closing price 55 doz., price to retail merchants, 58 doz.; case count, Produce Exchange closing price, 48 doz.; price to retail merchants, 52 doz.; pullets, Produce Exchange closing price, 47 doz.; price to retail merchants, 49.

Dairy Exchange prices last week on extras:

July	23	24	25	26	28	29
'19 ...	51	51½	51½	51½	52	55

POULTRY

Prices to producers: Hens, 24@35; broilers, 27; fryers, 27; roasters, 30; old roosters, 16; capons, 42; ducks, 27; ducklings, 27; geese, 25; turkeys, 34@ 40; squabs, 45; pigeons, doz., 1.00.
Belgian hares, live, 13.

POTATOES AND ONIONS

Potatoes: Demand and movement moderate, market firm. Sales to jobbers: Homegrown, cwt. White Rose, best 2.35@ 2.50; Stockton Burbank, sacked per cwt. 2.25@2.50. Old stock, sales from storage, Burbanks, sacked per cwt., 1.75@2.00.
Season practically ended, digging nearly completed. Quality and condition fair. Carloads f. o. b. usual terms, White Rose No. 1s, sacked, very few sales, mostly 2.15. Most shipments rolled unsold.
Sweets, lb., 6@7.
Onions: Demand and movement moderate. Homegrown White Globe, 1.20@ 1.30 per lug box, 3.25@3.30 per cwt. Yellow varieties, 2.50@2.75 cwt.

VEGETABLES

These are the actual prices obtained July 29, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Beets, doz., bunches, 40.
Beans: Kentucky Wonders, 2½@3 lb., practically no demand.
Carrots, doz., 35@40.
Cucumbers: Local lug, 25@35.
Celery: Local, best, 1.00@1.25 dozen bunches, smaller 75. Crates, best, 4.50@ 5.00.
Corn: Roasting ears, 40@60 per lug of
Eggplant, 6½@7 lb.
Parsley, doz., 15.
Radishes: Round Red 15@20 per dozen bunches. Long White, 30@35 per dozen bunches. Long Red 20 per dozen bunches.
Rhubarb: Local Giant Cherry, 1.25@ 1.50 per packed box. Strawberry, fancy 1.00@1.35 apple box.
Spinach, doz., 20.
Squash: Local summer, lug, 40@45.
Tomatoes: Lug 50@1.00.
Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained July 29, by Los Angeles wholesalers in restaurants, cafeterias, etc. Terms: Cash on the walk.
Apples: New crop, Alexanders, apple boxes, No. 1, 3.00; Gravenstein, bulk, 6@7 lb.; packed, 3.25@3.50; Red Astrachans, bulk 7 lb.
Apricots: Lug boxes, 1.50@1.85; bulk 4@6 lb.
Blackberries: Cr. 30 baskets, 5.00@5.50.
Cantaloupes: Markct dull. Quality and condition wide range. Sales direct to retailers: Turlock green meats, wrapped, ponies 54s best 75@1.00; poorer 50@65. San Fernando green meats, wrapped, best 75@1.00; cabbage crates, loose 3.00@ 4.00; tip tops, standard crates various sizes 1.00@1.25. Imperial Valley Honey Dew 12s and 15s 1.25@1.50.
Figs, per 10 lb bx, 1.75@2.00.
Grapes: Imperial and Coachella Valleys, Malagas, best 7@8 lb. Thompson Seedless 6½@7. Muscats, 10@12.
Loganberries: 4.50@5.00 per cr. of 30 baskets.
Peaches: Demand and movement moderate, market firm. Sales to retailers: locals various varieties, bulk, best 4@5 lb., lug boxes, 30 lbs., 1.50@1.75, few higher.
Pears: Northern Bartletts No. 1, 8 lb., No. 2, 5@6 lb.; lug boxes 1.25@2.00.
Pineapples, 15@17 lb.
Plums: Demand and movemcnt good. Santa Rosas 6@7 lb., Tragedies 5@6½ lb., Satsumas 6@7 lb., Wicksons 6@6½.
Raspberries: Cr. 30 boxes, 4.50@5.00.
Strawberrics: Cr. local, 5.00@7.00, best 2.00@2.25; poorer, low as 1.00.
Watermeions: Demand and movement moderate, quality and condition generally good. Local Kiondikes, large 2 cents lb., medium 1½, small 1, Northern Tom Watsons 2 lb.
Lemons: Fancy packed, 6.00@6.50; local pack, 4.00@4.50; loose, some tree ripe, 3.00@4.00.
Oranges: Valencias, medium fancy, 5.25@5.75; local pack, 3.00@4.00.
Grapefruit: Local fancy, 2.50@4.00 bx.; poorer, 1.50 up.

HONEY

Honey Exch.: Carlot prices: Orange Blossom, lb., 18; Wh. Sage, 17; Lt. Amber, Mtn., 14; Lt. Amber Alfalfa, 11. Guaranteed against decline until September 1. Some sales made 2 cents advance.

BEANS

Demand and movement slow, market firm. Pool supplies cleaned up. Warehouse cash to growers: Choice, recleaned basis, Small Whites, sacked 6.25@6.40; Lady Washington 5.75@6.00; Blackeye, 4.25@4.50; Tepary 2.25@2.50.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	18.00@22.00
Barley	16.00@21.00
Alfalfa	16.00@20.00
Wheat or Barley straw	8.00@10.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	26.00@27.00
Standard dairy	23.00@24.00
Standard alfalfa	21.00@22.00
Stock alfalfa	12.00@17.00

GRAIN AND FEEDS

Price on local grain exchange July 29:
Egyptian corn, 3.52½.
Milo maize, 3.30@3.32½.
Barley, 3.20@3.21¼.
Corn, 3.75@3.87½.
Wheat, 4.80@4.95.
Oats Red, 3.30; Cal. feed, 3.00@5.00.

San Francisco Markets

San Francisco, July 29, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, lb.:

Extras	59
Prime Firsts	57½
Firsts	55½

CHEESE

Dairy Exchange quotations:

Cal. Flats	32@34
Cal. Y. A. fy.	36
Ore. Triplets	36
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, dozen including cases:

Extras	57½
Firsts	53
Extra Pullets	49

POULTRY

Hens: W. Leghorns, 29@37; roosters, young, 40; old, 20@21; broilers, 32@33; fryers, 34@35; squabs, 2.50@4.00 doz.; ducks, 25@27; geese, 23@25; broiler turkeys, 45@50.
Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Western Meat Company prices are:
Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.
Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.
Calves: Light weight, 12½@13; medium, 11½@12; heavy, 10@11.
Lambs: Yearlings, 10@10½; milk, 13@13½.
Sheep: Wethers, 9¾@10; ewes, 7½@8.
Hogs: Hard, grain fed, 100 to 150 lbs., 20; do, 150 to 250 lbs., 20½; do, 250 to 300 lbs., 20; do, 300 to 400 lbs., 19½.
Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:
Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; canner cows, 4@5; good bulls, 5@6½; calves, 9@10.
Hogs: Today's market on top, packer hogs, hard and well finished, weighed and delivered off cars at our plant, South San Francisco: 175 to 250 lbs., 18½; 150 to 175 lbs., 18; 250 to 300 lbs., 18½. Usual dock and price discounts for other weights and kinds.
Fresh beef: (Carcass beef), per lb.: Fancy steers, 500 to 700 lbs., 16; choice steers, 450 to 650 lbs., 15½; good steers, 450 to 700 lbs., 15; medium steers, 450 to 700 lbs., 14½; fancy steers, 14; common steers, 14; fancy heifers, 14; choice cows, 13½; good cows, 13; fair cows, 12½; cutter cows, 12, hind quarters, 3c over carcass quotations; forequarters, 2c under.

POTATOES

Demand and movement moderate, market steady. Sales to jobbers: White, 1.80@2.20.
Demand and movement improving slightly, market steady. Quality and condition good. Carloads f. o. b. usual terms, White varieties, sacked, 2.00@2.20 per sack 116 lbs.

ONIONS

Onions: Per cental, yellow, 3.00@3.25; Bermuda, Crystal wax, 3.00@3.25; green,

VEGETABLES

Wholesale selling price:
Beans: String, 3@5; Wax, 3½@4; Pole, 4@6; Limas, 8@10; Italian, 6@7.
Cabbage, doz., 40@55.
Celery, cr. of 5 doz., 3.00@3.50.
Cucumbers: Large box, 1.00@1.50.
Corn, doz., 15@30.
Eggplant, southern, fy., 1.25@1.40 bx.
Lettuce, doz., 25@35.
Okra, green, lb., 6@8.
Peppers, Bell, lb., 10@20; Chili, 7@11.
Peas, lb., 4@6.
Radish, 10 doz. bunches.
Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.00@1.75.
Spinach, 75@1.25.
Squash: Summer, cr., 50@75; Italian, 50@1.00.
Tomatoes: Sacramento River per 35 lb. bx., 2.00@2.50; Merced, 75@1.25.

CITRUS

Wholesale selling price:
Per bx.: Lemons, fancy 6.50@7.00; choice, 5.50@6.00; standards, 4.00@4.50; lemonettes, 3.50@4.00; grapefruit, fancy, 3.00@5.00; choice, 2.50@3.50; oranges, 4.25@5.50.

FRESH FRUITS

Wholesale selling price:
Apples: California Newtown Pippins, 2.25@3.00; do, choice, 2.50@3.00; Red Astrachans, 2.50@3.00 per box; white, 2.50 per 4½ tier; new crab, 75@1.25 for 20-lb box; Gravensteins, 2.50@3.00 per box; yellow transparent, 3.00@3.25; Alexanders, 2.25@2.50 per box.
Apricots: Winters, 1.75@2.00; loose, 5@6; Royal, 5@7; ton, 120@140.
8; Royal, 5@7; ton, 110@140.
Bananas, 7@7½.
Blackberries: Ch., 8.00@10.00
Cantaloupes: Supplies heavy. Demand good, movement moderate, market steady. Sales direct to retailers: Turlock Green Meats, stds., 45's 1.50@1.75; ponies, 1.00@1.25; flats, 75@90; Honey Dew, standards 6's, mostly $1.50. Standard cantaloupe crates, some immature, 1.50@2.00.
Turlock: Demand active, movement good, market strong. Quality and condition fair. Carloads f. o. b. usual terms and f. o .b. cash track. Green meats standards 45s mostly 2.00; ponies mostly 1.50. Wagonloads cash to growers. Green Meats, standards 45s 1.75@2.10, mostly 1.90@2.00; ponies 54s, 1.25@1.75, mostly 1.60@1.65; flats 12s, 75@1.00, mostly 90@95.

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Cherrics: Oregons, lb., 18@20.
Figs, 75@1.00 bx.; Brunswick, 75@1.00; whites, 75@1.00, 30 lb. bx.
Grapes: Thompson seedless, 1.00@2.00 per box of 25 lbs.; Malaga, 1.50@2.25; Fontainebleaus, cr., 1.25@1.50 L. A. lug.
Loganberries, ch., 8.00@11.00.
Nectarines, 1.75 cr.
Peaches: Sacramento, 65@1.25 cr.; bx., 50@1.50.
Demand good. movement moderate Sales to retailers: Elbertas, boxes 1.00@1.15. Early Crawfords, boxes 1.00@1.25, 30 lb. lugs, ripe, 1.85@2.00.
Sacramento: Demand and movement good, market steady. Carloads f. o. b. usual terms, frees, boxes, 90, Elbertas, boxes 1.00.
Pears: Supplies liberal, demand and movement moderate, market steady. Sales to retailers: Bartletts, bx., 2.75@3.25.
Sacramento: Demand and movement good, market steady. Quality and condition good. Carloads f. o. b. usual terms. Bartletts, standard boxes 2.75.
Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00 @1.25.
Pineapples, doz., 2.00@5.00.
Raspberries, cr., 13.00@16.00.
Strawberries: Ch., 13.00@15.00.
Watermelons, lb., 1¼@1½.

DRIED FRUITS

The California Prune and Apricot Growers, Inc., announce prices:
Peach prices for the 1919 crop were announced at Fresno, July 16, by the California Peach Growers Inc. The price list agreed upon by the directors and announced by General Salesmanager Sturtevant, follows:
Effective this date and until further notice, our prices f. o. b. our California factories, on 1919 crop dried peaches for the domestic and foreign trade: September, October, November shipment, sellers' option; guaranteed against our own decline until January 1, 1920, are as follows:
Standard yellows, 14¾; Muirs, 15.
Choice yellows, 15¼; Muirs, 15½.
Fancy yellows, 16½; Muirs, 17½.
Extra fancy yellows, 17¾; Muirs, 18¾.
Slabs yellows, 14½.
For "practically peeled" add 1½ cents per pound (any grade).
Prices above are all bulk basis.
For packing in: 50-pound or 25 kilos boxes add 1 cent per pound.
25-pound or 12½ kilos boxes, add 1¼ cents per pound.
10-pound boxes, add 2 cents per pound.
Blue ribbon peaches packed five-pound cartons, 12 per case, 12.00 per case.
Blue ribbon peaches packed two-pound cartons, 24 per case, 10.00 per case.
Bakers' special, "practically peeled," 16¾ per pound, bulk basis.
Figs: Wh. stand., 16; ch., 18½; ex. ch., 20; fy., 22½.
Apples: Ch. (in 50's), 21; ex. ch., (in 50's), 21½; fy., (in 50's), 23.
Pears: 1919 crop, stand., 20; ch., 22½; ex. ch., 23½; fy., 26.

GRAIN AND FEEDS

Oats: Red feed, 2.80@2.90; black 2.90 @3.00 per cental.
Corn: California yellow, 3.35@3.45 per cental. Egyptian 3.25@3.35; Milo maize, 3.10@3.12½.
Rye, 3.30@3.75.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley. 52.00 @54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of July 26, Scott, Magner & Miller says:
Receipts past week 2770 tons. Receipts probably will continue to increase for several weeks unless the shortage of cars prevents. A large portion of the hay received during the week has been by boat from Bay and River districts. Demand has been fairly active and prices have been maintained without difficulty. The heavier portion of the hay receipts has been of wheat hay of all grades. Most of the Red Oat hay has come in by boat from the reclaimed districts and has been of good quality. Several sales of round lots have been reported from country districts where trade has been better than for some time. This is especially the case with alfalfa. Owing to reported shortage of water in some of the irrigating districts and to the grasshopper pest in others, alfalfa has been held firm on a higher range of prices than heretofore.
We quote today wholesale prices in carload lots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5 wire bales)	17.15@18.00
No. 1 Wheat or Wheat and Oat hay	15.00@17.00
No. 2 Wheat or Wheat and Oat hay	12.00@14.00
Choice Tame Oat hay	16.00@17.00
Other Tame Oat hay	12.00@14.00
Wild Oat hay	10.00@13.00
Barley hay	12.00@15.00
Alfalfa hay	16.00@20.00
Stock hay	9.00@11.00
No. 1 Barley straw, bale	50@80

Citrus Markets

Los Angeles, Cal., July 30, 1919
Wide variation in quality makes for big sprcad in prices. In general the Valencia market is much stronger than for scveral weeks.
The demand for sound, high grade stock of lemons is keen, but there is a vast quantity of low grade fruit commanding red ink.

Shipments

Shipments of citrus fruits to date since November 1, 1918:
Southern California; oranges, 28,792, cars, lemons 8254, total 37,046.
To same date last season; oranges, 12,477, lemons 4498, total 16,975.
Central California this season; oranges, 4427, lemons 354, total 4781.
To same date last scason; oranges, 2539, lemons 115, total 2654.
Northern California; oranges, 244, lemons 2, total 246.
Last year same date; oranges, 203.

AT THE AUCTIONS

July 23
New York: 8 cars. Higher. Val. 2.85-6.80.
July 24
New York: 12 or., 1 lem. Val. 4.15-6.75, lem. 3.55-4.35.
Boston: 2 or., 2 lem. Val. 1.90-6.25, lem. 2.45-5.85.
July 25
New York: 11 or., 1 grapefruit, 3 lem. Val. 3.30-6.45, lem. 60-4.70.
Cincinnati: 1 or., 2 lem. Val. 4.05, lem. 3.00-3.95.
Pittsburg: 3 or., 2 lem. Val. 3.25-4.60, lem. 90-2.60.
St. Louis: 3 or., 4 lem. Val. 3.00-4.70, lem. 2.00-4.50.
July 28
New York: 18 or., 1 grapefruit, 3 lem. Val. 3.65-7.50, grapefruit 5.70-6.70, lem. 50-5.05.
Cleveland: 6 or., 4 lem. Val. 1.30-6.45, lem. 2.00-5.60.
Boston: 7 or., 4 lem. Val. 3.35-6.20, lem. 1.75-5.35.
St. Louis: 5 or., 5 lem. Val. 2.90-4.40, lem. 2.75-4.95.
July 29
New York: 13 or., 5 lem. Val. 3.85-7.05, lem. 1.40-4.65, grapefruit 3.15-4.05.
Boston: 6 or., 4 lem. Val. 4.20-6.00, lem. 1.95-5.70.

JUNE DROP

Continued from Page 113

and show up on packing as heart or navel end rot fruits. These fruits, however, represent the few which are able to resist the attacks of the fungus and persist to maturity. The greater part of the affected fruits fall from the trees before reaching two inches in diameter. These fruits if cut open will exhibit a dark discoloration under the navel end which if cultured usually readily give the Alternaria.
On account of the nature of infection occurring in the navel end and the universal presence of the fungus spores, this fungus being found practically everywhere, there seems to be but slight hope of controlling the fungus drop by spraying. Cooperative spraying experiments have so far failed to show any results whatever. More work along the control of the fungus by spraying should be undertaken and is being planned for next season. It may be that the two or three sprayings with two per cent lime-sulphur, necessary to control thrips, will also act to prevent at least a part of the Alternaria infection.
Apparently the best hope for successful control of the June drop lies along the lines of the use of the summer cover crop or in the finding of heat resistant sports which are satisfactory in other respects.
In regard to the relation between time of plowing and blooming and the set of fruits there is considerable diversity of opinion, occasioned largely, in the opinion of the writer, by differences in root distribution in orchards. The writer has yet to find a grower who insists that deep plowing at the time of bloom, cutting and tearing off a large part of the feeding roots, is conducive to a heavy set. On the other hand there are many who are certain such a practice is prejudicial. There are growers, however, who insist that such a practice has not resulted in a heavy drop. In practically every case of this kind investigated by the writer he has found the feeding roots located rather deeply. It is also well recognized that fall or very early spring plowing even though comparatively deep does not cause the injury that late plowing incurs. This is undoubtedly due to the fact that the trees entirely recover from the shock and are able to put out a new system of feeding roots before the bloom comes on. The whole question therefore seems to be one largely of the location of the feeder roots.
There is not a particle of evidence to show that irrigation at the blooming period is necessarily connected with an increased dropping. There is, however, much evidence to show that it is of the utmost importance that trees be adequately supplied with moisture at this time. Irrigate when the trees need it, irrespective of the bloom, seems to be a good rule to follow.

WEATHER REPORT

San Francisco, California, July 26, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	.00	.11	62	48
Red Bluff	.00	.00	.00	102	60
Sacramento	.00	.00	.00	98	54
San Francisco	.00	.01	.01	67	52
San Jose	.00	.00	.00	84	46
Fresno	.00	.00	.00	102	62
San Luis Obispo	.00	.00	.01	76	48
Los Angeles	.00	.00	.00	90	60
San Diego	.00	.00	.00	78	04

Sulphur

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For eight years the G O Tractor has been the standard among practical farmers all over the country. Because of its advanced driving mechanism, it is the easiest tractor on the market to control and the most economical to operate. It has six speeds forward and six reverse—a right plowing speed in any sort of soil; a right speed at the belt for any kind of machine. It is the most powerful tractor in America for its weight.

Years are added to its life by the dust-proof casings on its gears. It was the first tractor to enclose its gears in an oil bath. It has no gears or chains on the traction wheel to be cut by sand and gravel.

The G O Tractor is the four-wheel, four-cylinder type—the simplest and most practical type of all. Every part of the motor and driving mechanism is instantly accessible. Adjustments can be made by anyone right on the ground, without the aid of special tools.

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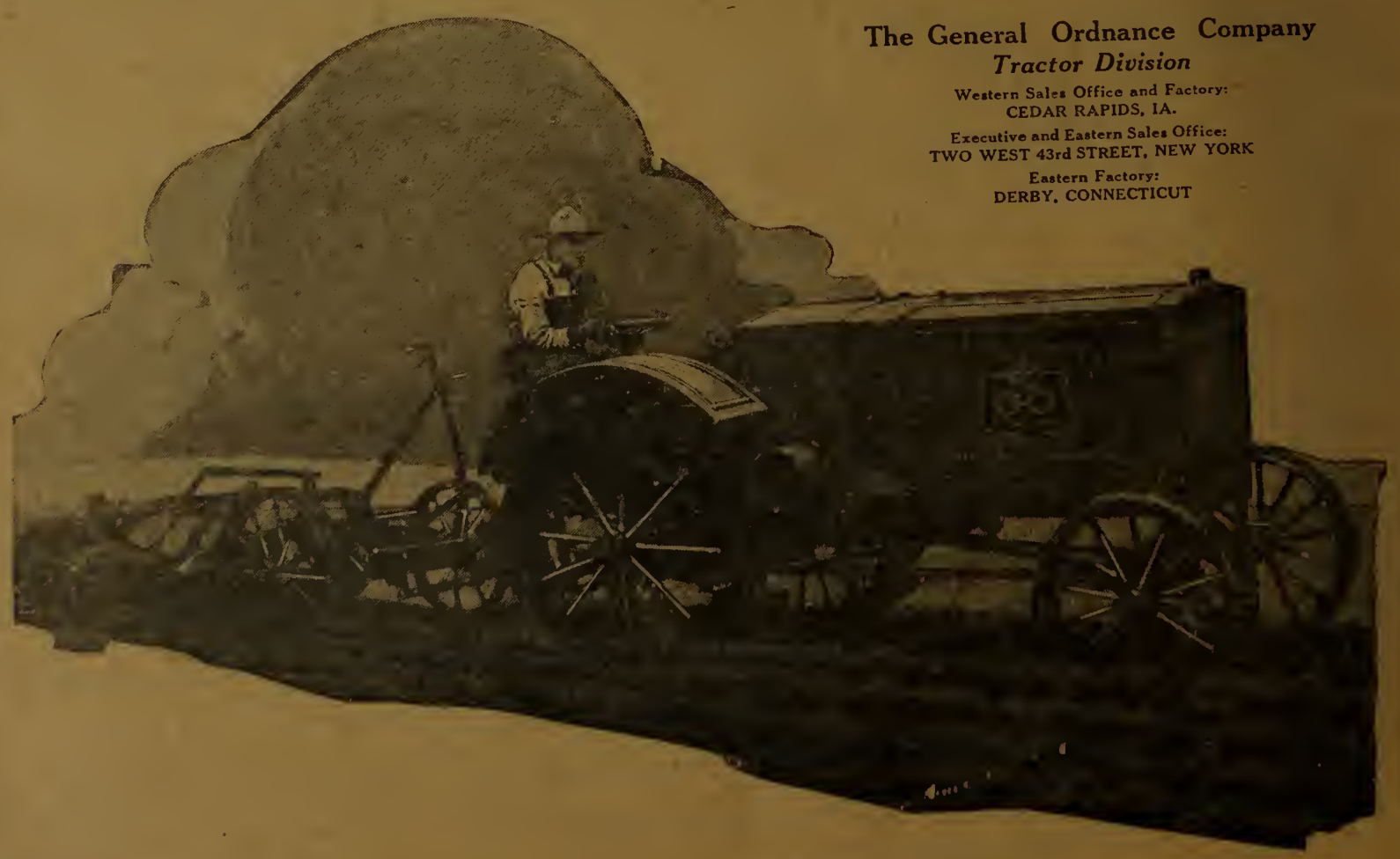

AUG 13 1919

File This Issue **Pest Fighting** You May Need It

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — August 9, 1919 — No. 6

Spraying: When, Why and How to Do It

THERE are biters; there are eaters; there are borers which undermine and sap the life of plants; there are flyers and crawlers; there are pests of plants at both top and root; there are rusts and rots, mildews and molds; there are rodents; there are birds; all causing untold loss to the human who would grow food for his own and for his neighbors. Ten figures are not sufficient to express this awful loss every year. It has always been and always will be, though there are vastly more people today with a determination to lessen this loss than ever before.

Only during the last year has the federal government awakened to the immensity of these destructive losses. Today there are efficient quarantines being installed which prevent free passage of many of these pests from other countries to our own. California was the leader in securing the legislation which made this step possible. California has for years been the most advanced in pest fighting of any section of the world. From the Orient, from Australia, from various parts of Europe, from South America experts have come to California to learn how we do it, and the gospel of quarantine and more efficient pest fighting methods has been freely preached by this state. Therefore, as a section which has advanced intensive agriculture as have few others California has credit for many of the advanced methods of work now used in all parts of the world.

The Cultivator has endeavored to disseminate information as to best methods of pest control since it was founded nearly a third of a century ago. Beginning with the issue of November 3, 1910 it has occasionally devoted almost an entire issue to pest fighting, to spraying, to fumigating, to poisoning, to general control of all kinds of crop and animal pests. These special issues have been classics, and two large publications on methods of pest control have followed almost identically the plan first adopted by the Cultivator in putting this information into the most usable form.

Notwithstanding this campaign and the most helpful bulletins of the bureau of entomology of the department of agriculture, the state horticultural commission, experiment stations of the state university, chemical companies and other specialists, questions continue to come to this office requesting help and yet showing that many of our growers have only a very crude understanding of the pests which are costing us so much and which surround us on every side. One has sprayed his scale with Bordeaux and still they live. Another has fumigated and still red spider flourishes. Another has planted clean potato seed and harvested scabby potatoes. Such incidents might be chronicled endlessly, for the problems of agriculture are great, and so many of us are just beginning that we have not yet fully grasped them.

The grower must bear in mind that there is at times intimate relation between fungus and insect pests. For example, the black smut, or sooty appearance, of many trees may be caused entirely by exuding of honey dew which may be the result of aphis or scale pests. The control of these insects effectually controls that particular fungus trouble. This is not only true of fungus but of some bacterial troubles. For example, insects may carry from flower to flower of the pear tree cultures which result in extension of blight.

Biters

We do not know that it is scientific, but for convenience let us divide the insect family into two great classes; biters and suckers. We believe the scientific men call the insects with jaws mandibulates. In this class are the June beetles, potato bugs and almost numberless other pests. These insects may be reached by sprays carrying an arsenate or some form of poison.

Suckers

The other class carries its own drilling apparatus and pumping machinery to extract the juices of plants and destroy their productiveness and even life. Instead of reaching these insects with poisons so-called contact insecticides are used, and they are smothered or their tissues are destroyed by these oily or caustic contact sprays or by poisonous gasses.

Fungus

Still another group of pests affecting every living thing and causing awful losses is fungous diseases.

Bacteria

Closely related to the fungus are many of the bacterial troubles. The most common case of this is perhaps the fire blight of the apple, pear and quince, summer wilt of tomatoes and similar diseases. For most of these troubles no spray has any effect. The trouble is usually within the tissues of the plant, and cutting and destruction by fire of the affected parts is the only protection.

Fusarium or blight of the tomato affects the root system of the plant so that once it is noticed there is no help whatever for that particular plant.

Still Others

Then there are the rodents or four-footed pests, the birds, and so on ad infinitum. These will all be handled in their turn in the following pages.

Various Formulas

There are literally thousands of formulas which have been used and recommended. They are more or less efficient, likewise expensive and sometimes inefficient according to the intelligence of the operator, according to weather and numberless other conditions.

Few of these formulas, less than 50, will be given in this issue, but we endeavor to give representative and tried formulas in each case. In addition we may say this is more for reference and only occasional use where it is impossible to secure fresh and dependable commercial mixtures. There has been great advancement made by large chemical concerns, and the sprayer or fumigator today may have his ready-to-use mixtures in sealed containers. This is true with fungicides and various kinds of insecticides. It is true even of hydrocyanic acid gas. It has been the custom until the last 12 months to manufacture under every tree. Now the gas in liquid form is simply pumped under the tree, and more effective and

Continued on Page 136

THERE WERE LOCUSTS

Something like three thousand five hundred years ago Moses wanted to secure relief for the children of Israel and one of his arguments to Pharaoh was that he had better let them go or the East wind would come and bring a plague of locusts. Pharaoh was hard hearted and so was Moses, for the East wind brought the locusts and the crops "even all that the hail hath left" were taken by the locusts. "Before them there were no such locusts as they, neither after them shall be such."

The grower who has observed the powers of our modern day insect has the idea that there has been some improvement in pest efficiency in the ages which have passed.

Apparently Asia Minor had no quarantine in force for we note some years later when these same children of Israel were finally released from Egypt and made their 40 year journey to the land of Canaan they must have carried along in their luggage some of the infestation for as they were ready to cross the Jordan "Thou shall carry much seed out into the field, and shall gather but little in; for the locusts shall consume it."

Nor is there much hope for the wicked, for some 15 or 16 hundred years later out on an island in the Mediterranean an inspired prophet looked into the future and wrote: "And he opened the bottomless pit; and there arose a smoke out of the pit as the smoke of a great furnace" • • • "and there came out of the smoke locusts upon the earth; and unto them was given power".

Modern day insects are of the bottomless pit kind and the fruit grower or the farmer who would succeed can do so only by making his smoke more effective than that of the bottomless pit.

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and LIVESTOCK and DAIRY JOURNAL

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The cover this week starts something. It starts a mass of pest fighting suggestions. There are so many pests and so many formulas and suggestions for handling them them that it appeared there would be no room for more graphic material on cover page. It is not often these pest fighting numbers have been issued; this is the fifth over a period of some nine or ten years, and we find they are proving invaluable to Cultivator subscribers. The service is perhaps not so great as the first special issue showed along this line, for our state university, our state horticultural commission and our county horticultural commissions have been giving more attention, or rather, more publicity, to pest fighting and have issued many bulletins, most of them having to do with special crops or special pests.

CREDIT

In securing the material for this issue we have drawn mainly from former numbers of the Cultivator, eliminating, however, a large part of the old time formulas, supplying others as later investigations have shown where improvements were necessary. The greatest change in procedure is in fumigation and the handling of walnut pests. For suggestions as to these changed methods we are indebted to H. J. Ryan, horticultural commissioner of Los Angeles County, to R. W. Hodgson, farm adviser of Los Angeles County, and to others.

The changes in fumigation methods are largely due to the work of William Dingle, in perfecting methods of application of liquid hydrocyanic acid gas; Professors Quayle and Ralph E. Smith of the state university have developed methods of work which are proving effective with walnut aphis and walnut codling moth; and for advancement all along the line credit is due to thousands of growers who have patiently dug and worked that California fruits and other products should be sent to markets clean and attractive, that California's fair name may be made fairer and with assured profits which mean better homes and better people.

IT COSTS

Something of the worth or, perhaps more correctly, lack of worth of the insect "industry" to California may be shown by the fact that the state will this year use more than 2000 tons of cyanide of potassium in fighting citrus pests alone. Other thousands of tons of sulphur, lime, tobacco bluestone, arsenates and fish and mineral oils will also be used. Thousands of men and large equipment are also required.

Does this investment pay?

Many years ago careful estimates made by the department of agriculture showed that the insect and fungus loss to agriculture of the United States reached the enormous total of a thousand millions annually. One pest, the Hessian fly, in its attacks on the grains of the country caused a loss of over 100 million dollars. The chinch bug came in for a credit of some two or three hundred million. Ten per cent loss to the hay crop was caused by various pests affecting it. This loss amounted at that time to $65,000,000; at present prices doubtless it nearly doubles that. The cotton plant suffers losses which it is impossible to compute. The loss from the apple worm runs into the millions, and animal products are reduced by at least $300,000,000 because of various pests and parasites.

No wonder then that the fruit growers think of their crops and buy these thousands of tons of material to reduce the ravages of insect pests.

QUARANTINE

The fearful loss from introduced pests was never so fully appreciated as it has been since the beginning of the war. The human race needed so much that it begrudged the tithe required by the pests, and this has resulted in quarantine laws which California has urged for years, but which the national government has failed to give us because of pressure by importers. That pressure has been forced to give way though effort is still being made by the importers to discredit our present law.

It was an inspiration to those who attended the convention of fruit growers at Riverside to hear from Prof. Marlatt of his determination to give the country efficient enforcement of the law. Untold millions of loss have been suffered by this country which might have been prevented by quarantine enforced years ago. Strength to the arm of Prof. Marlatt.

There are pests we know not of, and we crave continued ignorance. It is to be hoped that congress will consider the interests of the people rather than listen to the profiteers.

WEED CONTROL

There is always a seeking for a royal road to several things beside fortune, but like the royal road to fortune these other roads are largely paved with other than good intentions, hard work, frugality and efficiency. In weed killing the question continually comes up: "How can I eradicate this or that or the other pest?" And the most practical of answers is: "With good sharp tools and hard work."

Prof. G. P. Gray of the University of California has made extensive investigations in chemical control of weed pests. But so many questions entered into this, all the way from economy to weather conditions, that it is a matter for the expert rather than for the practical farmer. At least this is the case as a rule. The spraying of mustard and a few other pests of grain fields with sulphate of iron solution has secured beneficial results. Still its use is very limited. Treatment of morning glory and other pests has not yielded uniformly satisfactory returns.

The principal points to observe in weed control are: Prevention of seeding of plants already established; prevention of introduction of weed seeds with other seeds; prevention of top growth of perennial weeds and then clean culture. Sharpen the weed cutter; sharpen the scythe; keep the pests down. It takes time and patience, but it's the only successful way.

FUMIGATION

It takes considerable time and a whole lot of talent to secure simplicity in methods, machinery or implements. The mind seems to run to complexity and roundabout methods of doing things at their inception. We recall that nearly a third of a century ago we spent many a night watching the beginnings of fumigation in Orange County orchards, and well do we remember the mammoth derricks rigged on trucks and hauled through the orchards of the Bishops, Dr. Wall and others who were endeavoring to reduce fumigation methods to a practical working basis. This work was then largely under the direction of Prof. D. W. Coquillette of the department of agriculture.

It was but a few years until the great derricks passed and the pole method of hoisting tents was brought into action. Then came simplification of the methods of manufacturing gas, always, of course, under each tree. Later it was manufactured in machine and injected under the tent.

Now comes the simplest and best of all these methods. The gas is factory made and delivered to the grower ready for use without any of the manufacturing complications in the orchard. This is the first year the hydrocyanic liquid is being used in a large way. Last year it was used experimentally in many sections of the state, and the experiences of that year showed wherein the method was entirely practical, was cheaper and more effective. While there are still some complications due to atmospheric conditions this simplification has meant much more effective service.

This liquid hydrocyanic acid is now delivered from the factory to the orchardist for immediate use at a price far lower than it cost him a few years ago, this contrary to war price influence. Today the orchardist buys his liquid gas for 60 cents per pound, and one pound of this liquid has the efficiency of two pounds of the solid cyanide. Some of our growers well recall that the price of cyanide was materially above 30 cents.

A CHECK ON PACKERS

From time to time articles touching the problem of live stock marketing have appeared in the Cultivator. The general trend of all such articles has suggested the necessity for proper and efficient control of the industry, especially from the standpoint of the producer. On a number of occasions it has been suggested that one of the primary needs of the California live stock producer is an open and competitive market based on established grades and classes as developed by the operation of union stock yards. But, because it has been recognized that certain ills have developed on Eastern markets, the reservation has always been made for a federal or state controlled marketing system. The Cultivator does not fail to recognize the efficiency developed by American packers; at the same time, we believe that too great a centralization of power in the hands of a few, especially when such centralization touches such vital commodities as food, is a menace to the public welfare, and we believe it to be a function of the government to exercise proper control over such tendency.

It has long been urged, and often demonstrated, that through the ownership or control of pubic stockyards and refrigerator cars the larger packers are in possession of agencies that permit them to wield a tremendous power over the producer and consumer should they care to make use of their advantage. This being the case, we look with favor on the Kendrick and Kenyon bills now before the senate.

Both bills are substantialy the same, differing mainly in their administration. The Kendrick bill was prepared by Senator John B. Kendrick of Wyoming, who is also president of the American National Live Stock Association. Briefly, the bill approaches the problem of packer control from three angles.

First: It provides that every person, firm or corporation engaged in the business of handling, slaughtering, preparing, or marketing live stock or live stock products in interstate commerce shall operate under a license issued by the secretary of agriculture upon application.

Second: In order to prohibit the common ownership of meat packing houses and stock yards, it is provided that no common carrier shall unload live stock at a stockyards owned wholly or in part by a licensee engaged in the slaughtering of live stock.

Third: In order to place refrigerator cars at the disposal of the general public under the same terms and conditions that apply to other means of transportation, the bill provides that no common carrier shall, after the expiration of six months from the date of passage of the bill, employ any privately owned refrigerator cars except on the condition that they be furnished by the carrier, with the approval of the interstate commerce commission, to any person making reasonable request therefor.

Licensees under the bill are forbidden to engage in unfair and discriminatory practices, to conspire with one another, or to combine to prevent competition or to establish monopoly.

The bill, we believe, is constructive. It has been indorsed in principle by practically all the important livestock producers' organizations and deserves the active support of all live stock interests. It will not, however, become a fact without a militant attitude on the part of the producer.

Agricultural News Notes of the Pacific Coast

Northern California

Dried wine grapes are being contracted for at eight cents.

Rice growers near Live Oak, Sutter County, are short of water.

Coutolenc district of Butte County reports little trouble with pear blight.

Glenn County farm bureau is making an agricultural survey of the county.

Placer County's fruit is practically all two weeks ahead of last year in ripening.

A large crop of hay is being harvested in the Indian Valley section of Plumas County.

Three cars of dried apricots were sent direct to Antwerp, Belgium last week from Chico.

Rice growers expect the crop of the Sacramento Valley this season to run about 4,000,000 bags.

Fred Ellenwood of Red Bluff is making large shipments of spring lambs to San Francisco markets.

Nevada County farm bureau is planning for farm bureau picnic to be held in Penn Valley later this summer.

The state highway commission is making preparations for construction over Adin mountain in Modoc County.

The entire pear crop of members of the Contra Costa Pear Growers' Association has been sold for $85 per ton.

Mendocino County is joining the state in a campaign against coyotes. Expert coyote hunters will be employed.

The volunteer fire company in Susanville, Lassen County has a membership of 140 and six automobile trucks.

Rice growers of the Sacramento Valley appreciate the hot weather that has been giving proper maturity to their crops.

The Tuolumne Apple Growers' Association completed its organization at a special meeting held at Soulsbyville recently.

Prunes in Butte County have been showing serious drop, Commissioner Mills reporting some orchards suffering 50 per cent loss.

Irrigation ditches on the Durham land settlement property have been practically completed and grading of alfalfa lands is progressing.

The Paradise district of Butte County will have several carloads of Bartlett pears to ship. Much of these will go to canneries at Oroville.

A 500,000 sack capacity warehouse is being added to the mill of the California State Rice Milling Company across the river from Sacramento.

A Chico hop grower reports contracts for his 1919 hops at 50 cents a pound, said to be the record price since the wild speculation of 1882 when as high as $1.10 was paid.

The Chilean government has established a seed bureau at Sacramento. Testing and purchasing of seed before shipment and buying farm implements for work in South America are features of the work of the bureau.

Proposal to lower the flood gates of Lake Tahoe to supply irrigation water for the Newlands irrigation project in Nevada is being strenuously fought by the Placer County Chamber of Commerce and other interested bodies of that section.

Central California

Merced County has decided to make no exhibit at the state fair at Sacramento.

Stanislaus County farm bureau has organized its second cow testing association.

Terra Bella, Tulare County, reports apricots running nearly 65 per cent fancy fruit.

A gopher extermination campaign is being waged at Fort Romie, Monterey County.

The San Joaquin County agent is teaching girls cold pack methods of home canning.

Second set of cantaloupes in the Turlock district is very light, many vines showing none.

Farm centers of Monterey County are nearly all planning to take part in county fair activities.

Irrigators of Inyo County are employing attorneys to protect their rights against power companies.

Southern California tomato growers are having more trouble with tomato blight than in any preceding year.

Fresno County breeders of Duroc-Jerseys held banquet at Fresno August 2 to organize a county association.

Warehouse containing approximately $150,000 worth of grain was destroyed at Los Banos, Merced County, last week.

Black aphis are appearing in the bean fields of Stanislaus County. Blackeyes and Limas have been particularly affected.

Commissioner Rutherford of Stanislaus County is filing claims for cost of squirrel poisoning on ranches which failed to clean up.

Communities throughout the county are planning exhibits for the Fresno district fair to be held September 30-October 4 at Fresno.

A new irrigation district to take in some 50,000 acres near Corcoran in Kings County is proposed as a part of the Pine Flat project.

Dairymen of Kings County met recently at Hanford to form a county dairymen's association as a department of the farm bureau.

Monterey County reports its huckleberry crop on the hillsides as ready for making huckleberry pies and the quality is exceptionally fine.

The Kings River decreased in flow from 4000 second feet to 900 second feet within a short time, and it is feared the damage to crops will be serious.

At the farm bureau sale in Merced County $18.50 per hundred was paid for two carloads of hogs bought by the Cudahy Company of Los Angeles. This was equivalent to $21.65 Los Angeles market.

University people investigating the trouble affecting the cantaloupe crop of Stanislaus County report that it is not due to insects but to bacterial trouble. The investigation was conducted by Professors Woodworth and Horne.

San Jose has a new cannery in operation, having started July 7. It is claimed that building and appliances called for an investment of half a million dollars. The output will be about 130,000 cases of both fruit and vegetables. The cannery will employ approximately 500 women and girls.

Southern California

Hemet claims over 1000 extra workers in the fruit canneries.

The coming Lima bean crop is reported in 69 per cent condition.

Best apricots have been sold to Redlands canneries for about $80 per ton.

Blythe, Riverside County, recently shipped its first car of honey, netting $3600.

Banning has shipped out practicaly all her apricots to outside sections for canning.

California has approximately 30 mutual insurance companies now in operation.

Ventura County is to hold special election August 26 on $580,000 good roads bonds.

Farmers at Summit Valley report serious depredations by grasshoppers and squirrels.

The San Fernando Cannery is now sending out apricots at the rate of 322 cans a minute.

The Lima bean growers are being paid an additional two cents on last season's delivery.

The San Diego County farm bureau fair will be held at Balboa Park, San Diego, September 24-27.

Lima bean growers of Sawtelle and Inglewood in Los Angeles County have formed a marketing association.

The San Dimas Canyon dam is expected to be at least 50 feet in height in time to retain winter rains.

The farm bureau of Riverside County is encouraging boys and girls to enter into the activities of the pig clubs.

The California Date Association anticipates a harvest of 200,000 pounds of dates in Coachella Valley, Riverside County.

Stockhoders of the Covina Citrus Association have voted a bond issue of $160,000 for improving packing facilities.

The campaign to make permanent the Lima bean pool is being pushed, but there is apparently an organized opposition.

Los Angeles is shipping carlots of potatoes to Albuquerque, Chicago, Des Moines, El Paso, San Antonio and other points.

Ventura County's apricot harvest is much later than other sections. The first delivery at the canneries was made July 18.

Growers on the Huntington Beach mesa are discussing organization of an irrigation district to develop water for about 2500 acres.

A cannery at Riverside burned last week, causing entire loss of the plant and $70,000 worth of canned apricots of the present season's pack.

The Hemet-San Jacinto Growers' Association is paying $30 a ton to growers on delivery of apricots and peaches of canning size, $15 a ton for jam apricots.

A drainage district is proposed to to take in lands of the Patterson Ranch near Oxnard. Bonds will be voted on August 26; $200,000 is the estimated expense.

The California Walnut Growers' Association has made its final distribution of surplus reserve to growers for last season's sales. Ventura County growers received about $11,000.

The Coast and General

The berry harvest of Bellingham, Washington, is at its height.

Cannery at Puyallup, Washington is bidding $10 on cull apples.

Arizona cantaloupes are practically all marketed and at satisfactory prices.

Arizona has 115,000 acres in cotton. About two-thirds of the area is in Long Staple Egyptian.

The business of fruit refrigeration has assumed immense proportions in transcontinental shipments.

Arizona estimates that about 5000 acres are planted to potatoes. This is about the same as last year.

A new pear growing district near El Paso, Texas, is this year making its first shipments, approximately 75 cars.

A party of buyers from Iceland, Denmark, Norway and Sweden has been making tour of the Hood River apple district.

Farmers near Washington state experiment station near Chehalis made their annual pilgrimage to the station, holding picnic and institute.

The Oregon Growers' Cooperative Association signed up at least half the prune acreage in the state at the meeting recently held at Yamhill

Dairymen in Maricopa County, Arizona, figure that they will effect a saving of $20,000 a year on the improved roads which are soon to be built.

The Arizona state land board has withdrawn from entry 18,000 acres about 12 miles south of Wickenburg. A proposed irrigation project will furnish water for this land.

The cherry crop of the Wenatchee Valley of Washington proved to be short of estimates. Only about 65 carloads were shipped. Prices, however, were entirely satisfactory.

A strong effort is being made to have every section of Arizona represented at the International Soil Products Exposition which is to be held at Kansas City, September 25 to October 10.

The ministry of food of Canada is threatening to take entire charge of the food situation again because of profiteering. Dealers are taking advantage of embargo against certain American foodstuffs.

Peaches in carload quantities are now being shipped out of the Salt River Valley. It is only recently that a sufficient number of peaches has come into bearing to justify shipping them out in refrigerator cars, although express shipments have been made for many years. About ten carloads will be shipped out this year.

Heavy rains in the northern part of Arizona have done considerable damage to roads. The Santa Fe Trail across the state from east to west was temporarily put out of commission. The road south to Phoenix was also badly washed. Crews have been put out to repair the damage so they will remain impassable for but a few days.

Carl S. Rousseau, a farmer living north of Phoenix in the Salt River Valley, has produced 45 tons of watermelons on one acre of land. None of these have sold for less than $20 a ton and from that up to $40. One load weighing 6500 pounds was composed of watermelons averaging 43 pounds each. Another shipment of 5400 pounds averaged 45 pounds each.

SPRAYING

Continued from Page 133

cheaper fumigation is the result. Notwithstanding that, for those who have but a small amount of fumigation to do and are not able to use the liquid gas, formulas will be found for the mixtures which will manufacture the gas directly under the tree or in each warehouse or room as needed.

Fungicides

Amongst fungicides are the copper compounds, sulphur, corrosive sublimate, formalin. There are representative formulas of each.

FUNGICIDES

1. Commercial Bordeaux Mixture

Several preparations of this sort are on the market in the form of a paste or dry powder to be diluted with water. Objection is sometimes made to these preparations that they will not remain in suspenslon in water as well as the home-made Bordeaux mixture, but some of them are probably as good or better than the average mixture prepared on the ranch. The commercial preparations are more expensive but more convenlent for use, and are especially of interest to the small grower.

2. Bordeaux Mixture

The formula ordinarily used, the 5-5-50, is entirely harmless when the plant is dormant. It may also be used on some growing plants; others it will kill or greatly injure. It may be used even stronger than the formula given when the plant is dormant, but these proportions are effectlve with most fungus troubles. By the 5-5-50 formula is meant:

(a) Copper sulphate	5 pounds
Stone lime	5 pounds
Water	50 gallons

The weaker solution is

(b) Copper sulphate	3 pounds
Stone lime	5 pounds
Water	50 gallons

If hydrate of lime is used add one-fourth more.

To mix, dissolve the copper sulphate with water in proportion of one pound of sulphate to sufficient water to make one gallon of solution for each pound of sulphate used. The stone lime may be slaked and dissolved in water in the same proportions as the sulphate. This gives convenient stock solutions, every gallon of which contains one pound of lime or of sulphate. To make the mixture from these stock solutions take, say, for the formula (a) above, five gallons of the lime solution which will contain five pounds of stone lime and five gallons of the sulphate solution which will contain five pounds of copper sulphate. Five gallons of each of these two solutions may now be mixed with water by pouring through a strainer into water sufficient to make 50 gallons. Do not mix the solutions before pouring into the water.

3. Bordeaux Paste

The best cure for gum disease.

Bluestone	1 pound
Fresh burned lime	2 pounds

Dissolve the bluestone in one gallon water, usIng wooden or earthen vessel, by hanging it In a sack near the top of the water; slake the lime in about one-half gallon of water. Stir together when cool, making a mixture about the consistency of whitewash. Apply with a brush. May be applied to healthy bark as a preventive. Mix fresh each day or two.

4. Bluestone Copper Sulphate

A soluble compound of copper, the raw material for the preparation of most other compounds of copper. This cannot be used on follage. For dipplng graln use:

(a) Bluestone	1 pound
Water	4 gallons

Dip for 3 minutes. Follow by dipplng In:

(b) Quicklime	1 pound
Slaked in water	10 gallons

5. Bluestone for Wash Water

Bluestone	1½ pounds
Water	1000 gallons

6. Sulphur

For dustlng upon plants for the control of surface mildew, red spider, or other parasites, the fineness of the sulphur is an all important consideratlon. Flowers of sulphur, the finest and fluffiest grade of sublimed sulphur, has been heretofore recommended for application as a dust. At present, however, there are upon the market several brands of extremely finely ground suiphurs which are finer than the best grade of sublimed sulphur and no more expensive. Some of these sulphurs, which have been specially prepared for dusting, are ground to pass a 200-mesh boltlng cloth. These are apt to cake or to clog the dusting apparatus. If three parts of sulphur are thoroughly mixed with one part of hydrated lime, kaolin, or other inert powder, these difficulties may be avoided.

7. Corrosive Sublimate (Bichloride of Mercury)

This is a very poisonous substance and is one of the most powerful of germicides; it is employed to some extent in plant disease treatment. The usual strength is:

Corrosive sublimate	1 ounce
Water	8 gallons,

or 1 part to 1000.

Tablets to make this strength when added to 1 pint of water may be obtained at drug stores. Distilled or rain water should be used; the solution must not be kept in a metal container.

8. Formalin

Formaldehyde vapor dissolved in water in what is usually called the 40 per cent solution is one of the best fungicides and is often used in place of corrosive sublimate. Strength varies with seed to be treated.

(a) Formaldehyde	1 pound
Water	40 gallons
(b) Formaldehyde	1 pound
Water	30 gallons
(c) Formaldehyde	1 pound
Water	12½ gallons

CONTACT INSECTICIDES

The lime-sulphur wash is usually considered an insecticide. It is, however, an excellent fungicide, though where a fungicide only is desired Bordeaux is usually preferred. At full strength it may be used only when trees are entirely dormant.

9. Commercial Lime-sulphur Solution

The growers of the state are being supplied with concentrated commercial lime-sulphur solution of good quality and at reasonable prices. The great bulk of this important pest remedy used in the state is therefore of commercial manufacture, testing between 32 degrees and 34 degrees Baume. It is only necessary to dilute with water before spraying.

For spray on dormant trees dilution of commercial solution is usually at the rate of 1 part commercial mixture to 9 parts water. As a summer spray or when used on trees in full leaf use at rate of 1 to 33.

10. Home-made Lime-sulphur Solution

Stone lime	50 pounds
Sulphur (sublimed or powdered)	100 pounds
Water to make	50 gallons

Heat in a cooking barrel or vessel about one-third of the total volume of water required. When the water is hot add all the lime and at once add all the sulphur, which should previously have been made into a thick paste with water. After the lime is slaked another third of the water should be added, preferably hot, and the cooking should be continued until a clear orange colored solution is obtained (usually 45 to 60 minutes), when the remainder of the water should be added either hot or cold as is most convenient. The bolling due to the slaking of the lime thoroughly mixes the ingredients at the start, but subsequent stirring is necessary if the wash is cooked by direct heat In a kettle. After the wash has been prepared it must be allowed to settle and then be strained through a fine sieve as it is being run into the spray tank. The resultant product is a concentrated solution of lime-sulphur, which should be diluted about six times with water for a winter spray.

11. Sulphur Compounds

For various reasons it is often desirable to mix sulphur and water and apply to plants as a spray. Sulphur, however, is not easily wetted with water and it is a difficult matter to make a uniform mixture of the two. It has been found that a number of substances, soap, glue, dextrin, etc., when mixed with water and sulphur, have the property of counteracting the natural aversion of sulphur to water. Certain of these substances have been used in the preparation of commercial sulphur pastes. These commercial pastes, as now manufactured, contain from 45 to 50 per cent of sulphur in a very finely divided condition, the remainder being water and one of the substances mentioned above. The effect of these pastes is that of dry sulphur. The usual strength to use is:

(a) Commercial sulphur paste	8 to 21 pounds
Water	100 gallons

A satisfactory wettable sulphur can be easily made at home by the use of glue water as follows:

(b) Powdered glue	¾ ounce
Hot water	1½ gallons
Sulphur (flowers or powdered)	5 pounds
Water to make	100 gallons

Dissolve the glue in hot water, or soak over night in 1½ gallons of cold water. Add the glue water to the sulphur a little at a time and work up into a smooth paste as free from lumps as possible. Rubbing is better than stirring. Wash this paste into the spray tank through a fine screen, using the remainder of the glue water to wash it through and a stiff brush to break up the remainder of the lumps. Then add plain water to make 100 gallons.

(c) Make a paste of	
Flour	4 pounds
Water	4 gallons
Mix this with	
Sulphur (sublimed or powdered)	5 pounds
Then add	
Water to make	100 gallons

12. Resin Wash

The old time resin wash is not used as generally as formerly, but is still a favorite with nurseymen, for dipping nursery stock. It is now put up in a commercial mixture with instructions on the container. It is rather expensive but effective.

Resin	20 pounds
Caustic soda (76 per cent)	6 pounds
Fish oil	2½ pints
Water	100 gallons

Put resin, lye and fish oil, with sufficient water to cover them well, into a large iron kettle and heat until all are well mixed and thoroughly dissolved. Add cold or hot water to make when finished 100 gallons of spraying material. This is one of the oldest sprays and very adhesive. Some complain because of this wash closing the pores and preventing proper functioning of the leaves. We have never heard of any injury from this cause.

13. Kerosene Emulsion

Kerosene or petroleum distillates are often used most effectively. There are conditions where greatest care must be observed. For instance, on excessively hot dry days there is danger of either tree or fruit injury. Some experiments with these oils have appeared almost foolhardy but at the same time have accomplished results. For instance, in the California Cultivator of March 22, 1919, page 409, Mr. Calkins referred to spraying pure kerosene over tree infested with wooly aphis and pouring over a quart of the oil about the stripped roots and covering immediately with earth. In citrus orchards especial care must be observed during the hot weather. In the form of emulsions the distillate or low grade kerosene sprays are safer but even then do not allow large quantity to run down trunk and saturate the bark.

Kerosene	15 gallons
Liquid soap	¾ gallon
(Or hard soap)	4 pounds
Water	200 gallons

If liquid soap is available, it is preferable to hard soap, since no heating is required. Hard soap, preferably fish oil, is cut in thin slices and dissolved in hot water. The soap is placed directly In the spray tank with 10 to 15 gallons of water or more (the exact amount is not important), and then the engine is started. The oil is now added slowly, and the materials are emulsified by being run through the pump under pressure. After a few minutes the rest of the water may be added, and the spray is ready to apply to the trees.

Certain "tree" distillates, testing 31 degrees to 32 degrees Baume, said to be selected and partially refined, have lately displaced to a considerable extent the heavier distillates of 27 degrees to 28 degrees for use on citrus trees.

14. Distillate Emulsion

(a) Tree distillate (31 degrees-32 degrees Baume)	4 gallons
Liquid soap	¾ gallon
(Or hard soap)	5 pounds
Water	200 gallons

These materials are emulsified in the same manner as explained for the kerosene emulsion, Formula 13. If the distillate is used without soap, the following is the formula:

For use on deciduous trees the following is recommended:

(b) Distillate 27 degrees-28 degrees Baume)	20 gallons
Fish oil soap	30 pounds
Water to make	12 gallons

Dissolve the fish oil soap in water, heating it to the boiling point, add the distillate and agitate thoroughly while the solution is hot. For use add 20 gallons of water to each gallon of the above mixture.

15. Distillate Emulsion and Tobacco Extract

Water	12 gallons
Fish oil soap	30 pounds
Distillate (32 degrees-34 degrees Baume)	20 gallons

The above emulsion is prepared in the ordinary way as a stock solution. For use in the orchard dilute 1 to 20 parts of water. To every 200 gallons of this diluted spray add 1 pint of tobacco extract containing 40 per cent nicotine, or about 3½ gallons of tobacco extract contalnlng 2¾ per cent nicotine.

16. Crude Carbolic Acid Emulsion

Fish oil soap	40 pounds
Crude carbolic acid	5 gallons
Water to make	40 gallons

The 40 gallons of water are first poured into the cooklng kettle and allowed to boil. While the water is getting hot, the whale oil soap is cut into fine pieces, so as to make it dissolve easily, and added to the water. When the soap is all dissolved in the hot water the carbolic acid is added, and all is allowed to boil for a short time to insure thorough mixing. The whole operation requires less than one hour. This makes about 43 gallons of rich stock solutlon. For spraying the stock solution is diluted 1 to 2[illegible] of water.

COMBINED INSECTICIDES AND FUNGICIDES

Some years ago when W. H. Volck was horticultural commissioner of Santa Cruz County he recommended combined insecticide-fungicide sprays. This is economical for one spraying operation accomplishes two purposes.

The apple is attacked by a number of pests, both fungi and insects. To combat these economically the spray mixture should contain remedies for as many pests as possible.

First spraying, to be applied just as the blossoms are falling or in full bloom, according to locality:

17. Arsenate-Sulphur

(a) Acid arsenate of lead	8 pounds
Milled or atomic sulphur	5 pounds
Dilute Bordeaux mixture to make	100 gallons

Where apple scab is not a factor use water instead of Bordeaux.

Second spraying: apply ten days to two weeks after the first spraying:

(b) Neutral arsenate of lead	6 pounds
Milled or atomic sulphur	3 pounds
Water	100 gallons

Third spraying. Repeat the second spraying formula in about three weeks.

If it is desired to control aphids add one to two pounds of 40 per cent nicotine sulphate.

18. Bordeaux-Arsenate of Lead

Neutral lead arsenate	3 pounds
Bordeaux mixture	50 gallons

Where a stronger poison is desired the arsenate of lead can be increased to four pounds. A more uniform distribution of the arsenate of lead is secured throughout the spray when it is added to the milk of lime instead of placing it in the spray tank.

POISONS FOR CHEWING INSECTS

Paris green has largely been r[illegible]

placed by lead arsenate. If used, however, it is at the rate of one pound to 150 gallons of water. Modern chemistry has made the lead arsenates or zinc arsenite more effective and more economical than Paris green. However at times it may be substituted, especially if preferred in bran mash or other poison baits.

18½. Acid Lead Arsenate (Lead Hydrogen Arsenate, Di-lead Arsenate, often labeled "Standard" or Lead Arsenate. The acid type of lead arsenate contains more poison per pound than the basic type and is a stronger and quicker acting poison. It is, however, somewhat susceptible to the action of other chemicals, particularly those of an alkaline nature (such as soaps, lime-sulphur solution, etc.), and is more or less dissolved by them when used as a combination spray. In the moist climates along the coast, or in continuous damp, cloudy weather elsewhere, whether used alone or in combination with other sprays, some of the arsenic is apt to be dissolved and cause serious foliage injury. It is not considered as a safe arsenical for use on stone fruits, beans or other susceptible plants.

Basic Lead Arsenate (Usually labeled "Tri-plumbic" or "Neutral." The basic type of lead arsenate contains less arsenic per pound than the acid type, and is a weaker and slower acting poison. It is not decomposed, however, by chemicals of an alkaline nature, such as are usually applied with it as a combination spray, nor by the damp weather of the coast regions. It is considered the only safe arsenical to use on stone fruits, beans or other susceptible plants.

The lead arsenates are usually sold as a paste containing about 50 per cent of water, or as a dry powder. The paste should be thinned somewhat with water and worked into a smooth cream before adding to the spray tank. The powder may be added directly to the tank and mixed by means of the agitator.

For codling moth and most defoliating insects, use:

19. Arsenate Paste

(a) Acid lead arsenate paste	4 to 8 pounds
Water	100 gallons
(b) Basic lead arsenate paste	5 to 10 pounds
Water	100 gallons

Dry or powdered lead arsenate contains twice as much arsenic as the paste, therefore use only one-half as much in the above formula.

20. Zinc Arsenite

This is a more active and stronger poison than either type of lead arsenate and is useful in controlling the various caterpillars which are troublesome on pears and apples in the early spring, but is very apt to cause injury if the application is made after the time of full bloom.

Zinc arsenite powder	3 pounds
Water	100 gallons

White arsenic (arsenic trioxide) is only sparingly soluble in water, although sufficiently so to prohibit its use on plants as an insecticide. Its use as a stomach poison is therefore limited to the preparation of poison baits for the control of grasshoppers, armyworms, cutworms, etc., and in some other cases where the insecticide is not to be applied to growing plants.

21. Poison Bran-mash

Bran	25 pounds
White arsenic	1 pound
Molasses (cheap blackstrap preferred)	2 quarts

Mix the arsenic and the bran dry, and add the molasses which has been diluted with water. Add enough water and mix thoroughly to make a dry mash which will broadcast easily.

22. Citrus Bran-mash

White arsenic	1 ponud
Molasses (cheap blackstrap preferred)	2 quarts
Lemons (or oranges)	6 fruits
Water (abbut)	4 gallons
Bran	25 pounds

Mix the above materials as follows: Stir thoroughly the white arsenic, molasses, and water first. Grind the lemons, including the rinds, in a meat grinder, or chop fine, and add to this liquid. Then slowly pour this over the bran and stir thoroughly until an even mixture is secured.

The amount of water to use in the preparation of these baits will vary according to the coarseness of the bran or substitutes. A dry mash is prefcrable to a wet mash because it does not harden under the heat of the sun and remains palatable, while wet mash becomes baked and unattractive. Distribute in small quantities early in the morning.

23. Argentine Ant Syrup

The following formula was recommended by Prof. R. S. Woglum in an article in the California Cultivator of March 30, 1918. It is now generally recognized as a standard for this pest. Prepare a syrup:

Granulated sugar	15 pounds
Water	7 pints
Tartaric acid (crystalized)	¼ ounce

Boil for 30 minutes.
Allow to cool.

Dissolve sodium arsenite (chemically pure)	¾ ounce
In hot water	1 pint

Cool. Add poison solution to syrup and stir well.

Add to poisoned syrup: Honey	1½ pounds

Mix thoroughly.

24. Tartar Emetic for Ants

Simple formula recommended by J. B. Neff and given in Cultivator of October 7, 1916:

Tartar emetic the size of a lima bean in three tablespoons of honey. Mix and place in two or three saucers. and place where ants are proving troublesome.

25. White Arsenate for Ants

Sugar	18 pounds
Water	6 quarts

First dissolve the sugar in the water by stirring, or by heating and stirring, then add one ounce of white arsenic which has been previously converted into sodium arsenate. Add enough water to make exactly three gallons. This formula will produce a syrup containing .2 of 1 per cent of arsenic trioxide by weight.

Use on bits of sponge on small shallow dishes, two or three to a room. Trace back the incoming column of ants and place the poison soaked sponge as near as can be readily determined to the place of entrance.

Sodium arsenate is made by taking sal soda 2 pounds, white arsenic 1 pound, water 1 gallon. Put ingredients in iron or granite ware kettle, not aluminum. Boil 15 or 20 minutes until solution is clear.

DUSTS

26. Sulphur and Lime

As a rule in sulphuring for red spider and other mites and the mildews growers use lime with the sulphur; sometimes equal parts lime and sulphur, sometimes ¾ sulphur and ¼ lime. The more common practice now, however, is to use best grade sulphur in either hand operated or power machines.

The sulphur should be forced over the surface in a cloud of dust and not deposited in large quantity.

27. Dry Arsenate

Use dusting machine or sack of loosely woven material and powder ear of corn as silk begins forming. There are now excellent bellows dusters which give better results than the cloth shaker.

28. White Hellebore

White hellebore	1 pound
Water	50 gallons

Effective against root maggots of potted plants.

29. Tobacco Dust

The tobacco dust may be discharged over tree or plant, but as a rule it is diluted with 50 per cent of either kaolin or hydrated lime.

30. Nicotine for Walnut Aphis

During the last season extensive investigations have been made as to methods of handling two walnut pests. One of these is the aphis and the other is the coddling moth. More definite results have been accomplished, or at least more definite knowledge secured, with the aphis remedy. This has been secured with the use of approximately this formula:

Kaolin	77 parts
Hydrated lime	21 or 22 parts
Nicotine sulphate (40 per cent)	1 or 2 parts

The preparation of this mixture has been entirely handled by experts of the state university and the Walnut Growers Association, and the ready-to-use mixture delivered to walnut growers has been applied usually by the use of power machines.

31. Nicotine-Arsenate

Kaolin (about)	67 parts
Hydrated lime (about)	16 or 17 parts
Nicotine sulphate (40 per cent)	1 or 2 parts
Dry arsenate of lead	15 parts

FUMIGATION

32. Hydrocyanic Acid Gas

Fumigation practice has undergone radical change within the past two years. While the former method of manufacturing gas under the tent in earthen vessels is continued to a limited extent the greater part of orchard fumigation is now accomplished through the use of liquid hydrocyanic acid gas. This is delivered direct from the factory to the orchard in containers, and pumps adapted to forcing this liquid gas under the tent in the form of a spray, with graduated gage indicating exact dosage, have been invented and are now in regular use. The new process has the advantage of giving more complete kill, practically without injuring the tent and with less danger of injury to the tree, and with it all it is fully as economical as the old method. More than ever the process is one for the expert. Most satisfactory work seems to be done by cooperative organizations of neighborhood growers. Excellent work is also being done by contract fumigators. There is no formula to be given for this process for it is simply the forcing into the tent of the liquified gas. In this issue is given chart showing dosage for various sized trees; chart devised by Prof. R. S. Woglum.

For those who understand handling this deadly gas we give formula which may be used in manufacturing gas either for orchard trees under tent or for fumigating rooms, this dosage for every 100 feet of space. For warehouse stronger dosage may be used if preferred.

Sodium cyanide	1 ounce
Sulphuric acid	1½ fluid ounces
Water	2 fluid ounces

The acid and water are mixed in the vessel and the cyanide dropped in at the last moment.

33. Carbon Bisulphide

Carbon bisulphide is a liquid which evaporates quickly when exposed to the air, forming a heavy and inflammable vapor of great penetrating power. In using the material for fumigation it is essential that it be placed at the top of the room in a shallow container in order that the heavy vapors as they are driven off will thoroughly diffuse with the air contained in the space to be fumigated. The proper amount to use depends upon the type of room being fumigated and ranges up to about 30 pounds to 1000 cubic feet in ordinary rooms where the walls and floor have not been made especially tight. The best results are obtained by doing this work when the temperature is above 75 degrees Fahrenheit.

MISCELLANEOUS

There have been several sprays for weeds, and the grower has continually sought for something which would be effective on such troublesome weeds as morning glory, but as a rule the best weed destroyer is a sharp weed knife or weed cutters on the cultivator. However, some may wish the formula for use of sulphate of iron on mustard of grain fields; also for the arsenicals for morning glory and other pests. Here are the proportions:

34. Sulphate of Iron for Weeds

Many weeds are susceptible to a spray of sulphate of iron and some, especially mustard, are so sensitive to it that spraying a grain field will often eradicate the mustard and still leave the grain growing lustily. A very strong solution is used:

Sulphate of iron	100 pounds
Water	50 gallons

Dissolve by constant agitation.

35. Arsenic-Caustic Soda for Weeds

Caustic soda (sodium hydroxide), or a good grade of concentrated lye, is much more active in dissolving arsenic than either sal soda or soda-ash, and much less is required, although the cost per pound is greater. Very little heat is required in the preparation of sodium arsenite by means of these materials. If made in large quantities (five gallons or more) the use of heat is unnecessary.

Granulated Caustic Soda (98 per cent)	10 pounds
White Arsenic (arsenic trioxide, 99 per cent)	20 pounds
Water, to make	5 gallons

Dissolve the caustic soda in about 2 gallons of water in a metal or wooden vessel (preferably iron), and while still hot add the dry arsenic, about a pound at a time at a sufficient rate so that the solution is just at the point of boiling, but does not actually boil. Stir continuously during the addition of the arsenic and until all is dissolved. Considerable heat is produced by dissolving the caustic soda. Additional heat is furnished by the chemical reaction involved in the union of the caustic soda with the arsenic to form sodium arsenite. After all the arsenic is dissolved let the solution cool and add water to make exactly five gallons.

(Caution.—Do not add cold water to the hot solution. An explosion may result as the solution is hotter than the boiling point of water.)

36. Torch for Dodder

Dodder, a most perplexing pest of alfalfa and other crops, may be controlled by the use of a gasoline torch burner. The kind with a chamber for compressed air and of large capacity is necessary. After cutting alfalfa, use the torch over infested spots in the field.

37. Tree Whitewash

In order to prevent sunscald whitewashing the trees or protecting by shade is at times necessary. Where a tree has been severely cut back or where a protecting limb has been broken off apply to the exposed limbs and trunk the following, known as California tree whitewash:

(a) Quicklime	30 pounds
Tallow	4 pounds
Salt	5 pounds
Water enough to make the mixture flow freely.	
(b) Waterproof Whitewash.	
(1) Quickline	62 pounds
Water (hot)	12 gallons
(2) Common salt	2 pounds
Sulphate of zinc	1 pound
Water (boiling)	2 gallons
(3) Skimmed milk	2 gallons

(1) Slake the lime thoroughly; (2), dissolve the salt and sulphate of zinc in the two gallons of water; pour (2) into (1) and add (3). Mix thoroughly. Two pounds of flour paste (dissolve in two gallons of hot water) may be added instead of the skimmed milk.

38. Lasting Whitewash

The formula 35 is perhaps the best tree whitewash, but where one wants one quickly made which is fairly durable, it may be made simply of quick lime, water and salt.

Quick lime	5 pounds
Salt	½ pound
Sulphur	¼ pound

Slake the lime slowly with water and add the salt and sulphur while it is boiling. Add enough more water to make a good wash.

39. Tree Barriers

Use the commercial tree tanglefoot, or if preferred mix as follows:

Mix with a gentle heat one pound of resin and one gallon of castor oil, and when cold thin as desired with more castor oil. One of the best ways to apply it is to saturate a piece of baling rope with the well thinned mixture and tie around the trunk of the tree. This will remain sufficiently sticky about ten days, as long as anything of the kind we know of. A strip a few inches wide surrounding the tree trunk, placed in the fall and tended during the winter will prevent the ascent of the cankerworm moth. Placed in hop vines it prevents ascent of the hop flea beetle. Will bar Argentine ants or most other insects that reach the foliage by crawling only.

Cotton Bands. A four inch strip tied around the tree by a string at the lower edge, and the top then pulled down over the string is in use against Fuller's rose beetle on the orange, and other beetles and worms.

40. Asphaltum

Melt asphaltum and paint while

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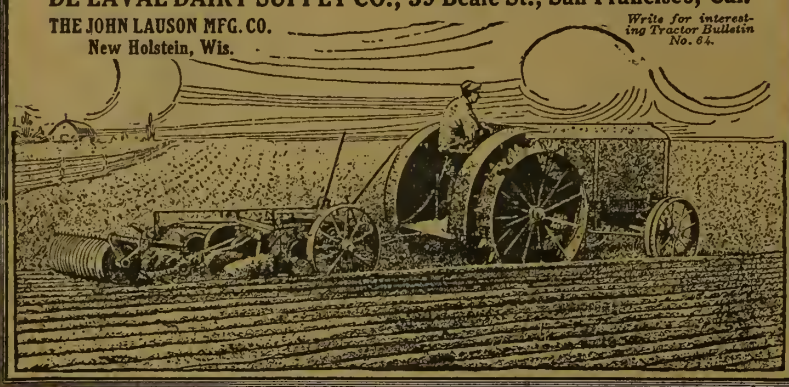

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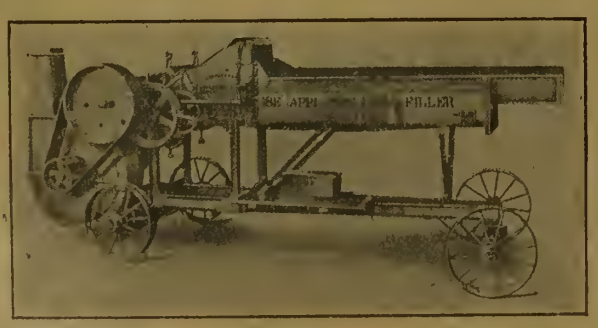

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heated in four inch strip around crown of tree, clearing away soil six or eight inches. The ground should be cleared and afterwards filled back against the asphaltum.

41. Potato Bait

Wireworms which have become a serious pest in bean fields and with many of the garden or truck crops may be controlled to an extent by placing potatoes in the hill with the beans. After a few days these are lifted and the wireworms which have been attracted to the potatoes may be shaken into oil or other liquid and destroyed. The potatoes are located by cloth which is attached and shows above surface of the ground. It is claimed the cost of this treatment is not over $5.00 or $6.00 per acre.

42. Poisoned Barley

Following is the latest government formula for preparing poisoned barley for California ground squirrels:

Barley (clean grain)	16 quarts
Strychnine (powdered alkaloid)	1 ounce
Bicarbonate of soda (baking soda)	1 ounce
Thin starch paste	¾ pint
Heavy corn syrup	¼ pint
Glycerin	1 tablespoon
Saccharin	1-10 ounce

Mix thoroughly 1 ounce of powdered strychnine and 1 ounce of common baking soda. Sift this into ¾ pint of thin, hot starch paste and stir to a smooth, creamy mass. (The starch paste is made by dissolving 1 heaping tablespoon of dry gloss starch in a little cold water which is then added to ¾ pint of boiling water; boil and stir constantly until a clear thin paste is formed.) Add ¼ pint of heavy corn syrup and 1 tablespoon of glycerin and stir thoroughly. Add 1-10 ounce of saccharin and stir thoroughly. Pour this mixture over 16 quarts of clean barley and mix well so that each grain is coated.

(Caution: All containers of poison and all utensils used in the preparation of poisons should be kept plainly labeled and out of reach of children, irresponsible persons and live stock.)

APPLES, PEARS AND QUINCES

Insect Pests

Aphis, Green (Aphis mali). Apply 9 or 10 just before buds open, if orchard has been badly infested in past years. Apply 29, as soon as the insects make their first appearance.

Aphis, Leaf-Curling (Aphis sorbi). 9 or 10 plus nicotine sulphate, one pound to 100 gallons. Apply when the buds are beginning to open, pink showing in a few blossoms; spray very thoroughly.

Aphis, Wooly (Schizoneura lanigera). Spray with 15 whenever this pest appears above ground. Use at least 150 pounds pressure. For underground forms proceed as follows: Remove soil until upper roots are exposed at the base of the tree. Pour several gallons of 15 or solution of nicotine sulphate around crown and replace soil when it has soaked in. Repeat often.

Bud Moth (Lithophane antennata). Use 9 or 10 in winter and 17 before leaf buds open and after blossoms fall. Repeat every ten days if necessary.

Brown Apricot Scale (Lecanium corni). Apply 13, 14 or 15 just as soon as leaves fall. Applications should be made before December 1.

Canker Worms, Fall Canker Worm (Anesopteryx pometaria Harris). Spring Canker Worm (Paleacrita vernata Peck). Apply 19 when worms first appear. Spray as often as needed. Tanglefoot bands on the trees are very effective in keeping the caterpillars from the trees.

Codling Moth (Cydla pomonella L.). Apply 18 or 19. Continue to spray at intervals of ten days or two weeks throughout the season (at least four times).

Greedy Scale (Aspidiotus camelliae). Apply 9, 10 or 14 when trees are dormant. This scale seldom needs treatment.

Oyster Shell Scale (Lepidosaphes pomorum). Apply 9 or 10 when trees are dormant.

Pear Slug (Caliroa cerasi). Dust on Paris Green or pyrethrum.

San Jose Scale (Aspidiotus perniciosus). Apply 9 or 10 when trees are dormant. If 9 is used follow instruction of manufacturer, or approximately 1 to 9. Repeat in spring.

Tussock Moth. Spray in full bloom with 20, 6 pounds to 200 gallons, and follow in ten days with neutral lead arsenate, 15 pounds to 200 gallons.

Fungoid or Bacterial Diseases

Apple Mildew. Cut off infested tips both winter and summer, also prune back all twigs somewhat as apricots are pruned. Spray with arsenites and Bordeaux combined.

Bitter Rot (Glomeralla ruformaculans). Apply 1 or 2 (b) at first appearance of rot. Repeat every two weeks if needed.

Black Spot Canker (Myxosporium curvisporum Sacc.). Apply 2 (a) the first and fifteenth of November.

Moss or Lichens. Apply 1 (a), 2 (b), 9 or 10 when trees are dormant.

Pear Blight — No spray effective. The only treatment consists in cutting off blight as fast as it appears. Cut below affected parts so that good live wood is secured. Sterilize implements after each cut by dipping them in 7.

Powdery Mildew (Podosphaera oxycanthae). Apply 1 or 2 (a) when trees are dormant, then 2 (b) during spring and early summer. Remove mildewed tips in winter. Apply 9 or 10 just before buds open.

Sappy Bark. Cut away diseased parts when trees are dormant.

Scab (Venturia inaequalis, Winter). Apply 1 or 2 (b) before buds start. Spray again with 2 (b) as soon as blossoms fall. Repeat several times at intervals of three or four weeks. (This should be done especially if the weather is damp.)

CITRUS FRUITS

Insect Pests

Army Worms (Various species). Apply 21 or 22 under trees; also if they have not already secured access to orchard, surround trees with deep furrow, vertical side toward trees. If cover crops are growing, remove such growths as project up into branches of the trees. Paint tanglefoot bands around tree trunk. (See 39).

Black Scale (Saissetia oleae) Fumigate with 32 during period between September 1 and January 1. Spray young trees with 12 or 14 during the months of September, October and November. Remove nightshade from orchard before fumigation to prevent reinfection. Fumigate also olive trees or oleanders which may be near your orchard.

Chaff Scale (Parlatoria pergandii). Fumigate with 32 at any season.

Coccus citricola. This has become a serious pest in past few years. Treatment given is generally fumigation (Formula 32) though some continue using commercial sprays.

Fuller's Rose Beetle (Pantomorus fulleri). This insect cannot fly and can be kept from the tree by means of tanglefoot bands.

Hemispherical Scale (Saissetia hemispherica). Same as for Black Scale.

Long Scale (Lepidosaphes gloverli). Fumigate as soon as found with 32. Repeat if living forms are found a month later.

Mealy Bugs: Long Tailed Mealy Bug (Pseudococcus longispinus); Citrus Mealy Bug (Pseudococcus citri); Fumigate as soon as found with 32 applied as follows: Give regular dose and at the end of one hour's exposure repeat the dose and expose for another hour, thus making the dose twice 32 and the entire exposure two hours. The state insectary, Sacramento, will distribute colonies of cryptolaemus and other beneficial insects which have proven remarkably efficient in keeping down the citrus mealy bug.

Orange Aphis (Aphis gossypii glover). Spray with 14 or 15 as soon as found.

Purple Scale (Lepidosaphes beckii). Fumigate with 34 as soon as located and repeat in one month if necessary.

Red Scale (Crysomphalus aurantii). Treat same as Purple Scale.

Red Spider (Tetranychus mytilaspidis). Apply finely ground or flowers of sulphur (see 6) if by hand or knapsack type of machine, pure sulphur without diluent such as hydrated lime or kaolin; if by power machine, ¼ lime may be used. Some prefer spraying with commercial lime-sulphur. It is now believed that very light application of the dust, repeated at frequent intervals, gives much better results.

Fungoid and Bacterial Diseases

Brown Rot (Pythiacystis citrophthora). Sow cover crop in orchard. Plow under in spring and cultivate well under the trees. In fruit washer use 5, bluestone, or permanganate of potash. Eliminate infected fruit and disinfect boxes and picking sacks.

Dieback (Bacterial). Improve physical condition of trees by deeper and more thorough tilling of soil. If excessive applications of nitrogenous fertilizers have been made, discontinue until tree has resumed normal conditions.

Gum disease, formerly considered a physiological trouble, now best treated by raking away dirt from trunk of tree, scraping off all diseased bark or tissue and painting with 3.

Mottle Leaf (Physical). Improve physical condition of tree by deep culture. Make applications of lime and manure to soil. Examine soil as to hardpan, and if it exists, break up if possible.

Smut (Meliola camelliae, Sacc.). A fungous growth caused by honey dew exuded by scale insects, plant lice and white fly. Remove pest and smut will disappear.

Wither Tip (Colletotrichum gloeosporioides, Penz.). Apply 1 or 2 (b) as soon as it appears and repeat as often as necessary.

DATES

Marlatt Scale. (Phoenicococcus marlatti). Dip young plants or spray old ones with a solution of phenol.

Parlatoria Scale. (Parlatoria blanchardi). Most effective treatment burning with gasoline torch.

OLIVE

Insect Pests

Black Scale. Best treatment, fumigation with 32 October-January. If sprayed use 12, 13 or 14. Annual spraying not effective. When young insects appear in large numbers on leaves and stems apply spray. Two or three sprayings may be necessary in some years; in others none.

Twig Borer. (Polycaon confertus). Cut off twigs and prune.

Fungoid and Bacterial Diseases

Dry Rot of Fruit. Keep trees free from other pests, well pruned out so as to admit light and air.

Olive Knot. A bacterial disease in the form of a woody tumor. Attacks most vigorous trees. Distributed principally by pruning tools. After pruning dip tools in 7. Cut off all tumors, removing the entire twig when possible, and burn.

Peacock Leaf Spot. (Cycloconium oleaginum). Fungus on leaves and fruit. Spray with 1 or 2 (a).

PEACH, NECTARINE AND APRICOT

Insect Pests

Aphis, Black Peach (Aphis persicaeniger). For those above ground use 29. Destroy the underground forms by pouring carbon bisulphide into holes in the ground (made by a crowbar) six inches to six feet away from the tree and about two feet apart. Pour 15 around base of tree often.

Apricot Scale (Eulecanium armeniacum). Apply 13, 14 or 15 just as soon as the leaves fall. All applications should be made before the first of December.

Black Scale (Saissetia oleae). Same treatment as Apricot Scale.

Borer, Peach Tree (Sanninoidae pacifica Riley). Dig out and kill, or destroy by inserting a flexible wire into their burrows and apply 37, 38 or 40.

Bud Moth (Lithophane antennata). Use 9 or 10 during winter months when tree is dormant. Use 18½ just before leafbuds open and just after blossoms fall. Repeat every ten days if necessary.

San Jose Scale (Aspidiotus perniciosus). Spray with 9 or 10 when trees are dormant.

Twig Borer (Anarisa lineatella). Spray with 9 or 10 when buds are swelling.

Fungoid and Bacterial Diseases

Blight, Peach (Coryneum beyerinkii). Spray last of November or before December 15 with 1 or 2 (a) or 9 or 10.

Curl Leaf (Exoascus deformans, Fuckel). Spray thoroughly with 1 or 2 (a) in spring before blossoming. Later sprayings should be made with 2 (b).

Shot-hole Fungus (Coryneum sp.). Spray with 1 or 2 (a) about ten days before buds open and with 2 (b) when fruit is about one-fourth grown.

Diseases such as little leaf, exanthema, dieback, mottled leaf, rosette, bitter pit, dry rot, blossem-end rot in which the cause is not known and which seem unlike the usual effects of unfavorable conditions or parasites. Most of these troubles show a relation to soil conditions and occur especially in dry, sandy, gravelly, or hard pan soils, those very deficient in humus, or under conditions of irregular soil moisture. Trees standing over old barnyards or corrals or where excessive amounts of manure have been applied are also likely to show some of these conditions. The best possibilities of treatment lie along the line of increasing the humus content of the soil by means of green manure crops and mulches, breaking up all hard pan and plow soles, more careful irrigation to insure the maintenance of a proper and uniform moisture condition of the soil down to a depth of several feet, and throughout the season until rains occur, and planting of alfalfa in orchards where plenty of water is available. The soil in areas where these troubles occur should be examined for alkali or other injurious substances. Where any of these diseases are serious and persistent it may be better to grow some other crop than to keep on with one which is seriously affected.

CHERRIES, PRUNES, PLUMS

Insect Pests

Cherry Slug (Caliroa cerasi). Feed upon the upper surfaces of the leaves exposing the veins. Spray with 18½ or 19.

Prune Aphis (Aphis prunifolii). Spray in the fall with 9 or 10 and as soon as the lice appear with 29.

Black Peach Aphis (Aphis persicaeniger Sm.). See same under Peach.

California Peach Borer (Aegeria opalescens). See same under Peach.

Canker Worm (Paleacrita vernata and Alsophila pometaria). See under Apple.

Tent Caterpillar (Malacosoma disstria). See under Apple.

Brown Day Moth (Pseudohazis eglanterina). Attacks particularly the prunes and cherries. Spray with 18½ or 10 or apply 21 under tree.

Red Hump (Schizura concinna). Spray early with 18½ or 19. Burn cocoons.

Fungoid and Bacterial Diseases

Brown Rot or Fruit Mold (Sclerotinia fructigena Sch.). Produces a rot on the fruit. Spray with 1 or 2 (a) early in the spring, and with 2 (b) as soon as the buds begin to open.

Leaf Curl or Witches Broom (Exoascus cerasi Fuckel). Cut out and burn infested parts. Spray with 1 or 2 (a) early, and with 2 (b) as soon as the buds begin to swell.

Leaf Spot or Shot Hole Disease (Cylindrosporium padi Karst). Produces a shot-hole effect upon the leaves. Spray in early spring with 1 or 2 (a), when the buds begin to open with 2 (b) and when the fruit is one-fourth grown with 2 (b).

Powdery Mildew (Podosphaera oxycanthae DC.). Appears on the leaves late in the season. Spray as soon as found with 26 and repeat if necessary.

Crown Gall (Pseudomonas tumefaciens Erw. Smith and Town). If on young trees recently set from nursery, remove and burn. If the bearing trees, chisel away until only the healthy wood remains. Paint with 3. Watch for a reappearance and treat as before.

Gummosis. Dig out the gum pockets and wash out with 1, 2 (a) or 3.

NUTS

Insect Pests

Aphis. Walnut aphis has developed as a major pest within the past two years. Its successful handling is largely in the hands of the professional. Dusting with nicotine sulphate diluted with kaolin or hydrated lime is the usual practice. This business has developed until the Walnut Growers' Association has a plant for the mixing of these substances which are applied with large powered blowers or dusting machines. For the small grower who wishes to treat immediately apply 30.

Red Spider of Almonds. Apply 9 or 10 summer mixture, or, perhaps better, 6.

Codling moth of walnut. Apply 31.

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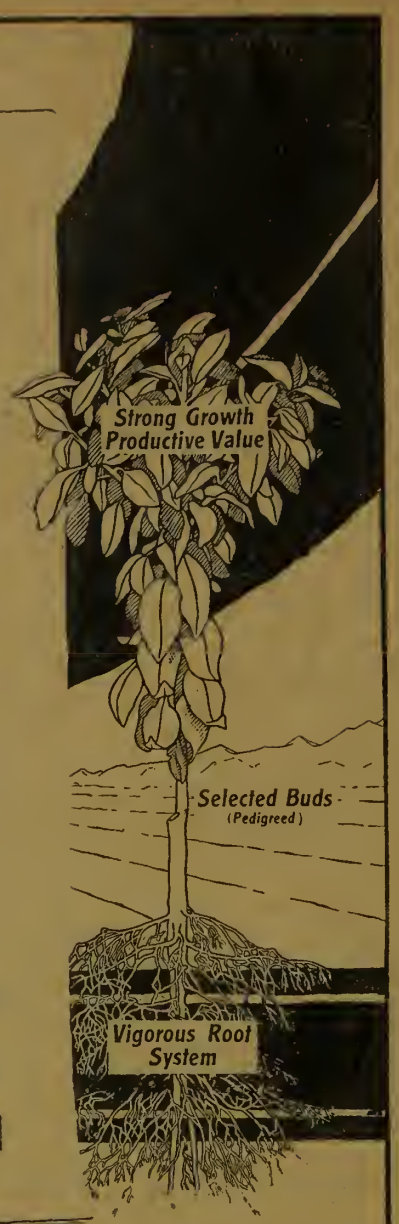

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Fungoid and Bacterial Diseases

Crown Gall. If young trees, dig up; if older, chisel to healthy wood and paint with 2.

Dieback. Physical disturbance. Correct soil conditions.

Blight. Sprays ineffective. Plant resistants.

GRAPE

Insect Pests

California Root Worm (Adoxus obscurus L.). A black beetle whose larvae attack the leaves, stems, petioles, roots and fruit of the vines. Cultivate deeply around the base of the vines. Spray with 18½ or 19 as soon as beetles appear.

Erinose (Eriophyes vitis). This so-called disease is produced by a small mite, which is characterized by forming swellings upon the upper surfaces of the leaves. Dust plants lightly with 6 when they are wet with dew.

Flea Beetle (Haltica carinata Germ.). It infests the foliage and may be handled by spraying liberally with 18½ or 19.

Grape Leaf Folder (Desmia funeralis Hub.). The larvae roll themselves up in the leaves which they eat. Spray with 18½ or 19.

Grape Phylloxera (Phylloxera vastatrix). Attacks roots and foliage of the vines. Plant resistant stock. Be sure of your nursery stock. When possible long continued flooding of fields is beneficial.

Grasshoppers. (See under Beans).

Hawk Moth (Philampeles achemon Drury). The large green larvae of this moth feed upon the foliage. Hand pick, or if too numerous spray with 18½ or 19.

Nematode Root Gall (Heterodera radicicola Mull.). A minute worm attacking the small roots. Destroy all infested vines. Sterilize soil with heat or 33. Plant only hardy varieties where this exists.

Vine Hopper (Typhlocyba comes Say). Infests foliage of the vines. Use hopperdozer in spring before adult females deposit their eggs. Spray as soon as the young begin to appear with 13, 14 or 15.

Fungoid and Bacterial Diseases

Powdery Mildew (Uncinula spiralis and Uncinula necator Schw.) Grows upon the canes, leaves and fruit. Dust often with 6 as soon as the disease appears. Spray early with 1 or 2 (a).

Downy Mildew (Peronospora viticola DB.) Attacks all green portions of the plant — leaves, young shoots, and berries. Spray with 1 or 2 (b) as soon as first appearance.

BLACKBERRIES, RASPBERRIES, LOGANBERRIES, STRAWBERRIES

Insect Pests

Rose Scale (Aulacaspis rosae Bouche). A white scale thickly infesting the canes just above the surface of the ground. Spray with 13, 14 or 15.

Strawberry Plant Louse (Myzus fragaefolii Ckll.). A light yellow louse attacking the buds, blossoms and young fruit. Spray with 13 or with 15.

Fungoid and Bacterial Diseases

Orange Rust (Gymnoconia peckiana Tranz.). Forms orange-red colored masses on the leaves, which finally kill the plant. Dig out and burn all diseased plants as soon as rust first appears.

Leaf Spot on Blackberry and Raspberry (Septoria rubi West.). Produces small pale spots on the leaves. Spray with 1 or 2 (b) when leaves are half grown and repeat every two weeks if necessary.

Leaf Spot of Strawberry (Mycosphaerella fragariae Lind.). This disease first appears as small discolored spots upon the leaves which destroy the tissues of the plant. Spray before the flowers open with 1 or 2 (b). If the disease appears late, mow off and burn the leaves. Spray the newly appearing leaves with 1 or 2 (b).

Powdery Mildew of the Strawberry (Sphaerotheca humuli). Produces a whitish powdery covering on the foliage which soon kills the plant. Dust with 6.

Crown Gall (Pseudomonas tumefaciens Erw.). Affects, especially, the blackberry. Dig vines as soon as this trouble appears; there is no cure. Secure new, clean stock and plant on fresh ground.

CURRANTS AND GOOSEBERRIES

Insect Pests

San Jose Scale (Aspidiotus perniciosus Comst.). A small scale infesting the stalks. Spray when dormant with 9 or 10.

Currant Stem Borers (Sesia tipuliformis and Chrysobothris femorata). Small white larvae which bore into the stalks of the plants. As a preventive, wash plants in the spring with strong soap solution.

Imported Currant Worm (Nematus ventricosus Klug.). Attacks the leaves in the spring. Dust plants with white hellebore when they are wet, or spray with 15.

Leaf Hopper (Empoasca albopecta Walsh). Usually appears in great numbers on the undersides of the leaves. Spray with 13 as soon as the first ones are noticed.

Currant Leaf Louse (Aphis ribis). Usually works upon the ends of the tender shoots and stunts their growth. Spray with 13 or 15.

Fungoid Pests

Leaf Spot (Septoria ribis Desm.). Produces large pale spots with brown borders upon the leaves. Spray with 1 or 2 (b) as soon as first spots appear and repeat as often as is necessary to keep down the disease. Spray with 2 (b) twice after fruit has been removed.

Anthracnose of Currant (Pseudopeziza ribis Kleb.). Produces small brown spots upon the leaves, petioles, young canes, fruit stalks and fruits. Spray with 1 or 2 (a) before leaves appear and with 2 (b) while leaves are unfolding and repeat every three weeks until fruit ripens.

Gooseberry Mildew (Sphaerotheca morsuae B. & C.). Produces a mildew upon the stems, leaves and particularly upon the berries, causing them to spoil. Spray with 2 (b) just as the buds are breaking open and repeat every 12 days until about July 1. Spray plants in winter with 9 or 10.

PEAS, BEANS, VETCH, CLOVER, ALFALFA

Insect Pests

Alfalfa Weevil. Not yet in California. About the only treatment is dragging the field with brush drag. The fight is still with the California plant quarantine officers.

Wireworms (Various species). Affect beans and many other garden plants. Rotation of crops to starve out the infestations is perhaps the best treatment. Where this cannot be done, the use of carbon bisulphide in sandy ground is advised. Fertilize with nitrate of soda or kalnit. Also use 41.

Bean Aphis (Aphis rumicis L.) Works on the leaves, young shoots and tender pods causing much damage. It is usually cared for by an internal parasite and by a predaceous ladybird, (Scymnus sordidus), but if it becomes too destructive spray with 13 or 15.

Green Pea Aphis (Nectarophora destructor Johns). Also attacks ve geraniums, malva, and many other plants. Spray with 13 or 15.

Cut Worms (Peridroma saucia, Agrotis ypsilon). Do great damage to all crops at certain seasons. Plow around field so as to have straight side of furrow next to the crop. Poison with 21 or 22.

Grasshoppers (Various species). Are very difficult to handle. Poisoned baits as given in 21 or 22 have given good results. Fall plowing of breeding grounds essential.

Bean Weevil (Acanthoscelides obtectus Say). Pea Weevil (Lario pisorum L.). Fumigate seed with 33 and be sure that no infested seed is planted. Test by placing in water; infested seeds will float.

Fungoid and Bacterial Diseases

Beau Anthracnose (Colletotrichum lindemuthianum B. & C.). Produces brown sunken areas upon the pods. It also attacks the young plants. Treat seeds with 8 before planting. Spray with 1 or 2 (b) as soon as young seedlings are well under way. Repeat if necessary. Practice clean cultural methods.

Bean Blight (Bacillus phaseoli). Attacks pods and produces wrinkled and distorted seed. Treat seed with 8 before planting.

Rust (Uromyces appendiculatus Lev.). Produces rust colored spots on

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foliage. Spray with 1 or 2 (b). Burn all infested plants.

Downy Mildew (Phytophthora phaseoli Thax.). Turns foliage dark and causes it to wilt and die. Select clean seed. Spray with 1 or 2 (b).

Downy Mildew of Alfalfa (Peronospora trifoliorum). Spray with 1 or 2 (b) or dust with 6.

Pea Mildew (Erysiphe polygoni DC). Appears early and late, covering plant with a white felt-like powder. Spray with 1 or 2 (b) or dust with 6.

Dodder. Dodder usually comes because of infested seed at planting time. However, where irrigation waters are from gravity flow from mountain streams the seed may be introduced by them. Where patches appear in alfalfa burn by piling straw over infested spot or use gasoline blast torch. Keep close watch and destroy every portion of the vine as soon as it appears. Where appearing in grapevines or trees a measure of control may be had by spraying with 2 (a) in winter time and when trees are in leaf 2 (b).

ONIONS, LEEKS, GARLICS, ETC.

Insect Pests

Onion Thrips (Thrips tabaci Lind.). Attack the leaves and flowers causing considerable damage in some localities. Spray with 13 as an insecticide and with 1 or 2 (b) as a repellent.

Cutworms. See Beans, Peas, etc.

Fungoid Diseases

Downy Mildew (Peronospora schleideniana DB). Produces a white mould on the leaves causing them to wilt and die. Spray with 1 or 2 (b).

Onion Smut (Urocystis cepulae Frs.). First appears in the form of dark spots upon the leaves and later as longitudinal rifts upon the bulbs. The following drilled into the soil at the rate of 150 pounds per acre has given good results: lime 50 pounds mixed with sulphur 100 pounds. Also treat seed with 7 or 8 as they are being drilled into the soil.

CABBAGE, CAULIFLOWER, KALE, TURNIP, RADISH, MUSTARD

Insect Pests

Harlequin Cabbage Bug (Murgantia histrionica Hahn). Attacks all cruciferous plants, cultivated and uncultivated, as well as many other hosts. It is no little difficulty to keep these insects from taking a crop, but by observing the following they may be held in check: keep weeds from the field at all times; plant late trap crops of kale or cabbage and burn them when they become infested, or kill the bugs with pure kerosene. Hand pick adult insects as soon as they first begin to appear. Spray with 13.

Cabbage Aphis (Aphis brassicae). Attacks a wide range of cruciferous plants, cultivated and uncultivated. In time, it is subdued by parasitic and predaceous enemies, but often not until it has done great damage. It can be controlled by spraying with 13 or with 40 per cent nicotine sulphate, 1 pound to 100 gallons.

Cabbage Worms (Larvae of Pieris brassicae, the Large White Butterfly, and of Pieris rapae, the Small White Butterfly). These green worms do great damage by destroying, for market, great quantities of cabbage and cauliflower. The state insectary is at present propagating a very efficient parasite which destroys the chrysalid of this insect. As an insecticide apply 13.

Cutworms. (See under Beans, Peas, etc.)

Fungoid and Bacterial Diseases

Club Root (Plasmodiophora brassicae Wor.). A disease producing a peculiar enlargement of the roots giving the plants an unhealthy appearance and finally causing their death. The disease may be carried over in the soil, so the following has been recommended as a means of control: lime the soil at a rate of 100 bushels per acre, every few years. Rotate crops. Employ clean culture methods.

Black Rot (Pseudomonas campestris Smith). A bacterial disease first producing a burnt margin on the leaves and finally causing them to drop. The disease is readily carried from year to year in the seed. Before planting treat the seed with 7 or 8. Eliminate infected plants as soon as they appear in the beds. Rotate crops.

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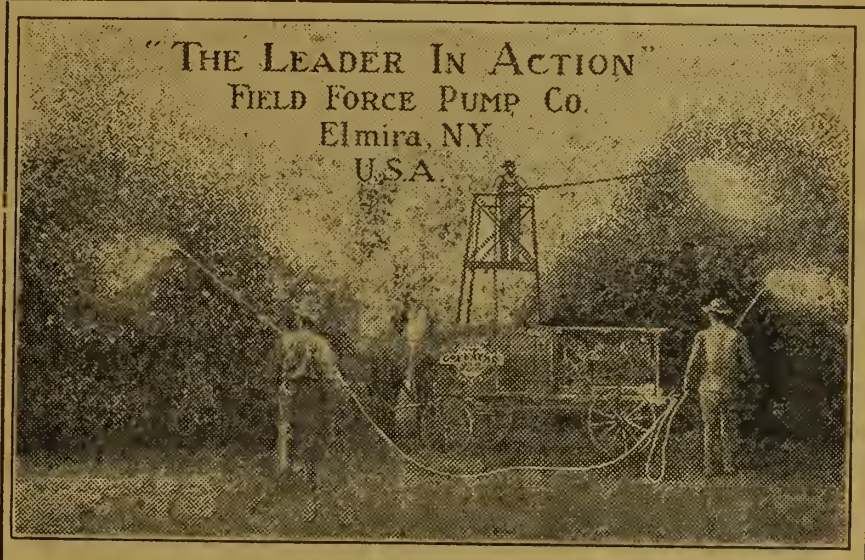

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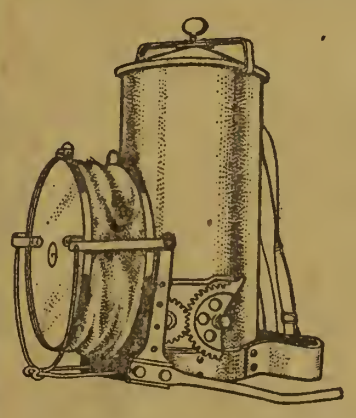

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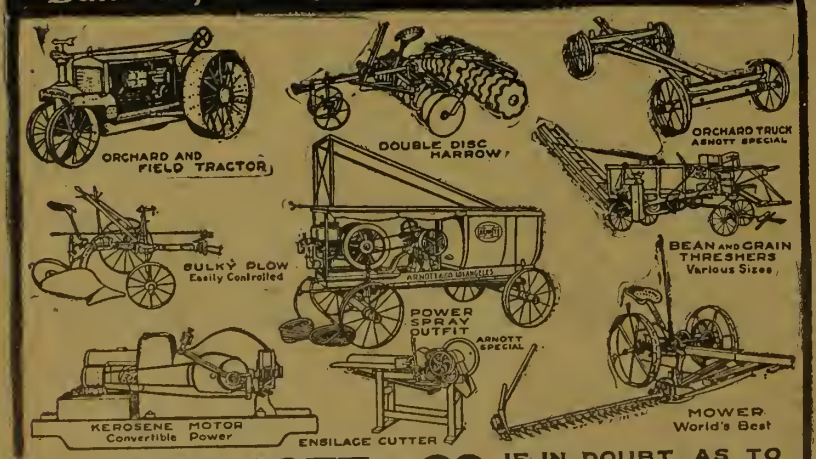

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Buy only Melilotus seed that has a quality tag on each sack. It protects you against the low germination seed so general on the market this season. This seed is above 99 per cent pure and above 90 per cent germination.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

TOMATO, POTATO, EGG-PLANT, TOBACCO, ETC.

Insect Pests

Tomato Worms. (Are the larvae of two Sphynx Moths, Plegethonitus quinquemaculata How. and Plegethontius sexta Joh.) These large green caterpillars feed upon the foliage and are easily recognized. Due to their large size, it is very effective to hand pick the infested area. If very numerous spray with 18½ or 19.

Flee Beetle (Epitrix parvula Fab.). A very small beetle which works on the leaflets. As a repellent spray with 2 (b); for an insecticide 18½ or 19.

Twelve Spotted Cucumber Beetle. (Diabrotica soror Lec.). A small green beetle with 12 black spots on the elytra. The larvae work on a great variety of plants. Spray with 18½ or 19.

Tobacco Worms

Cutworms. (See Beans, Peas, etc.).

Fungoid and Bacterial Diseases

Winter Blight or Downy Mildew (Phytophthora infestans DB.) Attacks nearly all of the plants of this family, killing the leaves and injuring the tubers. Plant clean seed. Disinfect doubtful seed with 7 or 8. Spray plants with 1 or 2 (a) as soon as symptoms first appear.

Root and Stem Rot (Corticium vagum var. solani Burt.). Causes a "damping-off" of seedlings. Also attacks the tubers of potatoes, the subterranean parts of the tomatoes, and the fruits touching the soil. Apply lime to aerate the soil. Rotate crops.

Dry Rot of Potatoes (Fusarium oxysporium Schl.). Wilt of Tomatoes (Fusarium lycopersici Sacch.) and Wilt of Egg Plant (Fusarium sp.). All produce a wilt upon the host plants, affect the roots, and may even cause a "damping-off" of seedlings. Treat seed with 7 or 8 before planting. Keep weeds out of fields in winter. Rotate crops, so as to have clean soil each year.

Early Blight (Macrosporium solani E. & M.). A typical leaf-blight causing brown spots to appear on the foliage. Affects potatoes, tomatoes and daturas: Spray with 1 or 2 (a) when the plants are six inches high and repeat with three applications two weeks apart. Treat seed with 7 or 8 before planting. Rotate crops.

Potato Scab (Oospora scabies Thax.). Produces large rough blotches on the tubers. This disease cannot be dealt with while the plants are growing. Great care must be exercised in the matter of seed selection. Treat all seed of doubtful origin with 7 or 8. Rotate crops so as to keep the soil fresh.

SQUASH, PUMPKINS, CUCUMBERS, MELONS, ETC.

Insect Pests

Melon Aphis (Aphis gossypii Glov.). Attacks all parts of the vines and is usually accompanied by a black smut, which grows upon the honey-dew secreted by the louse. Spray with 13 or 15 or 20.

Cucumber Beetles, Striped (Diabrotica Vittata Fab.).

Twelve-spotted (Diabrotica soror Lec.). The larvae and adults of these beetles destroy flowers and foliage of the plants and gnaw the rinds of the fruit. Methods of control are as follows:

Repellents — Dust with 6 or with Naphthalene. Soak lumps of gypsum in a mixture of kerosene and turpentine and place them under infested vines. Insecticides — Dust with lime and then spray with 18½ or 19.

Squash Bug (Anasa tristes DG.). Hand pick early in the season; also pick off eggs and destroy. Eggs are deposited in clusters on the leaves when the vines are very young. Trap bugs by laying boards loosely on the ground under which they crawl for protection. If very troublesome a repellent of gypsum saturated with kerosene scattered about the grounds is effective. As soon as crop is harvested, gather and burn vines. Do not allow weeds to grow on the ground during winter months.

Fungoid and Bacterial Diseases

Downy Mildew (Pseudoperonospora cubensis Rost.). Disease first appears in the center of the vine and spreads outwardly. Spray with 1 or 2 (b) to which is added one gallon of sulphurous acid to every 100 gallons of spraying material. Repeat every ten days.

Leaf Blight (Alternaria brassicae nigrescens Pegl.). Produces spots on the leaves which spread very rapidly. This disease hastens ripening, injures production, and destroys the quality of the fruit. It particularly affects cantaloupes. Destroy affected plants as soon as they first appear. Spray often with 1 or 2 (b). Rotate crops.

Anthracnose (Colletotrichum lagenarium E. & H.). Forms circular dead spots on the leaves and long shrunken areas on the stems. The fruits of the watermelon are often badly spotted by this disease. Spray with 1 or 2 (b) as soon as fungus appears.

Common Wilt (Bacillus tracheiphilus Erw. Sm.). Produces a sudden wilt of the vines by stopping up the water-carrying vessels of the stems. Destroy infected plants as soon as infection appears.

Fusarium Wilt (Necosmopora vasinfecta var. nivea). Can be handled only by crop rotation.

Powdery Mildew of the Cucumber (Erysiphe polygoni D C.). Attacks other members of this group also. Forms a white powdery coating on the leaves and stems and soon kills the plants. Spray as soon as it first appears with 1 or 2 (b).

CELERY, CARROTS, PARSNIPS

Insect Pests

Celery Leaf-tyer (Phlyctaenia ferrugalis Hbn.). Destroys foliage, and its presence may be told by the many leaves which are curled and fastened together by this insect. It is particularly bad in greenhouses. Spray with 18½ or 19 not later than three weeks before marketing crops, because of the danger of poisoning. Hand pick.

Viridescent Leaf-hopper (Empoasca viridescens Walsh). Use hopperdozer in large fields or spray as soon as insects first appear with 13.

Cutworms. (See Beans, Peas, etc.)

Fungoid Diseases

Celery Blight, Early Blight (Cercospora apii Fr.). Produces spots upon the leaves causing them to turn yellow, to wilt, and finally kills them. This disease also affects parsnips, and usually oppears early in the season. Spray early and repeatedly with 1 or 2 (a).

Late Blight (Septoria petroselini var. apii B. & C.). Produces rusty brown spots upon the leaflets which may rapidly spread to cover the entire foliage. Spray with 1 or 2 (a) throughout the season.

ASPARAGUS

Insect Pests

Asparagus Beetle (Crioceris asparagi L.). Dust air slaked lime upon the plants when they are wet with dew. Apply dry lead arsenate or 18½ or 19. As a repellent spray with 28.

Fungoid Diseases

Asparagus Rust (Puccinia asparagi DC.). Attacks the bushy tops, producing black and red rust, the latter being the destructive stage. Keep the plants cut back until July 1. Apply dry sulphur three weeks after cutting tops and before rust appears. Make the applications in the morning when the plants are wet with dew, or first spray with 1 or 2 (b).

CORN, SORGHUM

Insect Pests

Corn Worm (Chloridea obsoleta). Is hard to deal with because it works on the ear in the husk. It is best handled by the rotation of crops, late plowing followed by harrowing to destroy the pupae in the soil, and by planting crop as early as possible to assure rapid growth. Dust with dry lead arsenate. (See 18½).

Corn Root Aphis (Aphis maidi-radicis Forbes). Attacks the roots causing a dwarfing of plants in patches over the fields. Crop rotation is the most important method of control. Stir old corn ground thoroughly before planting it again to corn.

Wireworms (See under Beans).

Fungoid Diseases

Smut (Ustilago zeae Ung.). Causes enormous enlargements of the kernels, producing large sacs of smut. Cut off and burn the first infestations. Treat seed with 7 or 8 before planting. Rotate crops.

Wilt of Sweet Corn (Pseudomonus stewarti Erw. Smith). Plants die by wilting due to the shutting off of the water supply. Select resistant stock. Treat seed with 7 or 8 before planting. Rotate crops.

GRAIN

Rust. No remedy. Some varieties are more resistant than others.

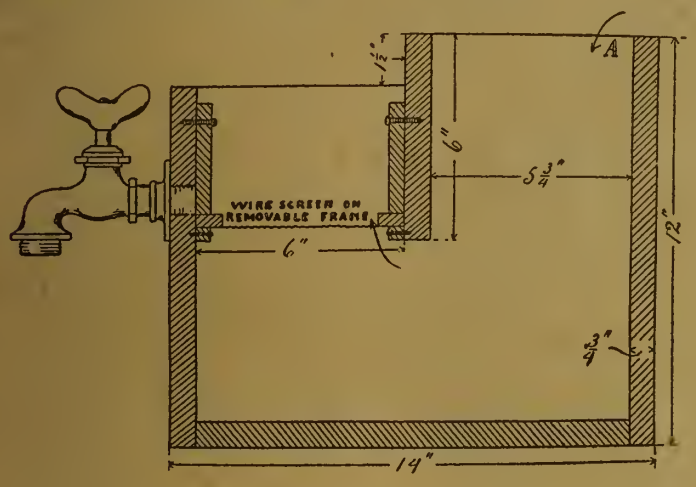
Smut. Seed grain should be carefully cleaned of smut balls, weed seeds and small cracked and inferior grains before treating. The smut balls in wheat and smut masses in barley may be cleaned out in fanning mills or floated out in water and skimmed. Place the cleaned seed in half-filled sacks tied at the end. Immerse these sacks for three or four minutes in a bluestone solution, 4 (a). Drain the sacks until dripping no longer occurs, then dip them for three minutes in 4 (b). The lime prevents injury to the germ from the bluestone.

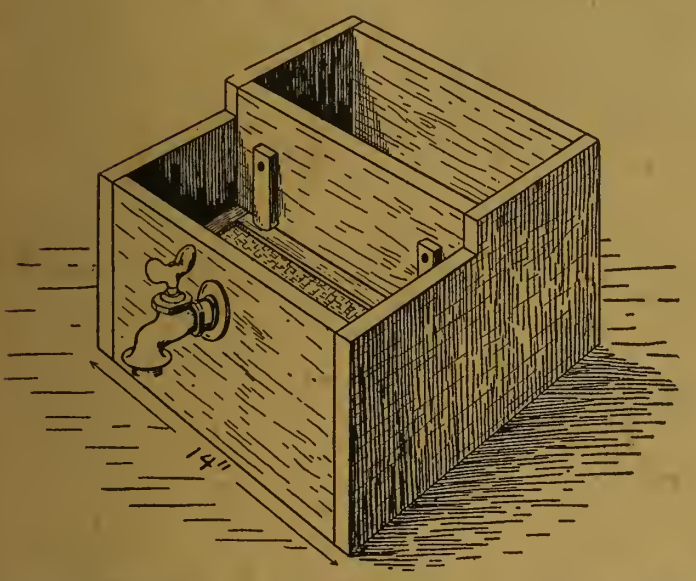
IN THE INTEREST OF COOPERATION

A program is being arranged for a meeting to be held at Santa Ana opera house on Wednesday evening, August 13, to discuss matters of cooperation. The meeting is being encouraged by bankers and business men of Orange County with the idea of securing for producers better returns for their crops and of inducing more general cooperative spirit. Mr. Cruickshank, an Orange County banker, C. C. Teague of Ventura and others will address the meeting. Those interested in the marketing of apricots, prunes, beans or other crops are joining in planning for the meeting.

LIQUID GAS

The longest step forward in securing efficiency and economy in fumigation of orchard trees is made possible by liquid gas. This gas in liquid form is made a commercial possibility through the investigations and experiments by Dingle Brothers of the Owl Fumigating Company. These men have persisted in the effort to better fumigation methods, being the first to bring out the machine for generating the gas and killing the scale with greater efficiency and economy than with the old method of manufacturing the gas in earthen vessels under the tent. But even the machine method of gas generation had its defects, one being in the high grade or quality of chemicals required. Hence the effort to manufacture this gas from cheaper materials in the factory where its purification is possible, and where it may be reduced to a condition in which it is portable and in which it may be used with safety. In this the Dingles have succeeded and are today completing a large plant at Azusa and are now prepared to deliver a 96 to 98 per cent pure article to the orchards in any quantity desired.





Stewart's strainer. The sediment collects below the screen instead of on it and does not fill up the screen

Strainer For Bordeaux or Solutions Where There Is Sediment

The solution is poured in at A and the clear liquid rises through the strainer instead of clogging or filling screen with settlings.

If quicklime cannot be secured, air-slacked lime, 1 pound to 8 gallons of water, may be used. After thus treating, the grain should be spread out to dry, after which it may be planted or stored.

Oats are especially sensitive to bluestone and in this case it is better to use a solution of formaldehyde, 1 pound to 40 gallons of water, for ten minutes, after which no lime dip is needed. Barley is more sensitive than wheat and should always be lime-dipped after treatment with bluestone.

BEETS

Curly Top (Blight). Plant as early in season as soil can be properly prepared and good germination and growth obtained. This varies in different districts from December 1 to March 1, according to temperature and rainfall. Finish thinning before hot weather. Irrigate early, and often enough to prevent wilting during spring and summer. The disease need not be feared unless the insect Eutettix tenella is abundant.

Seedling Root Rot. Replant if stand is too thin.

Wireworms. Plow in fall to destroy pupae. Plant early and practice clean culture. Trap adults by means of piles of straw and burn in late fall or winter.

A cannery for San Jacinto next season is being discussed.

Members of the Arlington Poultry Association picnicked recently at Fairmount Park. An interesting meeting was held to discuss cooperative plans of marketing.

The San Dimas marmalade factory is again open for operations after a short time when it was closed for repairs to machinery and equipment.

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Purity 99.35% Lowest Germination 90.20%
Found free from the following noxious weed seeds:
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SECURITY KANT-WOBBLE LADDER

I ship on approval, you pay when you have examined ladders closely. I even pay the freight to make it easier for you to get first hand acquaintance with this best of all orchard ladders. This is the ladder whose steps are held in a GRIP OF STEEL, making it strongest where other ladders are weakest. Built for strength, combined with lightness; and PAYS FOR ITSELF by cutting your picking cost. Send your order for two or more ladders shipped prepaid on approval at following prices: 8 ft. ladders $5; 10 ft. ladder $6; 12 ft. ladder $7.20. Write now—a post card will do.

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80 Franklin St. Oakland, California

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Dry or Dust Process

By John S. Davis

IN the study of the protection of plants from insect depredation, attention is drawn to the curious fact that practically all recent developments in insect control have been in the perfection of formulas and method of application for dry or "dust" insecticides.

Notable, among the most recent, is the experimental and practical work of Prof. Ralph E. Smith, in cooperation with the Walnut Growers' Association. This cooperative effort has resulted in the perfection of a dust formula far superior to anything heretofore known for the destruction of the aphis. Further experiment is being made in the perfection of a formula for the control of codling moth. Present indications point to complete success in this work.

Dry sulphur has been used with varying success for many years in the control of red spider. Many combinations, such as sulphur and hydrated lime have been tried, with results offering little encouragement. Experiments of the past year or two however demonstrate that the use of diluents is a clear waste of time and material. Hydrated lime was used principally for the purpose of causing more sulphur to adhere. An excessive quantity of sulphur does not kill. But sulphur gives almost perfect results, if it be applied properly and with sufficient frequency. In fact, the frequency of treatment is the real key to success; that, and the fineness of the sulphur. Sulphur should be applied very sparingly, or thinly; but thoroughly covering every portion with this very fine thin deposit of pure sulphur, so thin and fine as to be almost invisible. A dosage of from 8 to 10 pounds per acre of bearing orange tree is ample if properly distributed; and, by repeating these dustings four or five times, at weekly intervals, practically complete cleanliness is secured.

This is true economy. A clean grove is a productive grove, and pest protection means increased yield.

"Economy and protection" may be called the watchword of the dry, or dust, system. With one man treating from 15 to 20 acres per day, and using only 10 pounds of sulphur, comparatively the cost of protection is so insignificant as to be negligible, and the results are said to be practical eradication.

Under this head it would seem well to call the attention of the growers to the crying need for the control of the fall attack of spider. As this late attack occurs at a time when neither crop nor tree are injured appreciably, most growers are inclined to disregard it on the ground that "no harm is done." Herein lies a great mistake. This fall visitation is largely responsible for the supply of spider the following spring. Consequently, every spider killed in the fall means a proportionate decrease in the spring attack; and, as before stated, the cost of protection is so slight as to be almost negligible.

A Small Duster In Action

A most economical way of sulphuring or applying other dust remedies to orchard trees and vineyards.

PESTS OF THE GARDEN

By Ernest Braunton

The most serious flower trouble in California is mildew on roses. The best means of combating it is to keep it away. But few varieties of roses are afflicted with mildew if in good health and soil conditions are correct. But there are a few sorts that need nothing more than a few days of unfavorable weather to become thoroughly covered with mildew.

Mildew on Roses

The fight in the garden should be to avoid extremes and sudden changes, just what the orange grower should guard against to prevent June drop. If roses are watered at night during the mildew season they are cold and wet until sunshine next day. About noon the vines or bushes are hot and dry, just the reverse of night conditions; yet in the evening you again water them. This is all wrong for winter treatment. Equalize conditions as much as possible by leaving them dry and warm during the night. Water in early morning and by night, if the day be bright soil and air will be warm as possible. Roses are often affected with mildew because a daily spray of water is given to wet the surface soil while the plant is actually dry at the roots a few inches below the surface. Irrigate heavily and sufficiently. Good drainage is also essential to successful rose growing. (See Formula 6).

Other Rose Troubles

In some countries roses have many

As the result of FIELD tests covering a period of three years we are able to report on

OLENE

The Citrus Spray

as

Economical

Applied at about one-half the cost of other methods.

Successful

For the control of Citrus Scales, Thrips, Mealy Bug, Aphis, Black Fungus and the stimulation of growth.

Convenient

Daytime application.
Any time of year.
Easy and safe to handle.

ZENO

The Deciduous Spray

successful for 10 years

In controlling Scale, Thrips, Aphis, Mealy Bug, Red Spider, Moss, Lichen and Plant Stimulation in general

NOTE

Both Olene and Zeno are the result of the research of 15 chemists, 12 entomologists, 960 experiments, ten years of labor; many failures, much discouragement, steady persistency, great confidence. Write to us for Bulletins and Booklets on the uses of Olene or Zeno, and name of your nearest agent.

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troubles, but in California they are few. Aphis or plant lice are next to mildew in importance, followed by the rose or orange rust and Fuller's rose beetle. Aphis are easily destroyed by any contact spray, even driving them off the plants with a strong force of water will keep them well in control. Bordeaux mixture or any fungicide will destroy the rust. The writer has never known the rose beetle to be serious, but arsenate of lead, three pounds to 50 gallons of water, is recommended as a spray, and this is also the best for the diabrotica or "green lady bug" which is the worst pest in the writer's garden on flowers. The white rose or berry scale is sometimes troublesome and kerosene emulsion is a good remedy. These bugs are either striped or spotted and usually known as squash bugs or cucumber beetles.

Red Spider

At times red spider will attack nearly all sorts of plants and unless checked does most serious damage. Near the coast, where the air is damp there seldom is any sign of red spider, but in dry atmospheres its ravages are considerable. Gardeners seldom employ other means of riddance than frequent sprayings with the garden hose, but should other means be found necessary the measures taken by citrus growers for suppression of red spider should be used.

CARBON BISULPHIDE IN GROUND SQUIRREL CONTROL

CARBON bisulphide applied to ground squirrel burrows when the ground is fully saturated with moisture, is the most satisfactory material to use. Wasteballs soaked in this liquid are sufficiently loose to allow evaporation of the carbon bisulphide. Diffusion is thereby accomplished, after which the gas can be exploded in order to force the products of such combustion to the further recesses of the burrow. Every burrow must be treated with one soaked wasteball and, following the explosion, be covered with one or more shovelfuls of earth. This earth covering must be tightly tamped. Exploding is accomplished with a match or torch after allowing from four to ten minutes for vaporization of the carbon bisulphide, depending upon the temperature and weather conditions. On a cold, foggy day, eight to ten minutes should elapse before exploding.

Carbon bisulphide is most easily handled in an open pail. Fill the pail about three-fourths full of the liquid carbon bisulphide and place in same enough jute wasteballs to be covered by the liquid. To prevent evaporation, a thin film (one-quarter inch) of water can be poured over the carbon. Each wasteball holds enough carbon bisulphide which when vaporized and mixed with air, forms a gas of sufficient concentration and strength to kill a squirrel.

Immediately following this treatment every burrow should be sealed with damp earth and very tightly tamped with earth to prevent the gas from escaping. Carbon bisulphide should be used only when the ground is sufficiently damp to prevent the gas from escaping through cracks or porous earth. When properly applied it will produce a killing not approached by any poisoning method. Poison grain is not satisfactory during the winter and spring season when the squirrels can obtain green feed in abundance.

Exceptional precautions must be observed to keep fire away from containers holding carbon bisulphide in view of the extremely explosive nature of the material.

SEED DISINFECTION BY FORMALDEHYDE

"Seed Disinfection by Formaldehyde Vapor" is the title of a recent publication of the United States department of agriculture. It states the following conclusions:

The use of liquids for disinfection is unsatisfactory for many kinds of seeds.

A number of species of fungi and bacteria are killed when treated for two hours with 20 ounces of formaldehyde vaporized under the conditions described.

This same treatment is not injurious to any of the seeds tested.

The experiments completed indicate that the formaldehyde gas treatment is a very efficient means of seed disinfection.

The publication is a reprint from the Journal of Agricultural Research, is written by C. C. Thomas and may be obtained by application to Department of Publications, Washington, D. C.

Don't be Frightened at a Bug that Looks Like This

Of all the specimens sent to the Cultivator for identification none come oftener, unless it be the aphis which smears up many a letter, than katydid eggs. These have a most formidable appearance and many a fruit grower has had a scare thrown into him because they look large enough to eat up a whole tree. While they look more like real scales than the scales themselves do, they are comparatively harmless. However, when in doubt send your specimens to the Cultivator. They will be submitted to experts and will be identified where that is possible.

FUNGOUS PARASITES OF INSECTS

Attempts have been made from time to time to control insect pests through the dissemination of fungous spores, and the results have been variable and generally unreliable.

A recent Parisian publication says that it has been demonstrated that it is not only necessary successfully to disseminate the spores of a given fungus, but also that the prevailing conditions must be favorable for its development. Also it is shown that there are certain stages in insect life history at which the host is more susceptible to infection and that at other times the host is able successfully to resist infection. Various fungi have different methods of infection; some penetrate the integument of the insect; some the digestive tract and some the respiratory system. Epidemics of fungi are almost entirely dependent upon weather conditions, cool, damp weather promoting, and warm, dry weather retarding dissemination.

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OF ALL the motor trucks offered for farmers' use, the **International** should be, and we believe is, the most satisfactory.

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The **International Motor Truck** is built for carrying capacity loads on country roads. It gives satisfactory everyday service, the kind that farmers must have. When an emergency comes — a tough piece of road, a steep hill, a rush trip, a bad day — the **International** has the reserve power, speed, and endurance to carry it through.

Mr. L. C. Henry of Utica, Minn., purchased an International Motor Truck to haul his live stock and farm produce to market and to bring return loads from town. He says, "We use the truck for nearly every kind of hauling. It saves more time than any other machine in our farm service." Five of Mr. Henry's neighbors bought International Motor Trucks when they learned, from his experience, what a useful economical farm machine he had.

There are four sizes of **International Motor Trucks** — 1,500, 2,000, 3,000 and 4,000 pounds capacity, with bodies suitable for every kind of hauling. We have a dealer, a branch house, or a service station somewhere near you, where the line can be seen, or we will send full information promptly if you will write us.

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Rakes
Combination Side Rakes and Tedders
Sweep Rakes Stackers
Combination Sweep Rakes and Stackers
Baling Presses
Bunchers

Belt Machines
Ensilage Cutters
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Hay Presses
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Belt Machines—Cont.
Cream Separators
Feed Grinders

Power Machines
Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines
Planters Drills
Cultivators
Motor Cultivators
Binders Pickers
Ensilage Cutters
Shellers
Huskers and Shredders

Dairy Equipment
Cream Separators (Hand)
Cream Separators (Belted)
Kerosene Engines
Gasoline Engines
Motor Trucks

Other Farm Equipment
Manure Spreaders
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Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
Tractor Hitches
Binder Twine

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San Francisco, Cal. Spokane, Wash.

Whitewashing Pruned Trees

IN THE California Cultivator of July 19 I notice what Dr. Whitten has to say about whitewash on young trees. Do you think any harm would result if whitewash was applied with a spray pump to all the branches and twigs on bearing apricot trees? If advisable to make this application in the winter time when trees are dormant what amount of lime could be used in a 200 gallon tank of water, and what other ingredient should be used to insure sticking? I would only consider this as a treatment after lime-sulphur solution had been applied, but not as a substitute for that valuable treatment. Perhaps a good coating of whitewash would make it exceedingly difficult for brown rot, twig blight and shot hole to make an appearance. Two applications of lime-sulphur in one winter might be too severe for the trees. An opinion on the above suggestions would be appreciated.—Subscriber, Vacaville.

As this query mentioned Dr. Whitten's address it was referred directly to him and he answers:

I have tried spraying peach and plum trees, in Missouri, so as to keep the entire tree covered with whitewash during the entire winter, for the past 20 years. It prevented sunscald of the trunks and used on the trunks for that purpose it was a practical success. The whitewash on the twigs reflected the heat on sunny days, holding the buds dormant for a longer time. It delayed bloom from three days to a week (where the twigs were kept thoroughly covered with the whitewash) and lessened injury from frost. The main advantage was not in this slight delay of blossoming, however, but because the buds were held dormant until late winter (six weeks later than on untreated trees), thus preventing weakening of the buds by alternately warming up and becoming tender on sunny days and then freezing at night. It was not adopted as a commercial success, generally, in the Mississippi valley for the reason that winter rains and alternate freezing and thawing necessitated frequent spraying with the whitewash to keep the twigs well coated with it.

Answering more directly the question of L. J. H. Dr. Whitten adds:

No harm will result from spraying the entire fruit tree with lime whitewash, during winter. If sulphur is included (with the slacking lime) the wash will prevent leaf curl of peaches, reduce mosses and lichens, reduce certain species of scale insect and result in cleaner bark of the trees.

The main advantage however is in keeping the buds and twigs dormant for a longer period, providing the twigs are kept thoroughly covered by the wash, to reflect the heat on sunny winter days. This is especially true in the sunny interior valleys. During bright, sunny winter days the coloring matter in the bark of fruit trees absorbs heat from the sun, raising the temperature of the buds and growing layer 15 to 25 degrees above the temperature of the surrounding air. As soon as the sun is down the tree cools rapidly down to the air temperature. Whitewash reflects the sun's rays, keeping the temperature of the tree a degree or two cooler than the air. The buds and tissues of untreated trees become slightly active and tender during sunny days and are slightly injured and weakened by subsequent cold nights. Well whitened trees remain slightly cooler than the air on sunny days, retain their dormant condition and are not tender enough to be susceptible to weakening by following cold nights. The actual winter rest period of the buds is prolonged from four to six weeks by keeping the twigs whitened. That is, the first slight starting into activity (which makes the buds sensitive and tender) is thus delayed. The actual blossoming period is delayed from three days to a week, if the twigs are kept thoroughly white so their coloring matter does not show through.

The writer tried this out in the Mississippi valley for a period of ten years, especially on peach and plum trees. There was less winter killing of the buds and less injury from spring frosts on the treated trees. On two seasons in the ten years good crops were secured on the whitened trees when untreated trees failed. The treatment was not adopted as a general commercial success for the reason that it required frequent application of the wash, which wears off quickly through alternate freezing and thawing, winter sleet and rain and whipping of the twigs in the wind. A thorough white coat must be maintained to be effective.

Whether this method will prove a commercial success, under California conditions, for protecting the buds and twigs can only be determined by trial. It will be of much interest if growers will try it, on a few trees at least. The commercial success of whitewashing the trunks and exposed limbs, especially of young trees, while their bark is thin, to prevent sunscald, where it occurs on the sunny side of the tree, has been proven beyond a doubt at the California experiment station.

A good whitewash, which will stick better than lime and water alone, may be made as follows:

Seven pounds quick lime.
Two pounds common sulphur.
One pound common salt.

Slack the lime by sprinkling it with water (warm water is preferable) and spread on the sulphur and salt as the lime begins to get hot. Add water and stir to keep the lime from "burning" dry. Keep it wet enough to prevent drying (or burning) but do not flood with enough water to "drown" the lime, but slake so as to secure a thin paste (as for mortar) by the time the lime is slaked. The stirring mixes the salt and sulphur with the mass. The heat of the slaking lime acts on the sulphur and salt so as to make the wash stick well to the trees. When the lime is slaked to a thin paste cover it to retain the heat and let it stand for 24 hours. Enough water should be stirred in so the paste will not dry out in cooling. When cooled for use add water enough (about 15 gallons) to make a whitewash as thick as will flow readily through the spray nozzle. Strain (to get out grit that would clog the nozzle) when filling the spray tank.

Prof. Woglum's Method of Poisoning Argentine Ants

The Argentine ant is one of the most serious orchard pests and poisoning is cheapest and most effective "cure." See formula No. 23 which is fed to ants in old spice cans as shown above.

CAROB RICH IN SUGAR

There are two trees of the carob growing in Orange County which made a remarkable showing with regard to sugar content. Fruits from these trees were sent to the University of California by Mr. McDannald of the Orange County Chamber of Commerce, and one known as the Anaheim Library tree showed a sugar content of 44 8 protein 4 8. Another known as the Langenberg showed a sugar content of 30.2, protein 5.7.

Crop Losses

due to exposure of crops to the elements, shortage of labor, inability to reach market at the right time, are conservatively estimated to be 25 per cent of total production.

Such losses would pay for enough Kissel Trucks to get all the fruit to market when it is ripe, all the beans and dried fruit and hay in out of the rain, and meet every other transportation requirement of the farm.

The ownership of a Kissel Truck gives a tremendous advantage to any crop producer.

The time, labor and expense saved in hauling alone soon pays for the truck and those who do commercial hauling earn an average of $25 per day, at a total cost around $10 per day.

The Kissel Truck has a sturdy Kissel built engine, perfected worm drive rear axles, heavy duty front axles, heat treated frame, the all weather cab and large loading space.

Thousands of Kissel Trucks are proving their dependability daily, in all of America's great industries, of which farming is not the least.

There is a size for every farmer who has a transportation and crop loss problem. Kissel Trucks are built in ¾, 1½, 2, 3½ and 5 ton models.

Owning a dependable truck has saved many a crop.

If you have a transportation problem let us figure with you on its solution.

Western Motors Company

Oakland Los Angeles San Francisco

Gilbert Woodhill, Manager

Eleventh and Flower Streets Telephone 60388, Los Angeles

ATTENTION

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LIQUID GAS

For Fumigating

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Owl Fumigating Co.

Phone 562 Azusa, Azusa, Calif.

Save $200,000 on your fumigating bill. Gas guaranteed 96 to 98 per cent. pure. Deliveries anywhere, anytime and in any quantity. Sixty cents per pound at factory.

Don't be misled by false statements.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Taking Water Out of Valley

Can owner of land in a valley develop water thereon and pipe it out to a neighboring valley for his own benefit against the protest of other owners of land and water rights in the valley first mentioned?—Subscriber, Nestor.

The other owners of water rights in the first mentioned valley certainly are entitled to have their rights protected, but as the facts stated in the question are not and in the nature of things could not be stated with sufficient fullness, a definite answer cannot be given. In this state there has been organized a board of water commissioners, among whose duties it is to ascertain the relative rights of various water claimants, to hear the testimony in respect to such and ascertain by their findings the rights of the several claimants to the use of such water. They are also entitled to supervise the distribution of water in accordance with the priority rights of different parties, and after such hearings to make their decree which may be filed in the office of the recorder in each county in which the body of water is situated. It will doubtless be to your advantage to take up your question in that way.

Rights of Survivors of Joint Tenancy

Deeds of community property have been made as joint tenants with right of survivorship, also certificates of stock made out in the same manner, and bank account. In case of the death of either husband or wife would all business and properties be left to surviving party without any administration?—Subscriber, Covina.

As to the real estate, it would be necessary in order to complete the chain of title for the survivor to file a petition to have the fact of the death decreed of record. As to the stocks held under the right of survivorship, the corporation might or might not require the fact of death to be definitely ascertained of record before issuing a new certificate. The bank account could doubtless be drawn out by the survivor. As to any business it would probably be subject to administration. There might be necessity for administration in any case in order to ascertain the value of property transferred in this manner for the purpose of fixing an inheritance tax both to the state and federal government.

Exclusion From Irrigation District

An irrigation district is about to be formed, in which I am located. I do not need this district as I have installed my own private pumping plant, and long since have so graded my land that it can be irrigated only from the center. The irrigation system would require me to scrap my pumping plant and re-grade my land, which would practically destroy my trees. Is there any provision to permit me being excluded from this district? I am located upon the extreme edge thereof.—Subscriber, San Francisco.

There are several different statutes concerning the organization of irrigation districts. To answer accurately it will be necessary to know under which of these statutes the district in question is being formed; in all of them, however, there are provisions for the exclusion of lands, the owners of which do not desire to be incorporated within the district. In several statutes a first step is for the organizers of the district to make a petition to the county supervisors. The supervisors thereupon publish notice of the filing of petition and the day upon which it shall be heard. Prior to that day protest against the inclusion of any described lands may be filed, and the board of supervisors is entitled to make such changes in the proposed boundaries as it may deem advisable. It is usually provided that no lands which will not in the judgment of the board be benefited by irrigation shall be included within the proposed district, which places the decision squarely upon the supervisors acting in judicial capacity; after incorporation of the district some of the statutes provide for means whereby the owner can procure his exclusion. Generally considered, the supervisors would be the court of final resort, as the courts are very loath to review a decision of such a board, fairly made.

Chattel Mortgage

Husband gives a chattel mortgage on stock without wife's signature. In case of non-payment, can the mortgage take the stock.—Subscriber, Torrance.

The husband has the management and control of the community personal property, with absolute power of disposition other than testamentary, as he has of his separate estate, provided that he cannot make a gift of such property or dispose of it without valuable consideration, mortgage, sell, convey or encumber the furniture, furnishings or fittings of the home or the clothing or wearing apparrel of the wife or minor children that is community without the written consent of the wife, therefore the wife's signature upon the chattel mortgage is unnecessary to a valid chattel mortgage.

Bankruptcy—Mortgages

A man having all which he owns mortgaged, goes through bankruptcy. Can the mortgagee collect anything or will the bankrupt be able to hold everything?—Subscriber, Torrance.

The bankrupt act expressly upholds valid mortgages. If the mortgage is given and accepted in good faith without fraudulent intent for a present consideration, and duly recorded, the mortgagee will have no trouble whatsoever; the trustee in bankruptcy takes the property subject to the rights of the mortgagee and is entitled to sell the property subject to the mortgage, and in order to effect such sale may temporarily restrain the mortgagee from foreclosing, but the mortgagee is entitled to foreclose his mortgage in the state courts with interest, have sale of property and prove his claim in bankruptcy for any deficiency. The last two statements may seem to be a little inconsistent, but the stay of proceedings is a matter for the discretion of the United States courts and will be made only upon a showing that the bankrupt's estate would be benefited, and is usually dependent upon the existence of a considerable equity in the mortgaged property.

U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF ENTOMOLOGY.

DOSAGE SCHEDULE FOR CITRUS TREE FUMIGATION WITH LIQUID HYDROCYANIC ACID 95 TO 98 PER CENT PURE.

DISTANCE AROUND (IN FEET).

DISTANCE OVER (IN FEET)

	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	
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58																									28	28	29	30	31	32	33	33	34	34	58

Unit of dosage, 18 cubic centimeters.
One pound HCN=36 unit charges.

By R. S. WOGLUM, Entomologist,
Tropical and Subtropical Fruit Insect Investigations,
BUREAU OF ENTOMOLOGY.

The New 16 Valve

Twin City Tractor

Pays Big Dividends

For the first time in the history of the tractor industry, the 4 cylinder, 16 valve engine (valve in head type) is now applied to a tractor. The TWIN CITY 12-20 with its 16 valve motor actually develops 25 per cent more than its rated horsepower.

This new 12-20 is a light weight tractor that will out-pull, out-last and out-dividend other tractors of equal rating.

Not built down to a price, but built up to a fixed ideal—to do the work assigned to it better than it has ever been done before.

The highest grade tractor will unfailingly prove the least expensive and pay the biggest dividends.

Frank G. Renstrom Co. DISTRIBUTORS
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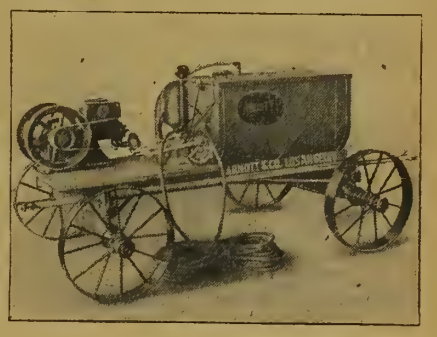
Los Angeles Stockton



SPRAYERS

Our No. 17 catalogue recently issued shows 17 spray pumps selling at $7.50 to $550.00.

The above cut is our No. 1452 Junior and is a popular sized rig.

Before buying either write us for catalogue and full information or better still, if convenient, call at our warerooms and inspect our machines.

We are distributing agents for the celebrated "Myers" pumps.

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Established 1892
Agricultural Implements
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Pomona Air Cleaner

Keeps dust out of tractor, truck and auto motors

Endorsed by motor manufacturers. Hundreds in use. Every Cleaner guaranteed.

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Germain Seed & Plant Co.
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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Nation-Wide Drive to Improve All Live Stock

During the past few months the United States department of agriculture has been working out the details of a broad plan for improving the live stock of the nation. The following article is the announcement of the campaign which is scheduled to start October 1:

LOOKING forward to the future food needs of this country's increasing population, the United States department of agriculture, in cooperating with the state agricultural colleges and other agencies interested in live stock improvement, announces a national better live stock crusade, to get actively in motion October 1 under the slogan of "Better Sires—Better Stock."

The plan is to hasten the replacement of the multitude of scrub domestic animals in the United States with pure bred or high grade stock and also to improve the quality of purebreds themselves. It has been evolved through long and careful observation of the live stock industry in this country and after extensive consultation with specialists and breeders.

Nation's Milk Average Low

For many years this country has contained thousands of the finest specimens of live stock in the world, but in spite of that fact the quality and productive capacity of the average farm herd and flock is still low. For instance, the average dairy cow in the United States yields about 4000 pounds of milk a year, a figure scarcely two-thirds the average production in some European countries, such as Denmark. The United States has thousands of cows which have milk yields of more than 12,000 pounds, double the Danish average, but on the other hand it has hundreds of thousands which are kept for milk and yet yield only a small fraction as much product as the best cows, though receiving nearly as much feed and care.

The difference in milk yield is due in large measure to a difference in breeding, but a herd of low production can be improved rapidly by the use of a pure bred sire from a family of high producers.

More Sirloin on Well Bred Cattle

Among all classes of live stock a similar condition exists. Proper breeding of beef animals results in better and more uniform stock, having a greater percentage of desirable cuts of meat and a smaller quantity of bone, offal, and inedible parts. Likewise in swine, sheep, goats, and poultry production, the kind of parent stock largely determines the quality and market value of the products. The crusade of improvement now to be undertaken is the outgrowth of investigations in genetics, of live stock observations in many countries, and a close study of public opinion. In most live stock regions of the world a gradual evolution toward better live stock has been taking place for centuries. The rapidity of these changes has an important bearing on world commerce and on the prosperity of the nations in which improvement has been greatest.

Individual and community efforts in many cases have resulted in marked live stock progress in small areas. The Islands of Jersey and Guernsey are familiar examples of this kind of accomplishment, but no large country so far has endeavored in an organized way to improve all its live stock simultaneously.

Live Stock Men Equal to Task

Officials of the bureau of animal industry and others who have considered the problem from every angle are convinced that it is possible to hasten the natural course of live stock evolution with benefit to the nation. They are confident also that the live stock men of the country are eager to undertake the task.

The means of accomplishing most of the improvement—which affects about 200,000,000 head of live stock, besides poultry — will be through wider distribution and increased use of pure bred sires and dams.

Once the use of pure bred sires becomes general throughout the country, the process of grading up will be rapid. Many experiments and also practical experience, when good sires are used, show that within three generations most of the individuals in a scrub herd headed by a pure bred male resemble pure bred animals in appearance. In a few more generations, under skillful breeding, the former scrub stock is graded up to such an extent that for production of meat and other animal products, they are practically as useful as pure breds. The chief difference between a "high grade" animal and a pure bred is in the value for breeding. Only the latter can be used in producing pure bred breeding stock. Moreover only pure breds are eligible to registry.

Official Emblem to Be Furnished

The department of agriculture through its cooperative state agencies is preparing to supply live stock raisers with printed information that tells in popular language the best animal breeding methods and the advantages to be derived from their use. In addition the department of agriculture is to furnish an official emblem, suitable for display, to every farmer agreeing to use only pure bred sires and in other ways to cooperate in the better live stock effort. To obtain the emblem a farmer or breeder will be asked to fill out a simple blank showing the number and kind of live stock he possesses and also to declare that all his male breeding animals are pure breds. From the number and nature of the blanks received the department will be able to measure the progress of the crusade, and at the same time obtain valuable statistical information which will be made public at suitable intervals.

The betterment of the nation's live stock is by no means a new idea. The topic has been discussed at length from public platforms and in the agricultural press for many years. Agricultural colleges, breeders' associations, various live stock organizations, banking and business interests, live stock judges and experts—these and other forces are responsible chiefly for the progress already made and the sentiment for further development.

Organization of Campaign

A general coordination of the work, however, now seems desirable, with a minimum of red tape and a maximum of red blood. So far as the activities of the department of agriculture in the crusade are concerned, the bureau of animal industry, in cooperation with the state colleges of agriculture, will be responsible for live stock policies, especially the breeding work and scientific problems. The states relations service of the department will work in cooperation with the colleges of agriculture for carrying the plan of action through the extension divisions to every live stock owner who can be reached. County agents and other field workers of the department and the colleges will be local sources of information and assistance.

While it is believed that stockmen of the country naturally look to agricultural officials to inaugurate a crusade of this kind the problem primarily is one of adequate production and effective distribution. Responsibility for success depends accordingly on breeders and all live stock owners.

Response to Will of People

For several months the department

A moving stream of live stock which the packers *must* buy

The packer feels an obligation to take the live stock that comes to market and find an outlet for it.

Why this obligation?

It is because the stockman has fed his live stock to the point where it must be sold or they will get thin again and labor and expensive feed be wasted.

If the stockman could not sell his shipment and had to take it home, he would lose on everything—freight, feed and time.

Several such losses would discourage him and he would raise less live stock. Hundreds of other stockmen also would plow up their pastures. The supply of meat animals would diminish.

The packers would not be able to get enough live stock and often their big, expensive plants would be idle. The public would go meat hungry.

In short, for the best interests of everybody, the packers believe it sound to do their full share to maintain an ever open, cash market, and this is accomplished at a profit of a fraction of a cent per pound. This system has encouraged live stock feeding.

Only a policy like this will provide a better meat supply for a growing nation.

Swift & Company, U. S. A.

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A nation-wide organization owned by more than 25,000 shareholders

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL

For the Human Body — It is penetrating, soothing and healing, and for all Old Sores. Bruises, or Wounds, Felons, Boils, Corns and Bunions CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.75 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet E.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

JERSEYS

Jersey Bull
For Sale
A fine straight one, bred right, priced right
S. F. Williams
Chico, Cal.
Member Orland Jersey Cattle Club

Venadera Herd
Offering four daughters of the great bull Altama Interest, 7 to 10 months old. All from Register of Merit dams.
Guy. H. Miller
R. 1, Modesto, Cal.

All My Records
Are made under ordinary dairy conditions
The Farmers Cow is
The Jersey
Young Bulls For Sale
C. D. Hayworth
Modesto Cal.

Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
Modesto Cal.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glyntlyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

10 Jersey Bulls
We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.
Arden Dairy, Certified
El Monte, Cal.

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal
Only Bull Calves For Sale

HOLMES STOCK FARM
Registered Holsteins of best breeding Young bulls for sale
R. L. Holmes Modesto, Cal.

has been making an analysis of live stock sentiment as expressed in the farm press and in correspondence received in its various offices. Of all the topics discussed the need for a better quality of domestic animals has been preeminent.

To make the crusade against scrub live stock most effective the department welcomes constructive ideas and suggestions from all sources. The following classes of live stock are to be included in the campaign for improvement: Cattle, horses, asses, swine, sheep, goats, and poultry.

Many Problems—None Insurmountable

In spite of the conspicuous merits of the task about to be undertaken, there are also a number of obstacles. It is recognized that sentiment in favor of pure bred sires, while strong, is by no means unanimous. To win the support of those who, through lack of interest or opposition, fail to take their part in the crusade against scrub live stock is one of the problems to be met.

The cost of desirable pure bred sires is another important factor which has long been an obstacle to live stock improvement. Cooperative ownership divides the expense considerably, and the increased value of the young stock raised also helps to overcome that objection. In addition the campaign is expected to stimulate a greater production of pure bred breeding stock of good quality.

The question of controlling the spread of live stock diseases when animals are transferred from one herd to another or are used in community circuits, is still another problem. This matter, however, can be handled by vigilance in field inspection and by the adoption by breeders of well recognized preventive measures.

There are other problems also more or less knotty, but not presenting difficulties of an insurmountable character. In connection with the drive on scrub sires there will also be waged a campaign against the "scrub pure bred," as it is called, in the endeavor to eliminate, as breeding animals, pure breds of inferior quality. It will be observed that the plan in no way interferes with any work in live stock improvement now being conducted, but instead it is expected to make all the work more definite and effective by providing official recognition for progressive breeders, including members of boys' and girls' clubs. Friendly competition is expected to spring up among communities and entire states, each of which will seek to excel in the rate of live stock progress.

AN IMPORTANT RECORD IN MORRIS HERD

A yearly record of more than ordinary importance was recently completed by the grand old cow Aaggie Acme of Riverside, owned by A. W. Morris & Sons Corporation, Woodland. This well known cow had a previous record, made at six years of age, of 15,032.6 pounds milk and 808.82 pounds butter in one year. She has always been a large and persistent producer, and when she freshened last year at past 11 years of age she was in such promising form that her owners decided to continue her on yearly test, with the result that her year's work was recently completed with records of 20,354.8 pounds milk and 1053.14 pounds butter. She is not only a wonderful producer but a great breeding cow as well, numbering among her offspring Aaggie Acme of Riverside 2nd, holder of the world's strictly official record for butter production in one year; Prince Riverside Walker, senior herd sire in W. J. Higdon's herd at Tulare, and King Aaggie Mead, who is in service in the Morris herd and to which the $11,200 daughter of Tilly Alcartra was in calf when sold at Philadelphia in June. This latest Morris record materially strengthens the breeding of a number of high class bulls now in service in California, and it also further increases the average for the seven nearest dams of the $11,000 bull Sir Aaggie Mead De Kol, now heading the herds of C. L. Amos and John Arffman in New York.

Prince Walker Cornucopia
The Highest Record Son of Prince Gelsche Walker

His dam: ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516 7 pounds milk in seven days. Her previous records were as follows:
At seven years—
Milk 338 days.....18,849.40
Butter 866.28
At six years—
Butter seven days 34.13
Milk 532.40
At five years—
Butter seven days 28.85
She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.

Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho
Anoakia Breeding Farm
Santa Anita, California
Anita M. Baldwin, Owner W. H. Taylor, Supt.

His Calves Are Beauties

King Korndyke Pontiac 20th

Every one who is fortunate enough to own a son or daughter of KING KORNDYKE PONTIAC 20TH our $6500 herd sire, is enthusiastic about the splendid type and beautiful marking of his calves. While they are only babies his daughters show great promise of developing into exceptional dairy cows.

His young sons are moving fast, and it will pay you well to see us now about one for your herd, for we are not going to be able to fully supply the demand for some time to come.

Our Entire Herd is Tuberculin Tested
Tulare Holstein Farm
W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds
This butter average is equalled by only one other bull of service age in the world. Buy your next bull from
Eldorado Herd
Alex. Whaley, Owner Tulare, Cal.

WHERE TO BUY YOUR
herd bull. We can be of material assistance to you in solving this question.
Sir Veeman Korndyke Pontiac
Our senior herd sire is a son of Sir Veeman Hengerveld, the sire of more 30 pound cows than any living sire. Five other sires bred for production. A good sire will increase your milk production. We have increased ours 100 per cent the past two years. We can sell you a young bull at a very reasonable price.
BURR FARM, Los Angeles, Calif.
Breeders of Registered Holsteins
Farm at E. 26th St. and Downey Road
Business Address, 8th St. and Towne Ave.

GOING FAST, SO ACT QUICKLY
Five young Holstein bulls have left Sunnyside Farm past month to head other herds. We have for sale a few select sons of Sir Veeman Korndyke Pontiac by Sir Veeman Hengerveld, the sire of more 30 pound cows than any other living sire. Full description and price on request.
R. F. Guerin Breeder of Holsteins Visalia, Calif.

Raise Your Hogs and Cattle at a Profit
Assist Nature by Feeding
Economy Stock Powder
A general conditioner, a worm expeller and a disease preventive.
Send for FREE SAMPLE and our BOOK on LIVE STOCK.
ECONOMY HOG & CATTLE POWDER CO.
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Save Your Hogs

Hauser's Digester Tankage
Gives Greatest Value for Least Money
It Makes Them Fat
Hauser Packing Co. Los Angeles

Cattle Ranges

ARE YOU INTERESTED?
in knowing facts about Central British Columbia Cattle Ranges and mixed farming improved and non-improved large and small? Write your requirements resources.
J. H. BROWNLEE, Canadian Land Surveyor, Peoples Savings Bank Bldg.
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Brighton Farm Herds
Registered Shorthorns
and
Berkshires---Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

Lendorris Ranch

Offers to discriminating buyers of big type Poland-Chinas animals of quality and breeding. Two such splendid sires as Young Jumbo and Lendorris Liberty Bond account in part for the popularity of our big type Poland-Chinas.

W. L. Haag & Son **Hanford, Calif.**

Bred Sow Sale Sept. 17, 1919

The Yankee, Jr.

Represents years of successful breeding big type Poland-Chinas. The Yankee Jr. is typical of his eminent sire. Several of his sons have gone to the leading eastern herds. California breeders can secure this blood in my big type bred sow sale September 17th.

JOHN BERNSTEIN **Hanford, Calif.**

Matchless Big Bob

is matchless in more ways than one. Big Boned, High Backed, plenty of length and imparts these high qualities to his get. Mated with our Big Type sows his get are now in demand by breeders and pork producers. Write us for particulars.

LAKESIDE FARM

Geo. V. Beckman & Sons, Owners
LODI, CALIF.

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

A Stated Fact

GOLDEN STATE KING is the Greatest Breeding Poland-China Boar on the Pacific Coast.

Sired by Golden Gate King one of the greatest boars the breed has produced. 30 of his pigs will be shown at State Fair. They will easily prove this statement. Strictly Big Type.
His get will sell in the Poland-China sale at Lodi, September 19.

W. A. Young **Lodi, Calif.**

FUTURE HERD SIRES

A better lot of young boars, future herd leaders, cannot be found. Sired by Golden State King and Big Bone Bob. Breeders who have seen my young Poland-China boars are unanimous in pronouncing them excellent prospects. They are high backed, big boned and have plenty of stretch. Write me for description.

J. F. Lehman **Lodi, Calif.**

Big Type Poland-Chinas

that are strictly big type. Big type sires—big type dams produce for me real big type animals. Usually sold down close but frequently have an exceptionally good one for sale. It will pay to keep in touch with me.

Eugene Milner **Lodi, Calif**

Blue Valley Model

Our junior herd boar comes from a long line of strictly big type breeding. Individually he is all we could ask. We sell big type Poland-Chinas that give satisfaction. Write

Poland China Ranch **H. B. Peake, Mgr.**
San Bernardino, Calif.

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Safeguarding Live Stock

ANIMALS suffer great discomfort and pain because of attacks of flies and other insect pests. Entire freedom from these pests can not be afforded but a measure of relief can be had with a little thought and preparation. The common stable or house fly is perhaps the cause of the greatest discomfort. There are by repellents offered by manufacturing chemists which are effective. A good home-made repellent is:

Fly Repellent

Common laundry soap	1 pound
Water	4 gallons
Crude petroleum	1 gallon
Powdered napthalin	4 ounces

Cut the soap into thin shavings and dissolve in water by the aid of heat; dissolve the napthalin in the crude oil, mix the two solutions, put them into an old dasher churn, and mix thoroughly for 15 minutes. The mixture should be applied once or twice a week with a brush. It must be stirred well before being used.

Warbles or Grubs in Back

Grubs weaken cattle, cause loss of flesh and reduce quantity of milk. This pest causes a loss of $50,000,000 annually to this country. The attacks of the fly which causes the warble may be lessened by the above fly repellent. The warble already established in the back should be removed by slightly increasing the opening with sharp knife and pressing out the grub. Be sure it is destroyed in order to prevent the maturing of another fly. Small oil can with kerosene may be used to force a drop of oil through the opening which kills the grub. This is not as satisfactory as the other treatment. If a neighborhood will combine entire eradication is possible.

Mites and Scabs

Mites cause untold loss and yet are easy of control with the ordinary animal dips. Commercial mixtures are good or one may prepare the old time sulphur dip very similar to the formula given in 10. Use for an animal dip at a strength which contains around one-fourth of one pound of sulphur to the gallon. Be sure to use only clear liquid allowing no sediment in the dip. Have temperature of bath around 100 to 105 degrees.

Arsenical Dips

The formula commonly used in making an arsenical dip is as follows:

Sodium carbonate (sal soda)	24 pounds
Arsenic trioxid (white arsenic)	8 pounds
Pine tar	1 gallon
Water sufficient to make	500 gallons.

Put 25 gallons of water into a kettle or tank of 40 to 50 gallons capacity, heat to boiling, and add the sal soda. When this has dissolved add the white arsenic, then boil and stir for 15 minutes or longer, until the white arsenic has entirely disappeared. Cool to 140 degrees Fahrenheit (by the addition of cold water if desired), then pour in the pine tar in a thin stream while constantly and vigorously stirring the solution. Immediately empty the liquid into the dipping vat, which has already been three-fourths filled with water, and stir thoroughly.

A by-product of the action of sodium carbonate on white arsenic is the gas carbon dioxid. The escape of this gas is attended with considerable foaming of the solution, so the kettle must be generously large, and the operation of boiling must have constant watching to prevent the liquid from frothing over the edge of the kettle.

The kettle or tank, utensils, and materials must be perfectly free from all greasy or oily substances, as a small quantity of such matter is sufficient to form a coating over the arsenic, and thus to prevent or delay its solution.

If very hard water is used there may be some residue of gray or whitish powder left undissolved. In such case it is not arsenic and the solution may be perfect.

Nicotine Dip

Successful animal dips of nicotine usually contain not less than five one-hundredths of one per cent pure nicotine, and two per cent flowers of sulphur:

Forty per cent nicotine sulphate	1 pound
Flowers of sulphur	16 pounds
Water	96 gallons

Mix nicotine solution and sulphur thoroughly, then add water. Do not heat above 105 or 110 degrees.

Live Stock News Notes

SALE CALENDAR

Holstein Cattle

September 18, Henderson Company and Bonita Stock Farm, Stockton.

October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

August 20. Fresno County Poland-China Breeders' Association, Fresno.

September 17, John M. Bernstein and W. L. Haag & Son, Hanford.

September 19. San Joaquin County Poland-China Breeders' Association, Lodi.

September 30, Dimmick Brothers and DeRaad, Hanford.

October 4. Marsh & McCracken, Modesto.

October 7, Bassett, Ross and Crawshaw, Hanford.

October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.

October 18, Trewhitt, Vaughan and Nehls, Hanford.

October 21, Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine

August 23, W. M. Carruthers, Live Oak.

What can be accomplished in a comparatively short time by a determination to succeed is shown by the progress made by J. F. Lehman, of Lodi, a breeder of Poland-Chinas. In the fall of 1917 he purchased from W. A. Young a pure bred Poland-China gilt bred for March farrow. She farrowed ten pigs, seven boars and three sows which he developed to such a degree that when shown at the state fair in 1918 he won $101 in the open classes and the Poland-China futurity and sold the seven boars for $710, a total of $811 cash returns from the original investment of $75. Mr. Lehman states that he also refused $500 for the three sow pigs which are part of his present herd along with the original gilt. From the original gilt and her three daughters he now has 33 pigs which are mighty good representatives of the breed. His herd sire at present is Smooth Big Korver by Big Korver out of Smooth Beauty, the 1918 grand champion sow, although he has a number of pigs by Golden State King. A younger sire of popular blood lines will be added this fall. Mr. Lehman will consign a number of pigs to the sale in Lodi September 19 and will show at the state fair in Sacramento.

The only fair to be held in Stanislaus County this year will be at Patterson August 21-22-23. The fair will include both agricultural products and live stock. The decision to hold this fair was too late to permit of the erection of proper buildings, but a sufficient number of tents has been secured for the housing of all exhibits. All available space has already been spoken for.

Geo. V. Beckman & Sons, Lakeside Farm, Lodi, are rapidly developing their herd of big type Poland-Chinas and have recently added a number of junior yearling sows to their herd. The herd boars in use are Matchless Big Bob and Lakeside Defender. Matchless Big Bob is a son of Big Bob Orange, a boar used by University Farm, Davis. Lakeside Defender is a Meharry-bred boar being by Chief Defender's Choice, and a litter mate to Chief Defender's Choice 2nd sold in the Meharry sale last fall for $2000. Both of these boars will be included in the show herd this fall along with a number of their get. Lakeside Farm will have out a complete show herd this year and will be exceptionally strong in the senior and junior pig, and young herd classes.

One of the feature events in live stock circles for the month of August is the Poland-China sale at Fresno, to be held by the Fresno County Poland-China Breeders' Association. The sale will consist of 30 bred sows, 17 bred gilts, and eight open gilts. The following well known breeders will be represented in the sale: Wm. Burchard, Kerman; D. H. Forney, Fresno; Buckland & Son, Fresno; W. C. Ficklin, Fresno; Caesar & Son, Reedley; E. Meyers & Son, Riverdale; E. R. Ichner, Selma; Barkena & Son, Fresno; C. W. McCollister, Fresno; W. L. Choisser, Riverdale; J. W. Jones, Carruthers; C. E. Dack, Fresno; I. L. Mason, Fowler; G. W. Pfost, Laton; Vern Fullerton, Selma; H. Askov, Fresno and A. J. Van Cleef, Riverdale. Full details as to the breeding of animals in the sale and the boar to which they are bred will be found in the catalog. W. C. Ficklin.

secretary Bank of Italy Building, Fresno, will be pleased to mail you a copy.

One of the younger breeders of Poland-Chinas in the state is Eugene Miner of Lodi who is devoting a good deal of time and energy to building up a herd of big type Polands. Mr. Miner states that he expects to add a few good young sows and a top boar to his herd this fall. He will not attempt to produce a large number of animals but expects to breed and develop a class of Poland-Chinas that will meet the requirements of breeders and pork producers to such a degree that his stock will have a steady demand. He says he expects to produce better animals and develop them to sufficient age before selling them and that the buyer will then be better satisfied.

W. A. Young, one of the oldest Poland-Chinas breeders in the state, reports the sale of ten bred sows and gilts to Norman F. Eastman of New York City, who is establishing a herd on his ranch at San Fernando. Included in the sale was Smooth Beauty, the grand champion sow at the 1918 state fair, and Timm's Wonder Maid, placed second to Smooth Beauty. Mr. Young states the price received for Smooth Beauty was $750 which he believes is the highest price ever paid for a Poland-China sow on the Pacific Coast. The total sale price was $25000 for three two year old sows, four yearlings and three ten months' old gilts, and was made through Chas. Graham, formerly of the Santa Anita Ranch, who is now in charge of Mr. Eastman's ranch. Mr. Young is planning to add several high class young sows and the best boar he can find.

Elmer Lamb, who, owing to poor health disposed of his herd of Duroc-Jerseys, is again assembling a herd which he expects to develop to such an extent to permit him holding a sale late next year. His only entries at the shows this year will be in the senior pig class and young herd. Mr. Lamb bred and partially developed the boar Orion Model Jr. and the sow Lucy Orion selling in the Belknap sale last March for $1000 and $1100 respectively.

Guy H. Miller, breeder of Jersey cattle, Modesto, will have out a show herd of 16 animals of various ages headed by the four times grand champion bull Altama Interest, a grandson of Interested Prince, one of the famous bulls of the breed. Mr. Miller states that while he has won the grand championship four times with his senior herd sire he hopes to be able to make his record stand at five times when he will he willing to retire him from the show ring. As a junior sire he is now using Jap's Perfection Owl, by Jap's Owl, secured from the well known Meridale Farm of New York.

W. J. Hackett of Ceres will be seen at the fall shows with his show herd of Jersey Cattle. His herd sire Oxfords Majesty's Gold Link will head the herd which will consist of aged cows, senior and junior heifers and senior and junior bulls.

The Rico Vegas herd of Jerseys located near Modesto and owned by C. D. Hayworth will not be seen at the fall shows. This is due to the scarcity of labor and building operations needing Mr. Hayworth's personal attention. One of the hulls now in use as sire is Silken Golden Glow Chief, a grandson of Golden Glow Chief, sire of Viva La France, the world's champion cow for her age. The dam of this bull is Lady Silken Glow, with a record of 882.65 pounds of fat as a senior three year old. All cows are regularly tested and all that have finished test are R. M. cows.

Homer Hewins, formerly of Calistoga, is now nicely located on his farm of 300 acres near Salida. Mr. Hewins expects to develop this farm as a breeding plant for Berkshires and Holsteins and is rapidly rearranging the fields and pastures with this idea in view. Mr. Hewins had the misfortune to lose his Berkshire boar, Remoh Epochal, hy Epochal, last week but he will be replaced in time for fall breeding. About 40 Berkshires make up his present herd.

Frank R. Steel, manager of the Gossard Farms, Martinsville, Indiana, has been visiting the Berkshire breeders of this state. Steel reports that he has just completed a deal for the remainder of the famous Clise Ayrshire herd of Washington. Included in the sale was the bull Peter Pan 50th, considered one of the great bulls of the breed. It will be recalled that about a year ago Clise sold the major part of his herd to the Gossard Farms.

Miller Ranch, Newhall, breeders of Poland-China swine, report the sale of two bred gilts to S. P. Moore, Newhall; a spring boar to W. G. Short, Saugus, and a gilt to E. A. Harding of Los Angeles.

On July 29 80 cars of California cattle were on the Kansas City market. Most of the cattle were from the Imperial Valley and averaged around 1050 pounds. They sold from $11.00 to $12.75 per hundred.

J. E. Thorp of Lockeford will have out two show herds this fall. The Jersey herd will consist of 18 head, including past show ring favorites and Eminent's Wardress, the cow purchased in the Reid dispersal sale for $1200. Jersey interests are looking forward to the appearance of this cow in California show rings, as she is regared by many as one of the rarest types seen in recent years. Besides the Jersey herd, Mr. Thorp will have an excellent lot of Duroc-Jerseys out. He is particularly strong with his junior yearling boar, Freddie You'll Do, a son of Johnson's Defender.

Madrigal Mookie 2nd, belonging to W. J. Higdon of Tulare, has just shown on a 60 day test 213.65 pounds of butter and 5100.22 pounds of milk with a seven day record of 32.66 pounds of butter. Last year the cow broke the state record for milk production for two year old heifers, and her record this season shows 54 more pounds of butter and 900 pounds more of milk in 60 days.

I. G. McCune of Stratford has purchased from Hugh C. Shinn of Tulare a Poland-China boar pig four months old out of Bob's Giantess with Boulder Buster as the sire.

A. J. Elliott of Tulare has sold a boar pig from his $325 sow Big Ann to a prominent Poland-China breeder in Glasgow, Kentucky.

W. H. Bitner of Bakersfield, manager of the California Farm Bureau Marketing Association, has purchased from W. J. Stewart of Tulare for $100 a fine seven months' old Duroc gilt. The pig was the prize winner at the last contest of the Visalia boy's pig club.

W. M. Carruthers, Live Oak, who has the distinction of having held the highest record Berkshire sale in America for the years of 1916 and 1917, will sell 70 head of boars, sows and gilts at his farm near Live Oak Saturday, August 23. Carruthers had exected to show Berkshires at the fall fairs but owing to the shortage of help and the time given over to his recent Shorthorn sale he has decided not to show and will include in the coming sale many of the animals he was preparing. An attraction of the sale will be the selling of the boar Live Oak Champion, reserve grand champion at the 1918 state fair. Col. Ord L. Leachman of Sacramento has been engaged to serve as auctioneer.

Clayton N. Slocum, Willows, junior member of the firm of H. P. Slocum & Son, reports the sale of three young sows and a boar to Mr. J Holly of Dixon. The boar is a grandson of the noted sire, High Orion.

INAUGURAL POLAND-CHINA SALE

OF

Fresno County Poland-China Breeders Association

WEDNESDAY, AUGUST 20

FRESNO, CALIF.

Type and Quality will predominate in this sale

30 Bred Sows 17 Bred Gilts

8 Open Gilts

These are the tops from the herds of 17 breeders and sired by such boars as President, Jumbo's Equal, King's Big Bone Leader, Young Jumbo and Model Fellow.

They will be bred to such boars as Vaughn Jones, grandson of Gertsdale Jones, Hather's Big Bob, grandson of Caldwell's Big Bob, California Jumbo Buster, grandson of Giant Buster, and Blue Valley King, a grandson of King Big Bone.

This is the most popular blood found in present day Big Type Poland-Chinas.

This is a sale you cannot afford to overlook whether you are a breeder or a producer of pork. Hogs today occupy the highest position of any class of live stock in the markets of the United States.

The animals that will be sold in this sale are sure to return a handsome profit for their purchaser.

Sale will be held on Fresno Fair Grounds, starting promptly at 12.30. Lunch will be served at 11.30 A.M.

Write W. C. Ficklin, Bank of Italy Bldg., Fresno, Calif, for a copy of the catalog.

Col. Geo. W. Bell, Tulare, Auctioneer

Alfred Buckland, Pres. W. C. Ficklin, Sec'y

"Quality" Feeds

Nothing better. Made of the pure grains and meals. No filler, mill wastes or substitutes. Every sack tagged with guarantee of analysis and materials.

18-5 LAYING MASH, with Buttermilk. 18 per cent Protein, 5 per cent fat. High protein mash at a reasonable price

Quick-fat

Complete Hog Feed

with Buttermilk.

It makes 'em grow fast.

At your dealers or direct from the factory.

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The Leading Live Stock Auctioneers

Col. Ben A. Rhoades

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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

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My services are available to all who plan to sell live stock, farm equipment or real estate, and who want the high dollar. Pure bred live stock sales a specialty. Terms reasonable. Write or wire for dates.

Rancho De Los Cuevitas

Breeders of D. S. Polled and Horned Herefords. Bulls, one to two years old; heifers, one to three years old; one to a carload for sale.

Herd headed by Variation 17th 447159 (3238), a Mossom Boyd bull that weighs more than 2200 pounds.

JOHN B. BOWMAN, McINTOSH, N. M.

Breeding Date Book---FREE

We have issued a very convenient little book for the keeping of breeding dates of cattle hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it.

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Pork Production

By actual test pure Hawaiian Cane

MOLASSES

will increase pork production approximately five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price. Do you know of any other feed that will do this at any price?
Why not get all the profits out of your hogs?
Write us for full particulars.

W. H. YOUNG COMPANY
58 Sutter Street San Francisco

Worth Investigating

Our recent purchases of some of the best bred Duroc-Jerseys from the leading eastern herds enable us to offer animals of true Duroc type, quality and breeding. When you think of Duroc-Jerseys, think of

The Key Herd of the Pacific Coast

Just now we have a few sows and gilts, bred to an outstanding boar that will afford you a profitable investment at the price we are asking. Young pigs of both sexes. A few service boars. We will be pleased to send you full particulars,

H. P. Slocum and Son
Willows, California

Duroc-Jersey Hogs

250—Spring Pigs—250

That have been mated with extreme care and properly raised and fed. The big, tall, rangy, high-backed, big-framed kind that can carry an awful load of pork and walk off with it. We have on our Orland ranch, the sires and dams of the $1100 sow and $1000 boar recently sold at San Jose Sale. WHEN YOU NEED GOOD DUROCS—WRITE US.

F. D. Burr Co.
235 Montgomery St. San Francisco

Duroc Jerseys In San Diego County

GREAT MODEL---The Most Popular Sire in the West

Winsor Ranch, Bonita, Calif. Address R. K. Walker

WHAT DO YOU WANT?

We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.

George Junior Republic Chino, Calif.
also Breeders of Holsteins

DUROCS OF THE BEST BLOOD LINES

Bred sows, gilts bred and open. Have one very nice O. C. K. boar 9 months old. Dam sold for $1,100 and sire for $1,000 in last month's sale.

Jersey Queen Farm, San Jose, Cal.

Duroc-Jersey Pigs

from both
Eastern and Western Registered Sows of Best Blood Lines. Sired by LEADING BOARS

Ranch: Van Nuys, Calif.
W. Chas. Swett, 7256 Franklin Ave., Hollywood, Calif. Phone Holly 4115

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Future Champions Can Be Secured NOW

by placing your order for a young Berkshire boar from the famous Anchorage Farm herd. Star Leader and several of his sons have been mated with our large type Berkshire sows. Star Leader is famous wherever good Berkshires are known.
One of these young boars will not only add size and vigor but will add the quick maturing qualities demanded by pork producers.
Write immediately for full particulars and breeding and secure your future herd boar. Priced within reason.

Anchorage Farm Orland, Calif.

BERKSHIRES

are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser.
High class stock for sale at all times.

Geo. A. Stingle El Monte, Calif.

A PORK DAY AT HANFORD

A great deal of interest is being aroused in the fat hog show that will be held at Hanford October 15. For a number of years Kings County has been noted for its pure bred swine and for the enterprise and enthusiasm of the breeders. Having thoroughly established themselves as breeders of pure bred swine they are now devoting time and money in interesting the farmers in better hogs for pork production.

Together with the board of trade and in cooperation with the farm bureau a contest for fat hogs has been arranged between a number of farm centers. To bring the show to a successful issue it was considered necessary that at least five centers compete and that five feeders from each center enter hogs. The plan met with such favor that eight centers have entered and over 800 hogs are on feed. Prizes totaling $1500 have been provided of which $350 will be awarded to the first prize carlot, $100 for the best ten head and $25 for the best single animal.

In addition to the contest a complete display of pork products will be made in which the various packers have been asked to cooperate and to send an expert to assist in the program.

Professor J. I. Thompson of the University Farm has been selected to judge the hogs.

After the hogs have been judged and the prizes awarded they will be sold at public auction through the farm bureau.

TULARE COUNTY HOLSTEIN BREEDERS

Tulare County Holstein breeders have purchased some of the best young herd sires available during the past eighteen months, and several of them are already reaping a rich harvest of choice calves. King Korndyke Pontiac 20th, the bull purchased by W. J. Higdon for $6500, has already sired a wonderful lot of calves, much more than half of them being heifers, and most of the highest record cows in the lower San Joaquin valley have been bred to him.

Sir Aaggie De Kol Acme 2nd, owned by Alex Whaley, Tulare, is developing into a bull of rare individual excellence, and his calves are much above the average. Six out of the first nine dropped in Mr. Whaley's herd are heifers.

King Sadie Vale Idyl Segis, owned by R. F. Guerin, is also developing into a big, strong, straight individual, and his first six calves, five of which are heifers, are choice in every way.

Segis Pontiac Abbekerk, owned by R. C. Sturgeon, Tulare, is already a bull of commanding individuality, and he is only a youngster yet. His first calves are beauties, and most of them are heifers.

King Mead of Riverside 7th, owned by L. D. Bardsley, Tulare, still carries the splendid lines and quality he exhibited as a calf, and while we did not see his first calves we are told that Mr. Bardsley is much pleased with them.

King Sadie Vale Rose, owned by T. J. Gist & Sons, Tulare, is developing nicely himself and is siring as choice a lot of calves as could be desired.

SILO ALMOST AS USEFUL AS BARN

The silo is rapidly becoming recognized as a necessary part of the Minnesota farmer's equipment. A Minnesota farm without a silo, at least in the corn area, is no longer up to date. The rapid adoption of the silo is accounted for by recognition of its advantages. These advantages are summarized by A. D. Wilson, extension director of the Minnesota colege of agriculture, as follows:

If corn is cut at the proper stage and put into a good silo, the whole corn plant is eaten.

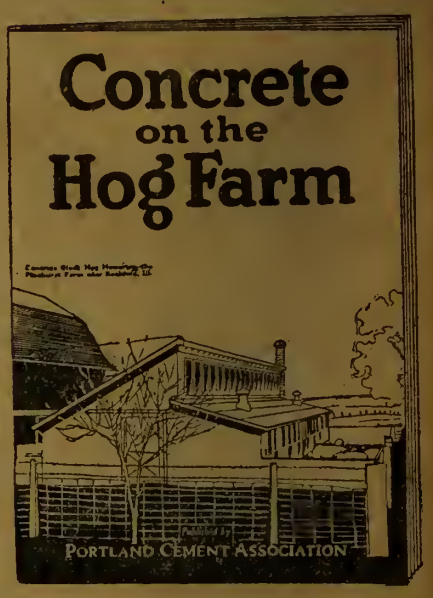
Silage is more convenient to feed than is any other rough feed commonly used on the farm.

Silage is both palatable and succulent.

The addition of a succulent feed to a ration increases the digestibility of the dry feed eaten.

With a silo it is possible to save corn that might otherwise, owing to immaturity, be largely wasted.

Every Hog Raiser Needs This Book



EVERY farm is a hog farm, and you can't make profit certain unless you

farm with concrete.

This book shows all the profitable uses of concrete for the hog raiser, and tells you how to build them—hoghouses, feeding floors, hog wallows, feeding and watering troughs, dipping vats, fence posts, corncribs, smoke-houses, brine tanks. You can't afford to run a hog farm without them.

Write for a free copy of *"Concrete on the Hog Farm."* Address our nearest District Office.

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Concrete for Permanence

SIMPLEX SILO

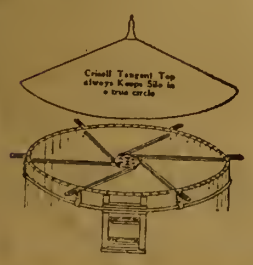
Double Your Dairy Profits

Suppose you had some means of providing a nutritious green feed for your dairy—summer and winter. And suppose it would save you time and worry, enable you to secure double your yearly profits. *What would it be worth to you?* It would be the most valuable thing on your farm, wouldn't it?

That's just what the "Simplex" Silo will do. The "Simplex" is more than a silo. It is the perfect silo. It will last longer, make better ensilage and give more all-round satisfaction than any other. You will never know what a silo really is until you have owned a "Simplex."

Construction of the Simplex

The "Simplex" silo is constructed of two things —*perfect lumber and common sense.* A silo built of spliced staves will leak. *Why?* Because it is impossible to join two staves and make the union as solid as the wood itself. Therefore the *"Simplex" has no joints. Staves are one piece.* No chance for a leak. Extra heavy tongues and grooves with new steel hoops make the *"Simplex"* an ever solid silo.



The Interlocking Anchor System and the Crisell Tangent Top keep the "Simplex" always in a true circular outline. Absolutely will not sag, twist or blow over. Write for blue prints of the "Simplex." Get our illustrated circulars and find out more about how to increase your profits.

Why wait for your neighbor's ensilage cutter while your crops are spoiling in the field? A week or even a day may mean a loss of several hundred dollars to you. *Own a "Papec."* Have a cutter when you need it. Fill your own silo at the right time.

The "Papec" is built strong. Solid steel frame. Easily and quickly taken down and put together. Knives and fans are on one wheel. It operates with less power than any other. We guarantee it to cut and elevate more ensilage than any other cutter made with the same power.

Let Them Make Money for You

The Simplex Silo and the Papec Cutter are a money-making combination. We guarantee both to be as we claim. Prompt refund of purchase price if either falls short of our statements. Write for descriptive matter. Let us show you more about the "Simplex" and the "Papec." Write today.

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SANTA FE LUMBER COMPANY,
18 California St., San Francisco, Cal.

Please send me folder describing Simplex Silos, also information about Papec Ensilage Cutters.

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SANTA FE LUMBER CO. San Francisco

Six Year Old Boy Best Pig Raiser

By Frank B. Anderson, Secretary Western Berkshire Congress

Donald Pineo, a six year old boy of Del Paso Heights, could show some old folks a few pointers on pig raising, judging by the results obtained in the Boys' Pig Club contest just closed. This little tot—hardly big enough to carry a feed bucket—showed the best pig in the class, the greatest gain at the lowest cost and the highest net profit with his pure bred Berkshire sow pig. Donald, however, was nosed out of first place in the contest because he was not able to write an essay on how he conducted his feeding, management, etc., as provided in the Pig Club rules, so Walter Graham, an older boy showing two pigs, won second place on one of the gilts. His pig will go to the state fair, showing in the Pig Club class and also in the breeders' classes.

A marked interest in the raising of more and better pigs has been created around the communities in which these pig club contests have been held. By securing good registered Berkshire sow pigs the boys will continue with a contest to see who can raise the best litter of pigs. Many of these pigs are on farms and suburban homes that never before raised hogs.

The Del Paso Heights pigs were judged by Jack Finlay before an interested crowd of farmers, including the parents of the young hog raisers. Pointers on the care and management of the sows as they approach breeding and farrowing time were given by Finlay, and it is likely that some of these children will get started along lines that will prove highly profitable.

While the cost basis for this club work has been placed at pork prices, the nicely developed gilts could realize the children some handsome profits. The top pigs of the contest would easily bring $100 at any breeders' sale. These pigs were bought by the boys and girls with money loaned on their notes by the California National Bank of Sacramento.

The first and second pigs were December gilts from the James Mills Orchards Corporation, and the third was a February pig from the herd of A. B. Humphrey.

The results of the Del Paso Heights Club contest were as follows:

DEL PASO HEIGHTS CLUB

Name	Fed Days	Pounds Gain	Average Daily Gain	Cost Feed & Labor	Cost Pig	Value Pig	Net Profit
Donald Pineo	120	137½	1.14	$10.49	$11.00	$35.80	$14.31
W. E. Graham (2)	120	228	1.90	19.93	23.75	63.40	19.72
Elizabeth Strauch	120	95	.79	13.72	9.25	25.80	2.83
Victor Strauch (2)	120	207	1.72	19.26	20.00	56.20	15.94
Durbin Morrison	120	118	1.00	12.55	7.75	29.20	8.90
Allan George	120	101	.84	13.05	9.00	26.80	4.75
Jack Westoby	120	84	.70	26.50	10.50	24.60	12.40
Theo. DeMerritt	120	107	.90	9.66	9.25	28.20	9.29
Ralph Marvin	120	115	.96	15.87	9.00	29.60	4.77

Some Pig Raiser Though Only Six

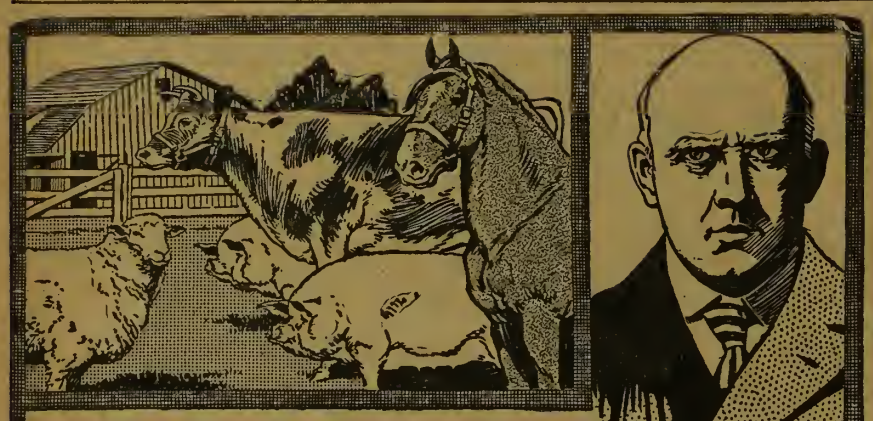
Donald Pineo, six years old, and his first prize pure bred Berkshire pig in Del Paso Heights Boys' Pig Club contest.

Leonard Backer again topped the Franklin Club contest, having repeated his performance of a year ago. While he did not show quite the large gain that two of the other contestants did, he proved to be a more economical feeder and turned out the best profit.

The pigs in the Franklin club contest were registered Berkshires from the herd of the Superior California Farm Lands Company of Willows, and the placings made by J. L. Thatcher, who judged Berkshires at the 1918 state fair: The Franklin results were as follows:

FRANKLIN PIG CLUB

Name	Fed Days	Pounds Gain	Average Daily Gain	Cost Feed & Labor	Cost Pig	Value Pig	Net Profit
Leonard Backer	120	145.0	1.21	$12.76	$ 8.00	$35.00	$14.24
Harry McKenna	120	157.5	1.32	16.62	9.62	38.80	12.56
Paul Sims, Jr.	120	159.0	1.33	19.56	11.75	40.80	9.34
Ralph Ehrhardt	120	95.5	.79	15.75	9.87	26.60	.98
Clarke Kloss	120	105.0	.87	18.88	8.00	27.00	.12
Alice Bevins	120	87.0	.72	.....	8.00	23.40	.....



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Pasture is getting short. Your animals must go on dry feed—hay and grain. It's a big change from the succulent, nutritious grasses of summer which supply the needed laxatives and tonics.

Keep your animals' bowels open and regular—drive out the worms—keep their blood rich—keep their digestive apparatus in order—by feeding Dr. Hess Stock Tonic.

A Conditioner and Worm Expeller

Don't allow your stock to "get off feed" and in a rundown condition. Dr. Hess Stock Tonic eliminates waste and gives appetite, good health and good digestion. It enables animals to get the most benefit out of their feed.

Buy Stock Tonic according to the size of your herd. *Here's a suggestion for your guidance:* Get from your dealer 2 pounds for each average hog, 5 pounds for each horse, cow or steer, to start with, feed as directed and then watch results.

Why Pay the Peddler Twice My Price?

You buy Dr. Hess Stock Tonic at an honest price from a responsible dealer in your own town who guarantees it, and who refunds your money if it does not do as claimed.

25-lb. Pail, $2.50 100-lb. Drum, $8.00

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Dr. Hess Poultry PAN-A-CE-A

Keeps poultry healthy and makes hens lay

Dr. Hess Instant Louse Killer Kills Lice

Carruthers' Farms

Berkshires

— Public Sale —

Live Oak, Calif., Saturday, Aug. 23

70 Head of Boars, Sows and Gilts 70

The offering to be sold on the above date is in every way up to the high standard set by my former sales and will consist of boars, sows and gilts of a character to suit any buyer—the established breeder, the beginner or the man wanting one or more boars to increase the profits from his pork operations. Every animal sold has been immunized against cholera and swine plague by Purity anti-hog cholera serum and mixed vaccines. You run no risk. All are sired by one or another of my famous herd boars—AMES RIVAL 100TH, LIVE OAK CHAMPION and MAYFIELD SUPERBUS.

The sale includes three out-standing show sows; 12 under-a-year sows; 20 young gilts; 30 boars, among them at least 10 high class herd boar prospects.

Two Herd Boars Sell

I will also sell the two-year-old boar LIVE OAK CHAMPION, reserve grand champion at the 1918 state fair, and Mayfield Superbus, a son of the great Superbus. Two better boars will not sell this year.

Write for catalog and other information

W. M. Carruthers Live Oak, Calif.

Ord L. Leachman, Auctioneer

Buy this Bull

Kounias' Aralia King, whose dam is a son of a 30 pound bull with three sisters that produced 1100 pounds butter in a year. Two produced 25 pounds butter eight months after calving. Sire traces direct to Sarcastic Lad. This bull is bred right and priced right. Write for full particulars.

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Butte City Ranch Sale a Success

The big sale held at the Butte City Ranch, Butte City, Saturday, August 2, attracted one of the largest crowds ever seen at a public sale in Northern California and proved to be one of the most successful sales. Few sales have resulted in starting more new breeders. Many men bought their first registered Shorthorns, Berkshires and Shropshire sheep, and in view of the fact that the purpose in mind was to distribute registered foundation animals to as many beginners as possible the owners, Messrs. Dwyer and Guilford, were particularly well pleased.

A better setting for a sale or more complete arrangements for the comfort of the guests would be hard to imagine. The sale was staged in a beautiful grove of oak trees that completely shaded the sale ring throughout the day. At an early hour automobile parties began to arrive and by the time the sale was called the parking place was jammed with cars. The cattle, hogs and sheep were stalled and penned in convenient manner and were presented in pleasing condition. The sale started at 11 o'clock. Fifty head of Berkshires, all young stuff, were snapped up in quick order for an average of $38.50 per head, a very satisfactory valuation considering the age of the offering.

The Shorthorns were offered immediately after lunch. They had been selected with particular reference to the needs of the beginner, only a few mature cows being catalogued. By far the major part of the offering was made up of heifer and bull calves selling as single lots. This fact necessarily cut the apparent average as in most sales of the kind, cows and calves sell together. The reason for the departure from the usual method of selling was to provide for the new breeder. The heaviest individual buyer was Chas. Silva of Sacramento. Mr. Silva is just entering the business and expects to establish a good herd on his farm near Sacramento.

President Lowe of the Jackson County, Oregon, Live Stock Breeders' Association was a persistent bidder on nearly every lot.

Twenty-five cows and calves sold for an average of $504. Ten calves, selling separately sold for an average of $187.

The sale of Shropshire sheep attracted buyers from a wide territory. The sheep were sold in lots to suit the buyer. The entire lot, ewes, rams and lambs averaged near $50 a head.

The sale was managed by C. L. Hughes of the California Breeders' Sales & Pedigree Company, Sacramento. Col. Ben A. Rhoades of Los Angeles wielded the hammer over the Berkshires and Shorthorns and Col. Geo. W. Bell of Tulare took the bids from the ringside and was on the block when the sheep were sold. Much credit for the success of the sale was due the management and the auctioneers.

The sale just held and the future sales planned will mean much to the live stock interests of Glenn County in particular, and the Sacramento Valley in general. A detailed list of buyers of Shorthorns appears below:

Shorthorns

FEMALES

1. Alexandria Maud 3d, Nov., 1915 and C. C.; Chas. Silva, Sacramento, $550.
3. Maplehurst Beauty, Aug., 1, 1912; Chas. Silva, $375.
4. Princess Adeline 19th, Jan., 15, 1919; Chas. Silva, $250.
5. Victor's Lady, Oct., 1, 1913; W. M. Carruthers, Live Oak, $425.
7. Princess Adeline 18th, Jan., 11, 1919; Chas. Silva, $300.
8. Roselawn Mary 57th, Jan., 2, 1912; Jackson County (Ore.), Shorthorn Breeders' Association, Medford, Ore., $410.
9. Cumberland Oddity, Dec., 17, 1918; Chas. Silva, $360.
10. Phyllis Lassie, March 2, 1912 and C. C.; Chas. Silva, $560.
12. Lavender Lina, Dec., 19, 1918; Jackson County S. H. B. A., $200.
13. Jeannetta Primrose, Oct., 20, 1912; Chas. Silva, $300.
14. Princess Adeline 17th, Dec., 2, 1918; Chas. Silva, $250.
15. Princess Adeline 3d, June, 1916; Chas. Silva, $250.
16. Sarah Gloster, Dec., 12, 1918; Chas. Silva, $240.
17. Blossom, Apri 19, 1907; Chas. Silva, $300.
18. White Duchess, Jan., 2, 1914; Jackson Co., S. H. B. A., $460.
20. Clover Leaflet, Jan., 3, 1914, and C. C.; Jackson Co. S. H. B. A., $800.
22. Betsy, Dec., 24, 1913; Jackson Co. S. H. B. A., $425.
23. Bracelet's Beauty 2d, April 29, 1910; Chas. Silva, $325.
24. Knights Duchess, June 20, 1915; Chas. Silva, $310.
25. Cumberland Duchess, Sept., 10, 1918; Chas. Silva, $360.
26. Dorothy, June 15, 1912; Chas. Silva, $350.
27. Imperial Mary, Oct., 11, 1914; Chas. Silva, $350.
29. Mattie 3d, Feb., 4, 1914; W. M. Carruthers, $270.
30. Miss Orpha, April 23, 1916; Chas. Silva, $300.
31. Princess Adeline 4th, July 31, 1916; Geo. Dierssen, Sacramento, $300.
32. Roan Sunset, Feb., 6, 1917 and C. C.; Chas. Silva, $350.
34. Roselawn 52d, Jan., 1911; O. L. Roper, Glenn, $310.
35. Dale's Rose, Dec., 16, 1918; O. L. Roper, $340.
36. Laurel Frantic 33d, April 12, 1912; Jackson Co. S. H. B. A., $485.
37. Knight's Frantic, Feb., 12, 1919; Jackson Co. S. H. B. A., $250.
38. Marcella, May 2, 1918; Geo. E. Dierssen, $300.
39. Scotch Blossom, Oct., 13, 1918; Chas. Silva, $250.
40. Brampton Pride 2d, Dec., 19, 1918; Chas. Silva, $125.
50. Hickory Bud 5th, March 4, 1909; Chas. Silva, $300.
51. Amelia D. 2d, Aug., 20, 1908; Jackson Co. S. H. B. A., $315.
52. Odd Lassie, Sept., 5, 1913; Chas. Silva, $300.

BULLS

41. Roselawn's King, Sept., 27, 1918; Jackson Co. S. H. B. A., $300.
42. Roselawn's Master, Dec., 21, 1918; Jackson Co. S. H. B. A., $300.
43. Royal Rancher 19th, March 25, 1919; Chas. Silva, $300.
44. Royal Rancher 18th, March 24, 1919; C. C. Conroy, Chico, $135.
45. Royal Rancher 17th, March 13, 1919; Jackson Co. S. H. B. A., $160.
46. Master Goods, Jan., 15, 1919; S. J. Boynuda, Willows, $135.
47. Typical Sultan, Dec., 12, 1918; C. C. Conroy, $135.
48. Red Skin, Nov., 1, 1918; Jackson Co. S. H. B. A., $150.
49. Diamond Splendor, Dec. 19, 1918; Chas. Silva, $125.
19. Snow Bank, Feb., 1919; Chas. Silva, $500.

NOTES ON THE BUTTE CITY SALE

Chas. L. Silva of Sacramento was the heaviest buyer of Shorthorns. He secured 25 head of cows and calves and a number of bulls. Mr. Silva is starting a breeding estabishment near Sacramento. He also was a heavy buyer of sheep.

President Lowe of the Jackson County Shorthorns Breeders' Association, one of the progressive organizations of Oregon attended the sale and selected 12 head of Shorthorns. The cattle were bought in the name of the organization and it is planned to hold an auction sometime this fall and distribute the cattle among the members.

Frank Brown, Western representative of the American Shorthorn Breeders' Association, attended the sale and made a short talk on present values being registered in the breed. Brown is president of the Pacific International Live Stock Exposition.

William Bond of Newark was a persistent bidder on the better Shorthorns. Bond also purchased one of the top Berkshire boars.

A Butte City Shetland pony was sold at private sale for shipment to China.

F. W. Leavitt of Willows; Porter and Jones of Butte City and R. S. Seydel of Lincoln were the principal buyers at sale of Berkshires.

The demand for the registered Shropshire sheep was especially keen

Continued on Page 163

Gombault's Caustic Balsam

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NOTHING BUT GOOD RESULTS.

Have used GOMBAULT'S CAUSTIC BALSAM for more than 20 years. It is tha best blister I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safa for the most inexperienced person to use. This is the largest breeding establishment of trotting horses in the world, and use your blister often.—W. H. RAYMOND, Prop. Belmont Park Stock Farm, Belmont Park, Mont.

USED 10 YEARS SUCCESSFULLY.

I have used GOMBAULT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb, ringbone, capped hock and knee, bad ankles, rheumatism, and almost every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and certainly can recommend it.—C. C. CRAMER, Training Stables. 990 Jeanlage Street, New York City.

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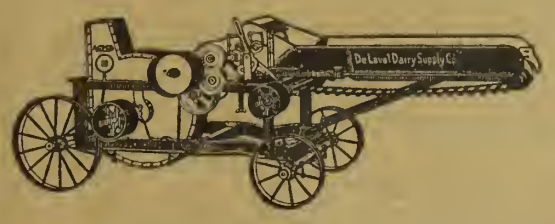

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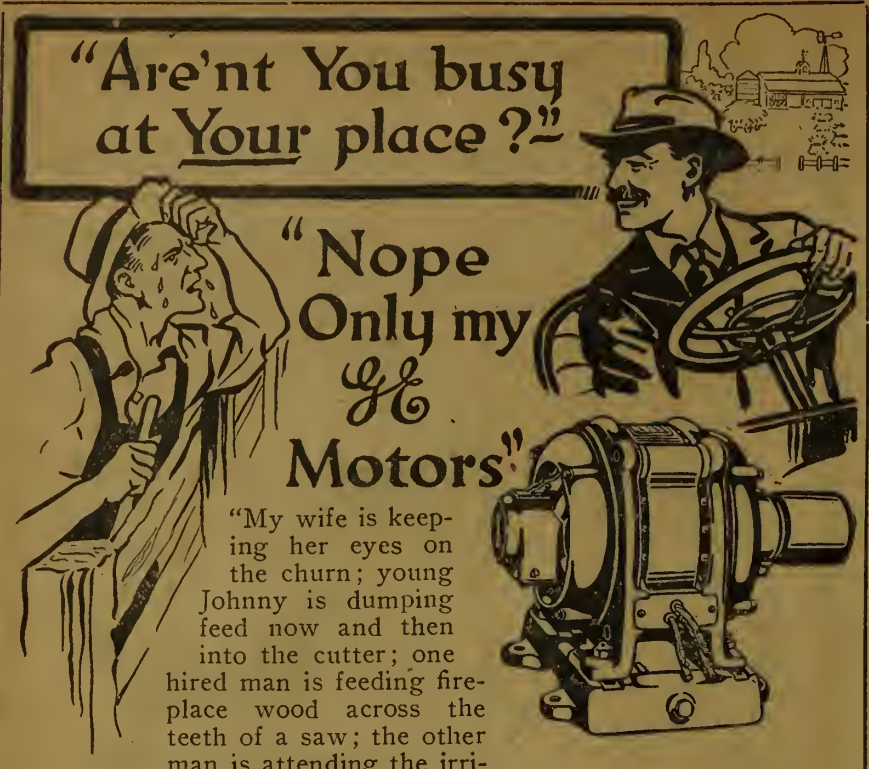

"My wife is keeping her eyes on the churn; young Johnny is dumping feed now and then into the cutter; one hired man is feeding fireplace wood across the teeth of a saw; the other man is attending the irrigation canal in the west field — but the real work in each case is being done by my

G-E Farm Motors"

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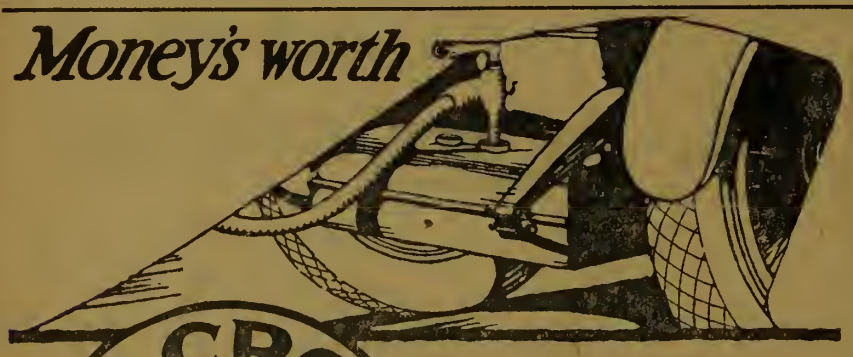

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Pests of the Poultry Yard

By Jean A. Koethen

IF every insect pest which preys on our domestic fowls could suddenly be eliminated the life of the poultryman would be vastly easier. What with the lice that are always present when they are not guarded against—and often when they are—to tickle and bite; what with the mites of various species, which always lie in wait to suck her life blood or find a home under her skin; what with the worms that may, when not discouraged, infest almost every part of the digestive tract, and sometimes the respiratory organs as well; what with the ticks the walls of her home may harbor, and the fleas that infest the litter she scratches in and sometimes the very ground she walks on, ready to spring upon her, the lot of the poor laying hen, confined as she is by wall and fence, is far from desirable. When she is allowed to range she may find means of defending herself. Shut in, she is helpless save as human hands bring her relief.

So far as I know no estimate of the loss these pests inflict yearly on the poultry industry has ever been published, but it must run into the hundreds of thousands of dollars. When we consider the countless numbers of chicks that fall a prey to the blood-thirsty red mite, the thousands of chicks and turkeys that go down before the onslaughts of lice, and the thousands more that drag out a miserable existence because of the depredations of round worms and gape worms, only to give up the fight at last, to say nothing of the adult fowls that yield sooner or later to the persistence of their insidious attacks, it is easy to imagine how great the total loss may be. Many poultry plants, to be sure, are so carefully guarded that vermin never enter. Many more lose only an occasional bird from these causes. The greatest loss is probably among beginners who do not fully realize the number or perseverance of these foes, and on farms where the chickens are left to shift for themselves to a great extent.

The Lusty Louse

A single pair of lice, it is said, allowed to reproduce unhindered will breed 125,000 more in eight weeks. If you examine a hen that has not been dusted or greased for some time you can easily distingulsh the different generations of lice about her vent by their size. Imagine the sufferings of a hen on which 125,000 lice are crawling. How can she possibly be a producer when her vitality is drained by such constant tickling and biting? A hen that is dusted occasionally and allowed a dust bath where she may wallow daily may not be absolutely free from lice, but she is not greatly inconvenienced. It is the hen that is never dusted that after a while begins to droop and grow pale of comb and rough of plumage. She may live on for months or even years but she does not produce.

Chicks and young turkeys are much more susceptible to attacks of lice, especially of head lice, and are frequently killed by them. Ducks and geese have each their own species of louse, which are negligible in their effect on the birds.

Treatments for Lice

Dusting, dipping and greasing are the three methods of treatment. Many good louse powders are on the market, but none better than the Lowry powder recommended by experiment stations and easily made at home. It consists of 3 parts gasoline and 1 part crude carbolic acid or cresol, with enough plaster of Paris added to take up all the gasoline. For dipping use a 5 per cent solution of creolin, Zenoleum or Kreso dip. Blue ointment, diluted with an equal amount of vaseline, is used by many for greasing around the vent, but it is poisonous and must be carefully handled.

Young chicks should be greased on the head and under the wings with pure lard or dusted thoroughly with buhach or pyrethrum insect powder. Baby turkeys should be dusted with one of these powders as soon as they are put in the coop, and once a week thereafter.

The Mighty Mite

The common and troublesome mite is the little red mite (derbanyssus gallinae) which hides under the roosts and about the nests of all poultry houses that are not frequently sprayed or painted with some insecticide. There are two varieties of these mites, and both are called "chiggers" or "juggers" in some parts of the country, but they have the same characteristics. They are grey when empty, blue or red as they become filled with blood, and are seen as little fine gray patches or splotches where they breed. They are rarely found on the body of the hen in daylight, but swarm over her at night by the million, filling their greedy bodies with her life blood.

Treatment for Mites

The following are tested solutions for painting or spraying the walls and roosts of poultry houses. It is a good plan to use the garden hose before the insecticide is applied.

Five per cent carbolic acid solution in water.

One per cent Napthalene in kerosene.

Pure crude carbolic acid.

One per cent Kreso dip.

Two per cent Kreso dip.

Ten per cent crude carbolic acid in kerosene is also effective, and there are a good many cresol preparations. Carbolineum is recommended by the Storrs experiment station. All coal-tar preparations are good, but they must be applied with thoroughness to make sure that every bit of the infested surface is touched and used early in the day that the fumes have time to evaporate before the birds go to roost.

The Scaly-Leg Mite

Different in its character and mode of attack, but still a mite, is the parasite which causes scaly legs or foot mange. It attacks both chickens and turkeys, burrowing under the scales of the legs until at first small blisters and finally large scaly masses appear, and while it is readily passed from bird to bird, always originates in filthy yards. These scales are treated by soaking the legs in warm soapy

POULTRYMAN'S CALENDAR—AUGUST, THE VACATION MONTH

Strictly speaking, the poultryman never gets a vacation. Nevertheless, there are times when he can slack up a little and of these August is the best.

Feeding is a task for 365 days in the year, but feeding in August can be left to any one with sufficient intelligence to follow directions. It calls for obedience, not for discretion. The pullets are on laying rations, early cockerels marketed, the most conspicuous slackers culled out. Now is the time for father and mother to leave the boys and girls in charge and slip away for a breath of sea air.

Now is the time to put the breeders on green, shady range and let them take life easy while they molt.

Now is the time to put the fat hens on a light ration of greens and bulky food, and train them down.

Now is the time to put the pullets that are maturing too rapidly on a maintenance ration of bran and beef scrap in order to delay too early production and consequent fall molting.

There is always something to do, but if we can't go easy, let's go as easy as we can.

water, then scrubbing with gasoline, kerosene, kerosene emulsion, or lime and sulphur dip which is made by mixing 1-3 pound unslaked lime, 1 pound sulphur and 4 gallons water. This is boiled two hours and the amount lost by evaporation made up by adding water. A more simple remedy is equal parts lard and sulphur, rubbed well into the legs after they have been softened by soaking. This must be repeated several times to be effective.

Ticks and Fleas

The chicken tick (Argas miniatus) and the chicken bug or dove-cote bug (Acanthia inodora) are both blood suckers, but the chicken bug, or bed bug of poultry as it is called, lives on roosts and walls and in the nests, coming out at night to get its living from the body of the chicken, while the tick not only lives in the house, but sometimes is found on the body of the chicken as well. Both these pests, which fortunately find a foothold only in very filthy and neglected houses and then not in all localities, must be combated by strict sanitary measures. They are rarely if ever found in houses that are frequently sprayed or painted, and any of the preparations which prevent mite infestation ought to keep out ticks. Ticks on the body of the bird are sometimes killed by touching each tick with a feather or brush dipped in corrosive sublimate, but this is a troublesome and rather dangerous operation, and it is probable that any of the dips recommended for lice would have the same effect. When a house is once infested with ticks it is very difficult to get rid of them.

The ordinary chicken flea is seen only occasionally in California. When found on the bodies of the fowls it may be destroyed by dipping in any of the preparations recommended above, and a thorough cleaning and disinfecting as for mites will usually keep them out of houses.

The stick-tight flea, which is found particularly in sandy soil and lives by burrowing into the combs and wattles of the birds, where it sticks tight and sucks the blood, is successfully treated with repeated applications of lard or vaseline. A little sulphur may be mixed with the lard, but grease alone usualy kills the fleas.

Worms

Of the numerous species of worms which inhabit the intestines of fowls only two need be mentioned here, round worms and tape worms. The round worm, which is most common, has been successfully treated at the Davis University Farm by mixing tobacco dust in the dry mash in the proportion of 1 pound of tobacco dust to 50 pounds of dry mash. This may be left before the birds till all traces of worms have disappeared. This remedy is far more easily used than the time-honored dose of oil of turpentine and is said to be more efficacious. Tape worms are treated by giving ½ tablespoon of Epsom salts, and following this two or three teaspoons of turpentine. A few teaspoons of a decoction of pumpkin seeds followed by a heaping teaspoon of Epsom salts is also recommended, as is powdered areca nut in 3-grain doses and thymol in 1-grain doses.

A parasite known as the gizzard worm is sometimes found in the walls of the gizzard. It is treated with turpentine and olive oil, a teaspoon of turpentine followed by a tablespoon of olive oil, or by the tobacco treatment recommended for round worms.

The gape worm, which often finds its way into the wind pipe of young chickens, causing strangulation and death, comes from contaminated soil and can only be treated by removing with a looped or doubled horsehair or with a feather from which all the barbs but the tip have been removed. Force the feather or horsehair, which has been previously dipped in turpentine, down the throat past the worms, then give it a quick twist and withdraw. This generally loosens the mass of worms.

Plumbing is becoming a necessity in both city and country homes, not only for comfort and convenience but even more for health and cleanliness. It also provides for the proper disposal of the wastes of the household, which should by no means be neglected.

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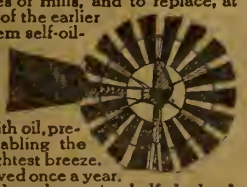

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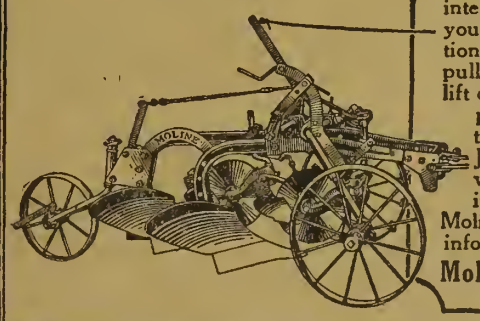

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For Sale—Silver Campines, baby chicks, young cockerels, hatching eggs, call at Silver Campine Ranch, quarter mile south of Clearwater, on boulevard.

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Exchange 1 60-egg incubator new, for 2 young laying hens. No. 27 Shawmut, California.

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Box 501, Fowler, California. Write for circular, prices on seed and plants, Sudan, Dwarf Milo Maize, Honey Sorghum, Amber Cane.

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; Inspection Invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

RABBITS

For Sale Flemish Giants—Fine pedigreed Flemish, black and steels; husky healthy stock; a few breeding age, $4.00 each; grand young stock 4 to 5 months, $3.50 each; nothing cheap but the price about this stock. HALE PRATHER, Ukiah, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

Raise Rabbits for us. We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

FERTILIZER

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101. Watsonville.

MULES

For Sale at a Greatly Reduced Price—I am closing out my breeding business and will sell the following almost at your own price—must be sold soon. One registered Jack, a good one. Sixteen good brood mares, all bred. Eight head of two year old colts. Seven suckling mules. All well bred animals. Chas. Hubbard, Box 96, Riverdale, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLUETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

GOATS

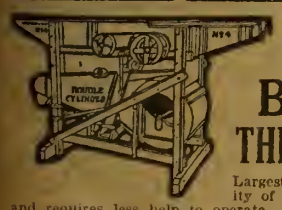
For Sale — Fine Vigorous Togg. Buck Kid 2 months old; sire pure bred Togg. "Prince Edward 1059;" dam 7-8 Togg. A. M. Starr, 645 Olive Ave., Long Beach, California.

PIGEONS

Paradise Strain of White King Pigeons. Young unmated birds $2.00 a pair; old mated birds $3.00 a pair. Paradise Valley Poultry Ranch, National City, California.

JACKS AND JENNETS

For Sale or will exchange for land fine bunch black registered Jacks and Jennets. No better bunch to be found in California. A. L. Allen, Perris, California.



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California Implement Co.

122-124 N. Los Angeles St. Los Angeles

Over 25 per cent of the ranchers in the Tulare district have erected, or wil erect, new homes during the present year.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Snuffles

This winter a few of my rabbits began to sneeze, then more were affected until now half of them show the same trouble. Pens are on the ground and large enough so they have plenty of room to run. When they sneeze a whitish discharge comes from their nostrils and they rub their noses with their feet. They look fat and eat like hogs. Do you think they have the snuffles?—Subscriber, San Luis Obispo.

This query was referred to W. E. Lloyd of the University of California, and he answers:

"This is undoubtedly snuffles. Snuffles is, in the beginning, merely a cold caused usually by improper housing or improper sanitation but there might be many causes for the condition. Snuffles develops from neglect of the cold, and the thin discharge from the nostrils becomes a thick mucus, which is the most difficult of all rabbit diseases to cure and is highly infectious. The animals should be kept in a warm hutch free from drafts and a mixture of ten drops of creolin to one ounce of olive oil kept on hand. Four drops of this preparation should be added to each nostril once a day. This may be done with a small machine oil can. If the discharge is very bad it will also be well to wash the nose in warm water, to which a few drops of vinegar has been added, before applying the creolin and olive oil.

Trees Out of Condition

1. What is the cause of yellow, dying leaves on ten year old apple trees at this season, which otherwise seem vigorous? Not all the trees are so affected. 2. The orchard does not produce much, though tilled each year. It has no irrigation. It is situated on the side of a hill but the soil is deep and holds rain moisture well. The trees make good growth each year, usually being filled with bloom though they did not have many this year, but these blossoms fail to produce apples. Have not fertilized but planted intercrop of Blackeye beans in a portion of the orchard for the past two years. A portion of the same slope is in 'cots, peaches and prunes which do well every other year. We have also a few walnut trees which this year have a very scattering, irregular crop, although trees appear healthy.—Subscriber, Alpine.

The answer to the first question is as impossible to give with any degree of accuracy as is the question as to what causes a pale face in a human being. In that case it may be simply a sudden fright or it may be constitutional. However from the second question, or rather statement of conditions under which these trees are growing, we would guess that this orchard is suffering from lack of moisture. No matter how fine a soil is to retain moisture, when the rainfall is as short as it is this year there is little or no water in the lower depths to be retained and the intercrop which was grown has presumably exhausted that little moisture. In a year of such shortage of moisture the planting of intercrop should have been postponed until another year and every attention given to the conservation of the moisture for the use of these trees. Presumably next year's crop will be very light. This because the lack of moisture of this year will prevent the securing of sufficient vigor for the buds which are now forming for next year's crop. It takes fall moisture to give vigor to next year's growth. Many blossoms with little vigor will probably set an exceedingly small crop of fruits vigorous enough to mature.

Renewing Strawberries

Will strawberries bear just as well the fourth year as they do the third, or should they be plowed under after the third year,' and a new patch planted? When is the best time to plant? What is a good fertilizer and when should it be applied? — Subscriber, Pomona.

No, if made to produce to the limit for three years strawberry plants will be so reduced in vigor by the fourth year that they will not produce as heavily as the third year. Planting is usually done in December or January. The best fertilizer is stable manure. We have known of magnificent returns on the investment to come from the application of 100 tons of stable manure per acre. It should be put on the ground and plowed under some months before planting time. Fertilizing of strawberries after plauting is not generally satisfactory.

The application of 100 tons of manure per acre calls for intensive culture, in fact, intensive gardening knowledge, to justify. It is only mentioned as an instance of what one man did and made money in the doing. A much smaller application will yield good returns.

This Month in the Ornamental Garden

Southern California

THE one thing necessary to put into our soil this month is water. There has been no season for years when the garden required such constant irrigation. If water is under pressure, don't sprinkle, at least not as a rule, but lay the hose on the ground or conduct the water in ditches. We will not say that the water goes twice as far when used in this way, but certainly it is much more economical. A few days of neglect or withholding water supply during August means destruction of vitality and beauty, even loss of life of many plants.

Let the cultivation be thorough, though shallow, and if possible to apply mulches they aid in lowering the soil temperature and holding the moisture.

Seed for hardy perennials may be sown. Most varieties sown now will flower next year. Amongst these are cineraria, columbine, calendula, marigold, Canterbury bell, pansy, primula, petunia and even verbena. By the way, verbenas give good return for the effort expended on them, and by a little care the planting may be increased, once the color is known to be satisfactory, through rooting of runners.

Leave roses alone this month. Withhold the water until September. Dahlias call for an immense amount of water these hot days. If they are not sufficiently supplied they wither and look as if a fire had scorched them Where tips have been injured by drouth they may be renewed by cutting back severely, giving liberal supply of water and fertility, and be sure the watering is kept up. You will be well repaid by the wealth of bloom which comes when the sun does not burn so fiercely. Chrysanthemums are not looking at all attractive this month, but constant and regular watering is required if much bloom is to be expected later.

Northern California

By A. R. Gould

AUGUST is usually a trying month in this section, and while the water problem is one which must be met it is necessary to know just where to save and still be able to retain the stock for another year. Where it is necessary to conserve, careful note should be made of such flowers as have perhaps done their duty for the season. Certain perennials which flowered early in the year may now be rested and will require hardly any water. Then well established beds of ivy, periwinkle or vinca, etc., may also be given less water. Roses after being cut back can very well do without water for several weeks if there really is lack of water while lippia lawns will also stand a considerable dry period, but on no account should newly planted beds of lippia or new lawns of grass be dried out; they need constant sprinkling. Then again all plants having thick succulent leaves, such as cactus, will live for many months without water, and it is foolish to waste water on them. All these pointers are important and a little practical knowledge will go a long way towards solving the problem of water. The more foliage a plant has to support the more water it will require, and you can use your judgment accordingly. It is also as essential to make careful records of plant pests in this department as is the case in the vegetable section as mentioned elsewhere. There is always scope for investigation and while our state and federal officials of the horticultural and agricultural departments do their best to control serious pests assistance from garden owners with regard to data obtained is always welcome, hence the need for constant vigilance.

The most troublesome this month among the insect pests are caterpillars, red spider, green and black aphis and mealy bug, and these can be controlled by spraying. The first named may be poisoned by lead arsenate and red spider by a sulphur spray; aphis and mealy bug, by a strong nicotine solution to which soft soap has been added.

Seed Collecting

While it is not always possible to save seed of every subject grown nor is it worth while as it is the business of the seedsman to keep the seed pure and flowers true from seed, as they have the facilities to do, it often happens that we are anxious to secure certain colors and strains of a particular flower to grow a quantity of plants for next season. Then it is that we preserve the type. Some plants produce seed much more freely than others. Seeds of the following may be collected now: delphiniums, columbine, geum, myosotis, viola, pansy, stocks, and gaillardia.

Dahlias

Tubers of these may now be hard to secure, but there is still time to plant, and strong beautiful seedlings may produce flowers this year. Pinch out the small buds on the older plants allowing only one to develop at each point. This method will produce larger flowers. On young shoots just coming through the ground it will be necessary to guard against cut worms.

Hanging Baskets

At this season of the year these baskets, especially if planted with asparagus sprengeri fern, will need watering at least twice a week with liquid manure as they become impoverished. New baskets may also be planted with the trailing lobelia, ivy geraniums, or lotus. The soil should be fairly rich and layers of moss put around inside the basket. The baskets may be of wire or rustic wood.

Propagation

The following may be propagated by cuttings: geraniums, heather, privet, mesembryanthemum, roses, streptosolon, ivy and vinca. Sand is an excellent rooting medium and they should not be placed in the full sun.

Subjects for Shady Places

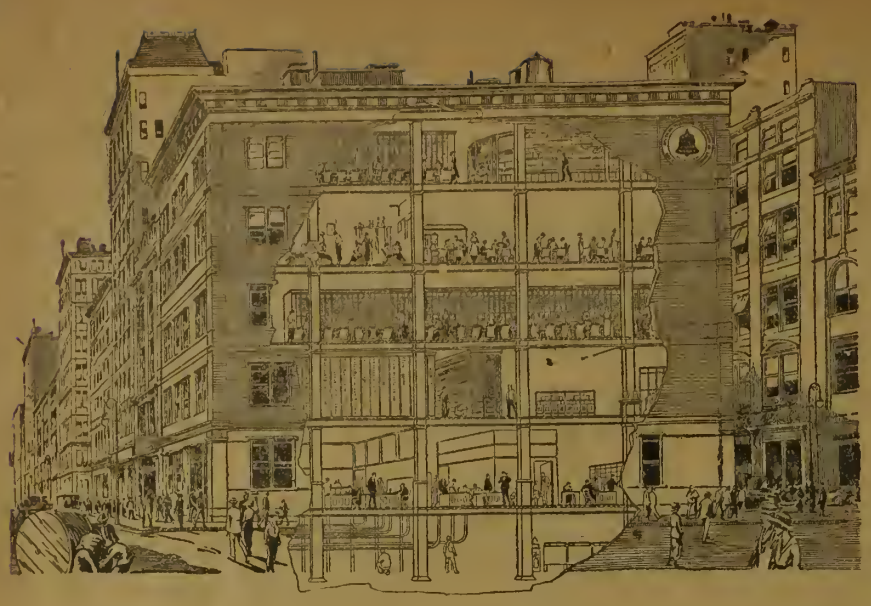
Cinerarias take first place in this class as they are more than useful. Seed of these should now be sown in seed beds of fine soil and later they may be transplanted. Polyanthus, or primulas, are also very good subjects and may be sown in shallow boxes. Digitalis or foxgloves are charming shade loving subjects and may be sown at once.

Sweet Peas—Winter Flowering

This new type has become very popular for winter decoration and the following varieties may be sown now: Early Snowflake, Mrs. A. A. Saach, Christmas Red, Marrawa and Early Morning Star. Sow in deeply manured trenches.

Chrysanthemums

These will need plenty of water and twice weekly an application of liquid manure. For specimen flowers the plants will require disbudding, leaving the terminal bud to develop. Spray for aphis with Black leaf 40.



The Great Task of Construction

With the coming of peace the Bell System faced an enormous construction program. Conditions arising from war resulted in the wiping out of the reserve equipment normally maintained, and necessary to give prompt connection to new subscribers. The release of industry and accumulated growth of population now makes telephone demands almost overwhelming.

Telephone construction, including buildings, switchboards, conduits, cables and toll lines, must, from its inherent nature, be undertaken in large units. A metropolitan switchboard, with its tens of thousands of parts, may require from two to three years to construct and install.

Only great extension can meet the present excess burden of traffic and provide for future requirements. Extension which cares for immediate demand, only, is uneconomical and calls for continuous work of such a character as to be frequently detrimental to the service.

During the war the Bell System devoted all its margin to the needs of the Government. The great task of getting back to normal prewar excellence of operation requires the reestablishment of an economic operating margin capable of taking care of a larger growth than has ever before confronted the Bell System.

Construction is being pushed to the limit of men and materials; while every effort is being made to provide the best, present service.

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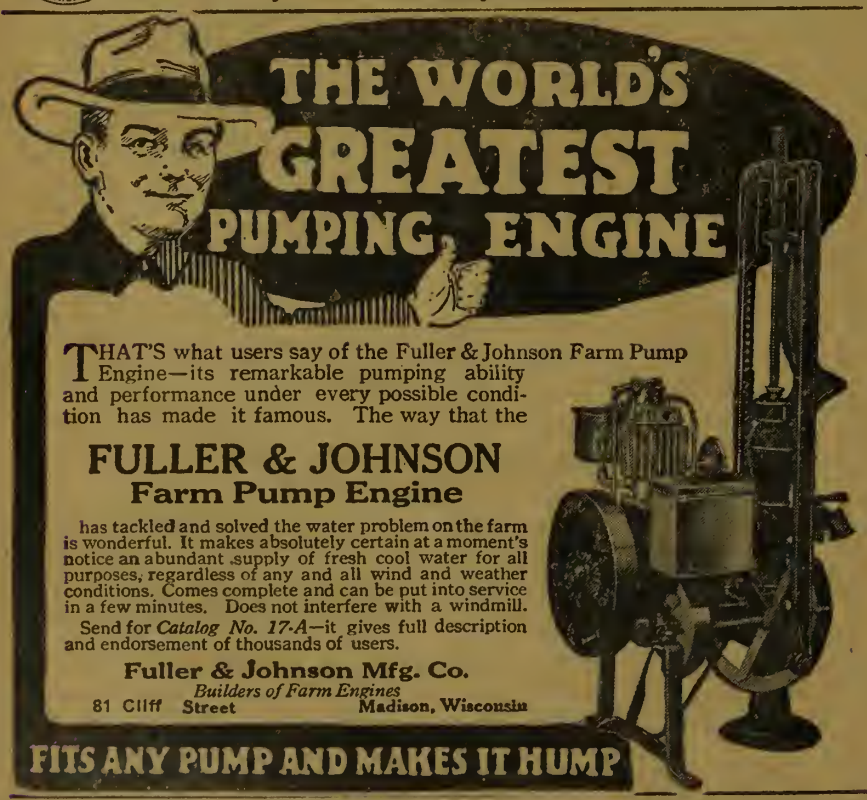
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Household Department

PIRATE, THEN AND NOW

In days of old the pirate bold
Who sailed the open main
Swept aft and fore good ships galore
That promised golden gain.

He led the life, with chase and strife,
Of a man who knew no fear;
'Twas the golden age, tells many a page
Of the bullying buccaneer.

Alas! today the pirate foy
Is of a different breed;
Himself well hid by the market lid,
He gluts his grasping greed.

Our robber sly, with the hungry eye,
Works guile in place of gun;
Of schemes unspeakable the sneak
Is full from sun to sun.

The widow's loaf this crawling oaf
Lifts with a crafty wink
And boosts the price, from ice to rice,
Of a Nation's food and drink.

The clothes we wear, our gloves, per pair,
The shoes that tramp the land,
All things in line pay tribute fine
To the Knight of the Hidden Hand.

If stand we must, despite our trust,
Some robber on our track,
Speed this one's end, and, pitying, send
The old-time pirate back.

—E. W. O.

HOUSEHOLD PESTS

FREEDOM from household pests is chiefly a matter of house cleaning or rather of a clean house. Well screened windows and doors will keep out flies and mosquitoes and thorough cleaning and airing of dark corners will discourage most of the other pests.

Ants

This year seems to be especially favorable to the ants, many reporting that they are literally carrying away whole jars of marmalade or other sweets and are especially persistent in attacking meats. Constant attention given to them, however, makes them very easy to control.

As soon as they appear observe their trail and follow them to their hole. Boiling water or a teacup of gasoline poured in the hole will end the attacks from that particular source. Possibly a better destroyer to use in this way is a solution of cyanide of potassium. The fumes which arise from the solution of, say, 1 ounce to 1 pint of water are very effective.

Note also Formulas 23, 24 and 25.

A solution of corrosive sublimate in wood alcohol wiped around shelf edges, floors and windows is a good repellant. One or two applications during the season are sufficient.

Another repellant which will absolutely keep ants out of the house, if used persistently, is buhach. It's a California product and if kept on convenient shelf in small bellows duster it may be blown about the shelves and rooms in such fine dust that it is scarcely visible when it settles on the floor. This treatment must be given almost daily for the repellant power is soon lost.

There are pastes, and syrups and sprays put up as regular trade preparations which are most effective. When using pastes, and syrups do not be impatient. Give them time, for their effectiveness is not in poisoning of the ant which carries them away but the young in the nests.

Flies

Swat the fly. Keep a swatter on a convenient nail and dispose at once of every fly that passes the screen. They are disease carriers, breed with awful rapidity and have no place in the human habitation. So long as life itself may depend upon it, it is worth while to keep screens in perfect repair.

Sticky fly paper and poisoned fly paper are effective traps. About the barn or dairy big fly traps should be maintained.

Flies may be killed in rooms by burning fresh buhach or by dropping a little carbolic acid on a hot shovel. A 2 per cent solution of formaldehyde makes an excellent fly poison. Add to it a bit of sugar to make most effective.

Mosquitoes

Mosquitoes will breed in any standing water, whether it is cesspool or a few tiny drops in a rusty tin can, therefore do not let water stand anywhere in summer time. The cesspool may be made innocuous as a breeding ground by pouring a little kerosene down the pipe. Mosquities will not deposit eggs on the surface of water that is kept in motion; therefore, tanks holding drinking water may be made mosquito proof by keeping the surface of the water agitated by a small wheel connected with the windmill. Pools should be drained where possible or should have a thin film of crude oil and kerosene, half and half, poured over them occasionally. This will destroy eggs and larvae. Screens at doors and windows of course are the best means of keeping mosquitoes out of the house. Concentrated ammonia neutralizes the poison of the bite.

Fleas

If floors are washed with hot soap suds containing a little kerosene or gasoline and rugs shaken and aired frequently there is little likelihood of fleas overrunning the house. An excellent flea trap is made by a sheet of fly papr in the center of which is placed a small bit of raw meat. Where cats and dogs bring fleas into the house rubbing fresh buhach into their fur will stupefy the fleas so that they will drop off If an old newspaper is placed under the animal while you are treating it the fleas may be gathered up and burned.

Frequent baths for the pets help to keep them free of fleas. Fleas breed rapidly in dust in cracks in floors or similar places. Where animals are seriously infested creolin may be added to baths. This is a commercial preparation to be had at any drug store. Use at the rate of 4 teaspoons to 1 quart of water; if large quantity is wanted, 2 per cent solution.

Cockroaches

Cockroaches, water bugs and black crickets are always attracted to dark or damp places about the plumbing. Fill all cracks with cement or dust with chloride of lime, powdered borax or fresh buhach.

Moths and Buffalo Bugs

Moths and buffalo bugs (carpet beetles) sometimes drive the most careful housekeeper to desperation. Clean, air and dust as you will the pests keep coming. The only way to save woolen clothing hung in closets is to inspect frequently, shake and air. Every closet should have a window if possible, and the window should be opened often. Woolens or furs that are to be packed should first be thoroughly sunned and aired, then wrapped tightly in paper. If boxes are used all openings should be pasted with strips of paper. Boxes lined with tarred roofing paper are moth proof. Woodwork of closets should be wiped with water to which a little turpentine has been added. Benzine or kerosene sprayed in cracks will kill the pests.

The Buffalo bugs or carpet beetles tuck themselves away in dark cracks in the floors or behind baseboards. Hot water, kerosene or benzine poured into the cracks will destroy them or it is better, of course, to fill up cracks with paint or putty, or something of that nature. Both moths and carpet beetles may be trapped in closets by laying old woolen cloths on the floor and frequently collecting and burning.

Meal Moths, Worms, Weevils, Etc.

Unless eggs of these pests already exist in meal or flour there will be no trouble from them if foods are kept in dry, tightly closed receptacles. Once they have entered about the only treatment possible is fumigation with carbon bisulphide. In fumigating a barrel of flour, for instance, place one-half to a full teacup of carbon bisulphide on top of the flour and cover tightly. No light should be brought near during the process of fumigation as the gas given off by this liquid is very inflammable. The gas is heavy and will penetrate down through the contents of the barrel. In very severe infestations a second tratment may be necessary. This treatment is also effective for weevils in peas or beans. It does not in any way harm or affect the food value of the materials treated.

Rats and Mice

When one is building concrete foundations and proper precautions reduce

the mice pest to a minimum, but at times they will follow the human into his habitation. Next to a cat the best mouse catcher is the small five cent spring trap which is sure death. It is worth while to keep these set at convenient places. A bit of Roquefort or other smelly cheese packed in the tiny hole on the trigger will fetch them every time.

For rats one of the best poisons is barium carbonate. Mix with 4 parts meal or flour and 1 part of the mineral, or ordinary oat meal ⅞ and barium carbonate ⅛. Place a bit in rat's runway, a small teaspoon at each place. Strychnine is effective but so swift in action that the rats may die in their holes. If used insert in pieces of raw meat and protect from domestic animals. In any ordinary quantities barium carbonate is not injurious to the larger animals.

Bedbugs

Of course we have no bedbugs in California. Occasionally, however, a traveler comes in over the overland and visits for a short time. Boiling water or corrosive sublimate will search out these pests in the tiniest cracks. The corrosive sublimate should be dissolved in alcohol. Fresh buhach powdered into cracks is also effective.

Where they have become settled in cracks in woodwork, etc., the only effective method of disposing of them is fumigation with hydrocyanic acid gas. If possible have this done by a professional for the gas has sometimes proved deadly to the human if breathed in any quantity. If the gas is made in the room use 1 ounce sodium cyanide, 1½ fluid ounces sulphuric acid, 2 ounces water for every 100 cubic feet of space in the house or room to be treated.

Silver Fish

Pyrethrum, or buhach, scattered back of the bookshelves will prevent this pest from destroying paper, especially where paper is glazed, or if the pest has already made its appearance, spray the shelf back of the books with sodium fluoride. A good poison is starch paste in which arsenic is mixed. Spread this paste on cardboard and leave where the pests appear. Perfect cleanliness and frequent airing are distasteful to these pests.

TO CLEAN WINDOW SHADES

Apply thick soap suds to the shade with a sponge wrung almost dry so as not to water-soak the shade and rub briskly. The best way of accomplishing this is to stretch out the shade on a flat surface. If the shade will not wash well, apply Fuller's earth or cornmeal with a stiff brush. Old shades may be made over by painting any desired color; the paint improves the appearance and gives them body. Use but a thin coating of paint and have it perfectly dry before rehanging.

TO WASH CORDUROY

Do not rub or wring as either will flatten the pile. Wash in warm suds, rubbing soiled spots, if necessary, very lightly in the hands. If possible clean by letting stand in the water and sousing up and down in suds. Rinse in several waters and hang dripping on the line. Hang perfectly straight as of course you will not iron the material. When dry brush up the pile with stiff brush.

TO PROLONG LIFE OF LINOLEUM

A thin coat of varnish applied to the linoleum will lengthen its life. It may be applied when new, or when the linoleum begins to show signs of wear a light varnishing will brighten its appearance and add to its wearing qualities.

APPLE KETCHUP

Quarter, pare, and core 12 sour apples. Put in a saucepan, cover with water, and let simmer until soft; nearly all of the water should be evaporated; rub through a sieve and add the following to each quart of pulp: One cup of sugar, one teaspoon of cloves, one teaspoon of mustard, two teaspoons of cinnamon, and add one tablespoon of salt, two cups of vinegar, and two grated onions. Bring the ketchup to a boil, and let simmer gently for one hour. Bottle, cork and seal.

COULDN'T BE OTHERWISE

"Are you of the opinion, James," asked a slim-looking man of his companion, "that Dr. Smith's medicine does any good?"

"Not unless you follow the directions?"

"What are the directions?"

"Keep the bottle tightly corked."

NOT FAMILIAR

"What kind of a looking person is your hired man, Ezra?"

"I s'pose you'd call him an open-faced feller," replied Farmer Hornbeak. "He yawns so much that once when I met him with his mouth closed I didn't know him."

HOUSEHOLD THRIFT

A daily and weekly plan for housework, reducing the hours of working day where feasible as has been done in industry; saving time by simple living, by convenient work rooms, by efficient utensils and working equipment, by sharing work between members of family.

HIS APPETITE

She: "That new hired man has an appetite like an elephant?"

Farmer: "Yes, he tries that hard to get out of doing work that it makes him just ravenous when he sits down at the table."

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You should not be guided by cheap prices or special inducements. Pianos, like everything else, are priced according to their intrinsic worth. If you do not possess expert knowledge of piano making you must rely greatly on the Piano Dealer. Take greater care in selecting the Dealer then the Piano. It is certainly to your interest to go to a dealer who has the reputation of carrying only pianos of merit and true musical worth, who is known to price his pianos consistently and who has only one price for everybody.

We carry a number of well known makes, each the very best in their grade. Prices of new pianos range from $400 upward; good "used" pianos from $200 upward. If desired, we arrange convenient terms of payment.

We invite you to call at any of our stores—or write us asking for illustrated catalogs and prices.

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Los Angeles Markets

Los Angeles, August 6, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 58 lb.; prices to retail merchants in 1-lb. squares, 58@59.

Dairy Exchange prices last week on extras:

July	30	31	Aug. 1	2	4	5
'19 ...	58	58	59	59	59	59

CHEESE

Brokers' prices:

California fresh, lb., 33; price to retail merchants, 35@36.

EGGS

Fresh extras, Produce Exchange closing price 58 dozen, price to retail merchants, 61 dozen; case count, Produce Exchange closing price, 55 dozen; price to retail merchants, 59 dozen; pullets, Produce Exchange closing price, 53 dozen; price to retail merchants 49.

Dairy Exchange prires last week on extras:

July	30	31	Aug. 1	2	4	5
'19 ...	55	55	55	55	56	58

POULTRY

Prices to producers: Hens, 22@23; broilers, 27; fryers, 27; roasters, 30; old roosters, 10; capons, 42; ducks, 27; ducklings, 27; geese, 25; turkeys, 34@ 40; squabs, 45; pigeons, doz., 1.00.

Belgian hares, live, 13.

POTATOES AND ONIONS

Potatoes: Demand and movement moderate, market steady, Stockton Burbanks, sacked per 100 lbs., 2.25@2.50. New stock Stockton Burbanks, 3.25@3.40. Homegrown White Rose 1.00@1.10 per lug box; sacked per 100 lbs., No. 1 grade 2.50@3.00, No. 2 grade 2.00@2.50.

Sweets, lb., 6@7.

Onions: Demand and movement moderate. Homegrown White Globe 1.00@1.20 per lug box; 3.25@3.50 per cwt. Yellow varieties 2.75@3.00 per cwt.; lug 1.00@1.10.

VEGETABLES

These are the actual prices obtained August 5, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beets, doz., bunches, 40.

Beans: Kentucky Wonders, 2½@3 lb., practically no demand.

Carrots, doz., 35@40.

Cucumbers: Local lug, 20@25.

Celery: Local, best. 1.00@1.25 dozen bunches, smaller 75. Crates, best, 4.25@4.50.

Corn: Roasting ears, 50@65 per lug of 3 dozen.

Eggplant, best, lb., 6@7.

Parsley, doz., 15.

Radishes: Round Red 15@20 per dozen bunches. Long White, 30@35 per dozen bunches. Long Red 20 per dozen bunches.

Peas: Local, lb., 10@11; Northern, 9@10.

Rhubarb: Local Giant Cherry, 1.25@1.50 per packed box. Strawberry, fancy 1.00@1.35 apple box.

Spinach, doz., 20.

Squash: Local summer, lug, 40@45.

Tomatoes: Lug , ripes 15@25; medium 40@50; turning 50@60.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained August 5, by Los Angeles wholesalers in restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: New crop, Alexanders, apple boxes, No. 1, 3.00; Gravenstein, bulk, 6@7 lb.; packed, 3.25@3.50; Red Astrachans, bulk 4@5 lb.

Blackberries: Cr. 30 baskets, 4.25@4.50.

Cantaloupes: No carlot arrivals. Demand and movement moderate, market firm. Sales direct to retailers. San Fernando, Green meats, standards 45s best unwrapped, 1.00@1.25; Tip Tops 1.00@1.35. Imperial Valley, Honey Dew, standard crates 1.25@1.35.

Figs, per 10 lb box, 1.75@2.00.

Grapes: Demand and movement good. Quality and condition generally good. Sales direct to retailers: Coachella and Imperial Valley: Thompson Seedless, lug boxes best 5@6 lb.

Loganberries: 4.50@5.00 per cr. of 30 baskets.

Nectarines, lb., 9.

Peaches: Demand and movement good, market firm. Sales to retailers: Locals, various varieties, bulk, mostly 4@5 lb. Northern Early Crawfords and Early Albertas, quality and condition good, bulk 30 lb lugs, 5@7 lb.

Pears: Demand and movement good, market firm. Sales direct to retailers: Northern Bartletts, standard boxes 3.50@3.75; bulk, fancy 8@9 lb.; choice 5@7 lb.

Pineapples, lb., 13@15.

Plums: Demand and movement good. Tragedies, 5½@7 lb., Satsumas 5@6 lb., Wicksons 6@6½.

Raspberries: Cr. 30 boxes, 4.50@5.00.

Strawberries: Cr. local, 5.00@7.00, best 2.00@2.25; poorer, low as 1.00.

Watermelons: Demand and movement moderate, quality and condition generally good. Local Chileans 1½, Northern Tom Watsons 1@1½; Angelenos, 1@1½.

Lemons: Fancy packed, 6.00@6.75; local pack, 4.00@4.50; loose, some tree ripe, 3.00@4.00.

Oranges: Valencias, medium fancy, 5.25@5.75; local pack, 3.00@4.00.

Grapefruit: Local fancy, 2.50@4.00 bx.; poorer, 1.50 up.

HONEY

Supplies very light. Demand and movement good, market firm. Carloads f. o. b. usual terms: Per lb. White Orange Blossom mostly 20 cents; White Sage 20; Extra Light Amber Sage 19½; Light Amber Sage 17½; Light Amber Alfalfa 15@16. Beeswax: No sales reported.

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	18.00@22.00
Barley	16.00@21.00
Alfalfa	16.00@20.00
Wheat or Barley straw	8.00@10.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	27.00@28.00
Standard dairy	24.00@26.00
Standard alfalfa	21.00@23.00
Stock alfalfa	17.00@19.00

GRAIN AND FEEDS

Price on local grain exchange August 5:

Milo maize, 3.10@3.13¾.

Barley, 2.87½@2.90.

Corn, 3.60@3.75.

Wheat, 4.90.

Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; canner cows, 4@5; good bulls, 5@6½; calves, 9@10.

Hogs: Today's market on top, packer hogs, hard and well finished, weighed and delivered off cars at our plant, South San Francisco: 175 to 250 lbs., 18½; 150 to 175 lbs., 18; 250 to 300 lbs., 18½. Usual dock and price discounts for other weights and kinds.

Fresh beef: (Carcass beef), per lb.: Fancy steers, 500 to 700 lbs., 16; choice steers, 450 to 650 lbs., 15½; good steers, 450 to 700 lbs., 15; medium steers, 450 to 700 lbs., 14½; fair steers, 14; common steers, 14; fancy heifers, 14; choice cows, 13½; good cows, 13; fair cows, 12½; cutter cows, 12, hind quarters, 3c over carcass quotations; forequarters, 2c under.

POTATOES

Potatoes: Per 100 lbs.: Rivers, choice 2.00@2.25; fancy, 2.25@2.40; sweet, lb., 5@7; garnets, 2.00@2.25.

ONIONS

Onions: Onions, fancy, 2.50; choice, 2.00; Garlic, 21@22½.

VEGETABLES

Wholesale selling price:

Beans: String, 3@5; Wax, 3½@4; Pole, 4@6; Limas, 3½@4; Italian, 5@6.

Cabbage, doz., 40@55.

Celery, cr. of 5 doz., 3.00@3.25.

Cucumbers: Large box, 1.00@1.50.

Corn, doz., 15@30.

Eggplant, southern, fy., 1.00@1.25 bx.

Lettuce, doz., 25@35.

Okra, green, lb., 6@8.

Peppers, Bell lb., 10@20; Chili, 7@11.

Peas, lb., 7@8½.

Radish, 7@9 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.25@1.50.

Spinach, 75@1.25.

Squash: Summer, cr., 50@75; Italian, 50@1.00 bx.

Tomatoes: Sacramento River per 35 lb. bx., 1.50@2.00; Merced, 50@1.00.

CITRUS

Wholesale selling price:

Per bx.: Lemons, fancy 6.50@7.00; choice, 5.50@6.00; standards, 4.00@4.50; lemonettes, 3.50@4.00; grapefruit, fancy, 3.00@5.00; choice, 2.50@3.50; oranges, 4.25@5.50.

FRESH FRUITS

Wholesale selling price:

Apples: California Newtown Pippins, 2.25@3.00; do. choice, 2.50@3.00; Red Astrachans, 2.50@3.00 per box; white, 2.50 per 4½ tier; new crab, 75@1.25 for 20-lb. box; Gravensteins, 2.50@3.00 per box; yellow transparent, 3.00@3.25; Alexanders, 2.25@2.50 per box.

Apricots: 1.25@1.50; loose, lb., 6@8; 120@140 per ton.

6; Royal, 5@7; ton, 120@140.

8; Royal, 5@7; ton, 110@140.

Bananas, 7@7¼.

Blackberries: Ch., 8.00@9.00.

Cantaloupes: Supplies heavy. Demand slow, movement draggy, market dull. Sales direct to retailers: Green Meats, stds., 45's 1.50@1.75, mostly 1.50; ponies best 1.00; flats 50; Honey Dew, practically no demand, movement draggy, market dull, mostly green stock, bulk 1½ per lb.; flats 6's and 9's 1.25@1.50.

Turlock: Haulings liberal Car shortage. Demand slow, market weaker. Few sales, quality fair, condition generally good, quality improving because of continued cool nights. Carloads f. o. b. cash track, Eastern sales—standards 1.25@1.60, mostly 1.35@1.50; ponies 90@1.00; flats 50@75. Wagonloads cash to growers—market weaker, marked drop in prices. Eastern sales—standard 75@1.00; mostly 90@1.00; ponies 50@60; flats 35@50. Mostly shipments consigned.

Figs, 75@1.25 bx.; Brunswick, 75@1.00; whites, 75@1.00, 30 lb bx.

Grapes: Supplies liberal. Demand slow, movement moderate, market steady. Sales direct to retailers—many green,4 basket carriers, Thompson Seedless, 1.00@1.25.

Loganberries, ch., 8.00@11.00.

Huckleberries, 18 lb.

Nectarines, 1.50@2.00 bx.

Peaches: Supplies liberal, demand slow, movement moderate, market dull. Sales to retailers—various varieties, boxes, 60@90. Elbertas, boxes, 85@1.00.

Sacramento: Demand and movement good. Carloads f. o. b. usual terms, Elbertas, boxes, 90.

Pears: Supplies moderate. Demand and movement moderate, market steady. Sales direct to retailers—Bartletts, standard boxes mostly, 2.50; 50 pound lugs, 1.75@2.00.

Sacramento: Demand and movement good, market steady. Carloads f. o. b. usual terms—Bartletts, standard boxes, 2.75.

Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00@1.25.

Pineapples, doz., 2.00@5.00.

Raspberries: Ch., 14.00@15.00.

Strawberries: Ch., 10.00@14.00.

Watermelons, lb., 1¼@1½.

DRIED FRUITS

The California Prune and Apricot Growers, Inc., announce prices:

Peach prices for the 1919 crop were announced at Fresno, July 16, by the California Peach Growers Inc. The price list agreed upon by the directors and announced by General Salesmanager Sturtevant, follows:

Effective this date and until further notice, our prices f. o. b. our California factories, on 1919 crop dried peaches for the domestic and foreign trade: September, October, November shipment, sellers' option; guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾; Muirs, 15.

Choice yellows, 15¼; Muirs, 15½.

Fancy yellows, 16½; Muirs, 17½.

Extra fancy yellows, 17¾; Muirs, 18¾.

Slabs yellows, 14½.

For "practically peeled" add 1½ cents per pound (any grade).

Prices above are all bulk basis.

For packing in: 50-pound or 25 kilos boxes add 1 cent per pound.

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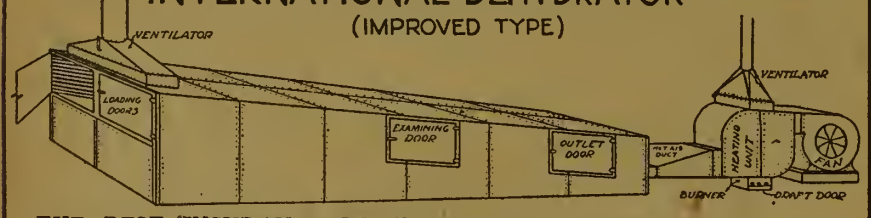

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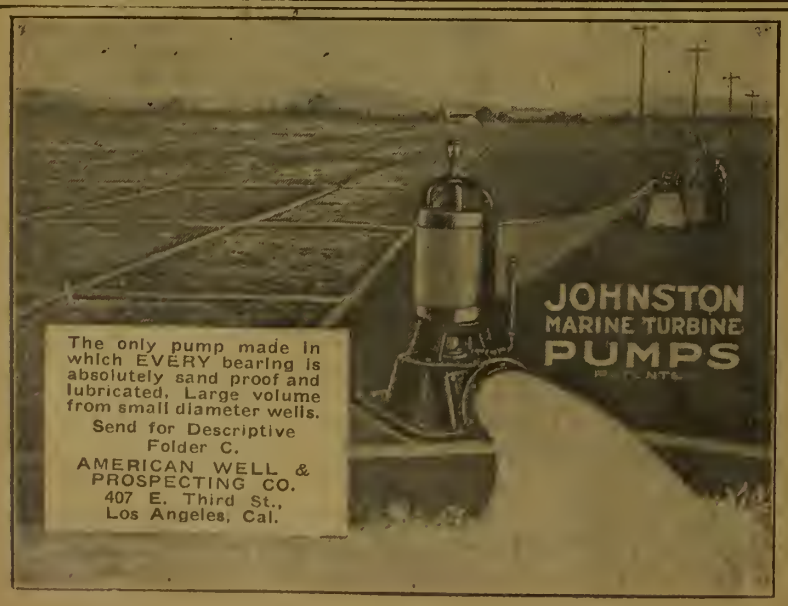
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San Francisco Markets

San Francisco, August 5, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	59½
Prime Firsts	58½
Firsts	55½

CHEESE

Dairy Exchange quotations:

Cal. Flats	34@37½
Cal. Y. A. fy.	37½
Ore. Triplets	37
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	60
Firsts	56½
Extra Pullets	55½

POULTRY

Hens, 28@38; roosters, young, 40; old, 20@21; broilers, 29@31;fryers, 34@35; squabs, 2.50@4.00 doz.; ducks, 25@27; geese, 23@25; broiler turkeys 40@47.

Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.

Calves: Light weight, 12½@13; medium, 11½@12; heavy, 10@11.

Lambs: Yearlings, 10@10½; milk, 13@13½.

Sheep: Wethers, 9¼@9½; ewes, 7@7½.

Hogs: Hard, grain fed, 100 to 150 lbs., 20; do, 150 to 250 lbs., 20½; do, 250 to 300 lbs., 20; do, 300 to 400 lbs., 19½.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

25-pound or 12½ kilos boxes, add 1¼ cents per pound.
10-pound boxes, add 2 cents per pound.
Blue ribbon peaches packed five-pound cartons, 12 per case, 12.00 per case.
Blue ribbon peaches packed two-pound cartons, 24 per case, 10.00 per case.
Bakers' special, "practically peeled," 16¾ per pound, bulk basis.
Figs: Wh. stand., 16; ch., 18½; ex. ch., 20; fy., 22½.
Appies: Ch. (in 50's), 21; ex. ch., (in 50's), 21½; fy., (In 50's), 23.
Pears: 1919 crop, stand., 20; ch., 22½; ex. ch., 23½; fy., 26.

GRAIN AND FEEDS

Oats: Red feed, 2.95@3.05; black, 2.75 @3.00 per centai.
Corn: California yellow, 3.35@3.45 per cental. Egyptian 3.25@3.35; Milo maize, 3.10@3.20.
Rye, 3.30@3.75.
Wheat: Following are net weight prices for bulk grain, based on federai standards and grades at San Francisco Bay and Los Angeles terminais:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat gradlng under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mili Feed (per ton): Bran 43.00@44.00; mili run, 42.00@43.00; Rolled barley, 52.00 @54.00. Linseed oil cake meal, nominal; cocoanut cake or meai, 41.00@42.00 per ton.

HAY

Under date of August 2, Scott, Magner & Miller says:
Receipts past week 2655 tons. Owing to shortage of cars shippers have been compelled to accept gondoias which are both expensive to load and unload. Some stock cars are being furnished at some points. Demand has been good throughout the week and most of the receipts have been moved without difficulty. The majority of receipts by rail have been of alfalfa and wheat hay, most of the red oat hay having arrived by boats from the reclaimed districts. Aifalfa has been in demand and is the leader in the market at present. No demand for straw.
We quote today wholesale prices in carload iots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5-wire bales) per ton	17.50@18.00
No. 1 Wheat or Wheat and Oat hay	15.00@17.00
No. 2 Wheat or Wheat and Oat hay	12.00@14.00
Choice Tame Oat hay	15.00@17.00
Other Tame Oat hay	12.00@14.00
Wild Oat hay	10.00@13.00
Barley hay	12.00@15.00
Alfaifa hay	17.00@21.00
Stock hay	9.00@11.00
No. 1 Barley straw, bale	.50@ .80

Citrus Markets

Los Angeles, August 6, 1919.

A iot of side tracked stuff has been cleaned up and Eastern auctions are showing long prices again. Another factor affecting the market is that the Southern shipments of peaches and meions are declining somewhat.
Lemons fair but nothing spectacuiar.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California; oranges, 29,423 cars, lemons, 8440, total 37,863. To same date iast season; oranges, 12,681, lemons 4672, totai 17,353. Central California this season; oranges, 4427, iemons 354, total 4781. To same date last season; oranges, 2539, lemons 115, totai 2654. Northern California; oranges, 244, lemons 2, total 246. Last year same date; oranges, 203.

AT THE AUCTIONS

July 30

New York: 16 or., Val. 4.65-7.85.
Cleveland: 6 or., 3 iem. Vai. 2.50-6.05, lem. 3.30-4.85.
Boston: 5 or., 4 lem. Val. 1.95-6.75, iem. 1.95-4.80.
St. Louis: 4 or., 5 lem. Vai. 2.30-4.25, lem. 2.40-5.25.

July 31

New York: 15 or., Vai. 4.25-7.40, Mikes. 4.55-5.05, grapefruit 4.60.
Pittsburg: 5 or., 2 lem. Vai. 3.35-5.25, iem. 1.45-3.90.
Boston: 4 or., 3 lem. Val. 2.90-6.35, lem. 1.50-4.00.

Aug. 1

New York: 10 or., 1 iem. Val. 4.25-7.60, lem. 5.45-5.60.
St. Louis: 4 or., 4 lem. Val. 1.75-5.30, lem. 2.55-5.00.
Cleveland: 4 or., 2 iem. Val. 3.75-5.90, lem. 3.00-4.85.
Cincinnati: 2 or., 4 lem. Val. 4.20-5.30, lem. 2.00-5.45.

Aug. 4

New York: 22 or., 1 grapefruit, Vai. 4.00-7.95, Mikes. 5.00-6.25, grapefruit 2.65-5.35.
Pittsburg: 5 or., 2 iem. Val. 3.65-5.85, lem. 2.00-5.35.
St. Louis: 5 or., 3 lem. Val. 2.30-5.00, lem. 3.10-5.40.
Cleveland: 3 or., 2 iem. Val. 4.60-5.90, lem. 2.70-4.70.
Boston: 9 or., 4 lem. Val. 3.25-7.20, lcm. 2.30-5.70.
Philadelphia: 8 or., 2 lem. Vai. 4.10-6.20, lem. 2.15-4.35.
Cincinnati: 2 or., 2 lcm. Val. 3.30-5.30, iem. 2.30-4.45.

Aug. 5

New York: 19 or. and grapefruit. Val. 3.55-7.55, grapefruit 4.80-5.60.
Boston: 5 or., 1 lem. Val. 3.40-6.40, lem. 1.85-2.40, grapefruit 5.75-9.05, Mikes. 4.65-6.10.

MARKET NOTES

The acreage of tomatoes for canning is estimated at 2500 in Sacramento and Yolo Counties, with prospects for a much larger tonnage than last year.
Indications are that there will be an increased acreage of fall lettuce for shipment in the Sacramento district this year.
Onion seed crops were injured again this year in the districts trlbutary to Sacramento and Stockton by hot winds. The damage is spotted, varying from 2 to 50 per cent. Preliminary estimates of loss from all fields indicate about 25 per cent injury. The acreage will probably be much reduced next season as prices to growers will be cut.
Last year California and Arizona together produced about one-half the cantaloupe crop of the country.
Up to July 1 California had shipped 8640 cars of cantaloupes; 7390 cars were from the Imperial Valley. The heavy shipments from the central district are of course later.
The late crop of Australian Brown onions is now ready for shipment.
Contracts for future delivery in Wenatchee Valley, Washington, range for orchard run summer varieties, $2.00@$2.50 per box; Winesaps, $2.00@$2.25.

NOTES ON BUTTE CITY SALE

Continued from Page 155

and the price paid ruled strong. A number of small farm flocks were started. Ranchers are beginning to learn the value of a few sheep about their places. They keep the corners and ditch banks clean.

CALIFORNIA CATTLEMEN

The California Cattlemen's Association is the latest organization out with a house organ. It is now publishing the California Cattleman, Vol. I, No. 1 just being received. "It is the sincere hope of the directors and the editor that this journal will promate an interchange of ideas and that the cattlemen will look upon it as their very own."

DAIRYMEN'S DAY

The Los Angeles County farm bureau is moving to secure observation of Dairymen's Day, to be held under the auspices of the bureau some time during the live stock show in Los Angeles, October 18-26. While the plans are being worked out by the Los Angeles County people it is hoped that it will be observed by dairymen over all portions of the Southern part of the state.

SAN FRANCISCO SHOW UNDER WAY

At a meeting of the board of directors of the California International Live Stock Show Corporation, San Francisco, August 4, vacancies in the board of directors were filled by the election to membership of J. H. Rossiter, T. W. Dibblee and F. J. Koster. Rossiter succeeds Edgar J. De Pue, deceased; Dibblee succeeds Vanderlyne Stowe, deceased, and Koster succeeds Gordon H. True who resigned from the directorate upon his election as secretary of the corporation and manager of the show. The board declined to accept the resignation of Fred W. Kiesel which had been presented.
Preliminary work for the show is well under way. There will be a liberal increase in premiums over last year and the amount of special prize money offered by the national breed associations has been very materially increased. Work on the premium list is being rushed and it will be ready for distribution in a few days.

MAN'S SPHERE

"Where," asked the female-suffrage orator, "would man be today were it not for woman?"
She paused a moment and looked round the hall.
"I repeat," she said, "where would man be today if not for woman?"
"He'd be in the Garden of Eden eating strawberries," answered a voice from the gallery.—Tit-Bits.

AN ACUTE ATTACK

"Weren't you shy when the judge asked you your age in court?"
"Yes, I was about ten years shy, my dear."—Life.

NOT BY THE HOUR

"Do you understand the new telephone rates?"
"No. Can you explain them?"
"I think so. Of course you know we are to have metered service."
"Yes, I saw that in the paper."
"That means we will be charged for every call."
"Each call will be a distinct charge, then?"
"Yes."
"I'm glad of that. I had an idea when they put a meter on the line they were going to charge us by the hour, and judging from the time it takes me to get a number now that would bankrupt me."—Detroit Free Press.

If you would convince others that you are a fool, boast of your wisdom.

A pessimist thinks it's an ill wind that blows anybody good but himself.

Some men claim to practice what they preach merely as an excuse for preaching.

WEATHER REPORT

San Francisco, California, August 2, 1919.

Stations	Rainfall Wk.	Rainfall Season.	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.01	.01	.11	60	50
Red Bluff	.00	.00	.00	94	58
Sacramento	.00	.00	.00	88	52
San Francisco	.00	.01	.01	62	50
San Jose	.00	.00	.00	76	46
Fresno	.00	.00	.00	98	58
San Luis Obispo	.00	.00	.01	74	48
Los Angeles	.00	.00	.00	78	58
San Diego	.00	.00	.00	72	62

Wade Improved Pea and Bean Thresher

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TANK-TYPE TRACTOR

(Formerly known as the "Cleveland" Tractor)

ROLLIN H. WHITE, the well-known automotive engineer, designed the Cletrac Tank-Type Tractor to do most of the work formerly done by horses and mules—to do it *better, quicker, cheaper*—and to do it *twelve months in the year.*

A million American farmers can profitably use such a tractor.

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The Cletrac is only 96 inches long, 52 inches high and 50 inches wide—enabling it to work up close to trees and fences and making it ideal for orchard use.

But in spite of its small size and compact construction the Cletrac is extremely powerful and will do the work of six horses or mules—and has a speed of from forty to fifty per cent *greater* than the average tractor. And it will work on side hills and grades where most tractors fail.

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In spite of steadily increasing production facilities we are having difficulty in keeping pace with orders. Early ordering is therefore important. Such tremendous possibilities are open to Cletrac owners for making greater profits because of *larger* and *better* crops—because of the ability to *work the soil at any time desired,* in spite of horse-killing heat—because of the *year round utility* of the Cletrac, that you are losing money every day you are without a Cletrac.

We have an interesting and instructive thirty-two page book entitled "Selecting Your Tractor" that will be sent free upon request. It goes into *your* problems *—and solves them.* Send for it today.

The Cleveland Tractor Co.

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The largest producers of Tank-Type Tractors in the world

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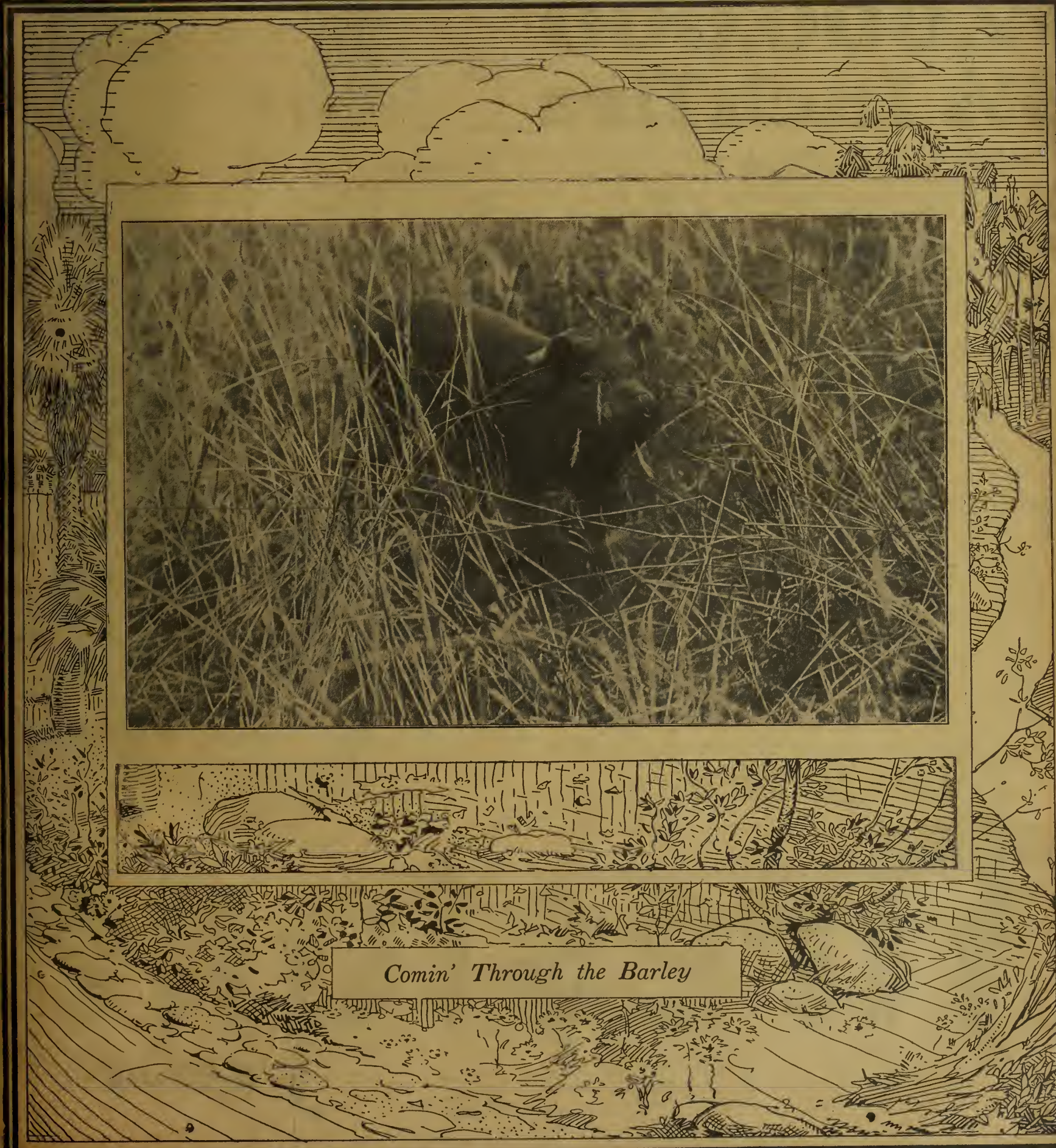
AUG 24 1919

CALIFORNIA CULTIVATOR

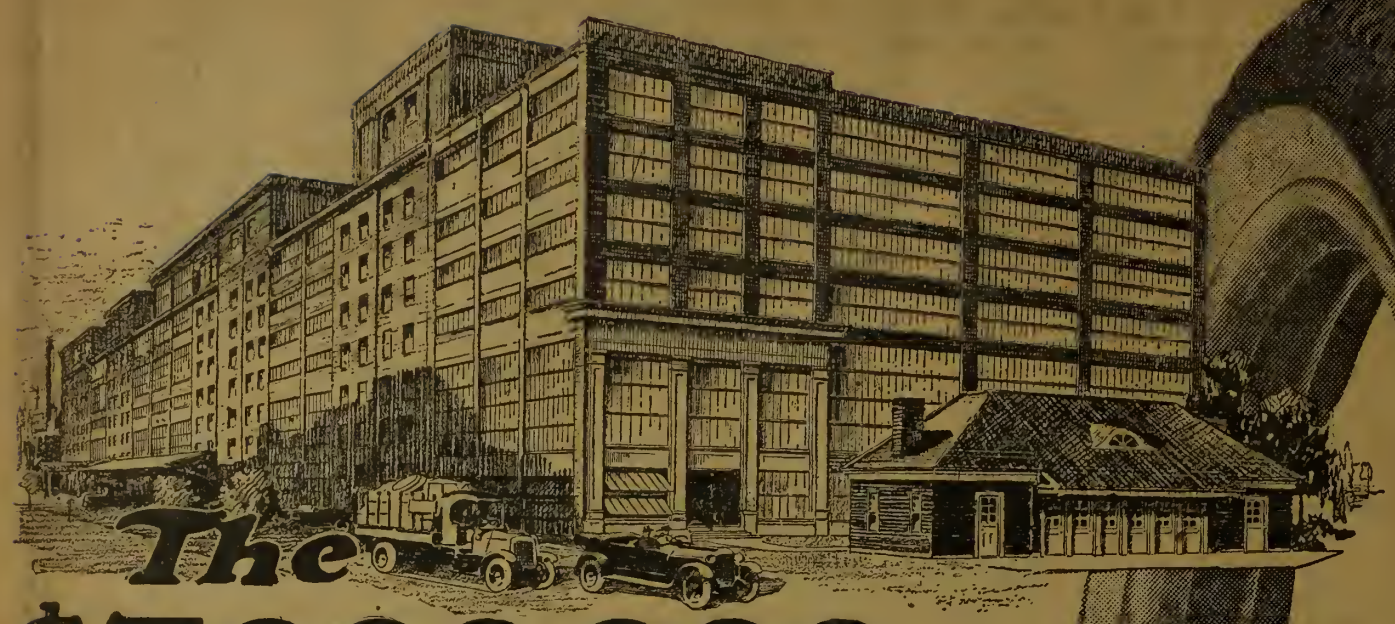
and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — August 16, 1919 — No. 7



Comin' Through the Barley



The $7,000,000 3½ Inch Tire

—or it might be called the $73,000,000 tire, for it is possible only because of the entire resources of the Firestone Company.

BUT $7,000,000 is what has gone directly into this new, vast Firestone factory that is devoted exclusively to the making of this tire and the tubes to match. The main plant is now concentrating on Cords and big sizes.

16,000 3½-INCH TIRES 20,000 3½-inch tubes is the daily capacity of this new factory. This plant is years in advance in its mechanical efficiency. Into it has gone the thinking, planning, the spirit of service that distinguishes the entire Firestone organization. Its methods and machinery were developed by Firestone men.

FIRESTONE HAS STEPPED FAR AHEAD in engineering practice and you get the benefit. The labor saving equipment of this factory cuts costs on every operation from 10% to 30%.

FROM THE TIME special shipments of rubber and of fabric arrive at this plant, until the finished tire is loaded on the freight car, there is not a backward move.

AND THE MAN POWER of this plant is as far in advance of the ordinary as is the mechanical efficiency. Firestone organization is the talk of men in big industry everywhere.

THE FACT THAT 90% of Firestone workers own stock in the Company is an index to their interest in their work. Their superior skill, their spirit of service, is stimulated by their financial interest in winning you as a customer.

AT EVERY TURN Firestone thinks and plans to give you the most for your money, knowing that this is the surest method of obtaining the greatest demand. Every move Firestone makes is toward this end—mileage at lowest cost.

NEVER HAS FIRESTONE, NOR ANY TIRE MAKER, offered car owners so much as they are offered now. It is the year of big value. Ask your dealer.

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30x3½

Non-Skid	Gray Tube
$18.00	$3.25

32x3½

Non-Skid	Gray Tube
$21.00	$3.70

6,000 Miles

This is the **Firestone** *Year*

California Cultivator

Vol. LIII, No. 7 Los Angeles, August 16, 1919 One Dollar Yearly

The Orange Supply

By F. O. Wallschlaeger, at Citrus Institute, San Bernardino, February 21

The facts given in Mr. Walischlaeger's address which was made at the San Bernardino Citrus Institute are only up to the end of the year 1918. Any new facts that might be secured for the first six months of 1919 will probably make little difference in comparisons one country with another.

THE three largest citrus fruit producing countries are the United States, Spain and Italy. In 1916-17 the United States produced in the neighborhood of 75,000 to 80.000 carloads. On account of war conditions the Spanish and Italian industries have been in an unsettled condition and the data from those countries are not in very satisfactory shape. Under normal conditions Spain produced about 68,000 carloads and Italy about 58,000 carloads.

The data on production in Louisiana, Mississippi and Texas is not available. Considering California, Florida and Porto Rico, a four year average shows that California shipped about 80 per cent of the total United States supply of oranges and grapefruit, Florida 36 per cent, and Porto Rico 3.6 per cent. I include the grapefruit with the oranges, as to a certain extent oranges and grapefruit are interchangeable as a breakfast fruit. If we consider oranges only, we find that in 1916-17 California shipped 72.4 per cent, Florida 24.8 per cent, Porto Rico two per cent and the imports only amounted to 8/10 of one per cent in that year.

In the past the imports of oranges have been greater than at present. The largest imports of which we have any record were in 1884 and were valued at $2,901,000. When we consider that California oranges alone now have a total annual value of between $35,000,000 and $40,000,000, it will be apparent that the imports even at their largest represented but a small fraction of the total value of oranges used in the United States at the present time.

UNITED STATES ORANGE AND GRAPEFRUIT SUPPLY
1914-15 to 1917-18

Year ending October 31:	1914-15 Cars	1915-16 Cars	1916-17 Cars	1917-18 Cars
California—Southern	33,317	31,871	40,702	14,346
California—Northern and Central	6,421	6,026	5,889	2,773
California—Total	39,738	37,897	46,591	17,119
Florida—Oranges	.....	18,073	15,989	8,880
Florida—Grapefruit	.....	5,994	4,824	5,434
Florida—Total	24,997	24,067	20,813	14,314
Porto Rico—Oranges	619	1,167	1,262	1.391
Porto Rico—Grapefruit	714	886	1,113	1,339
Porto Rico—Total	1,333	2,053	2,375	2,730
Grand Total	66,068	64,017	69,779	34,163
Imports—Year ending September 30	143	191	497	.....

Imports

The table giving the supply of oranges and grapefruit in the United States during the last four seasons shows that so far as competition from foreign countries is concerned, there is very little. Our largest imports were in 1917 and amounted to the equivalent of about 500 cars. The largest imports of oranges came from Spain, due to the shutting off of her normal markets and her endeavor to secure compensating markets. During the year ending June 30, 1917 there were imported $102,000 worth of oranges from Spain. Japan was the next largest source of our imports with $33,000. The British West Indies, principally Jamaica, exported about $9000 worth to this country, and Costa Rica and Cuba each between $5000 and $6000; the total imports in that year being valued at $160,110.

Of the oranges that are shipped into the United States, Porto Rico ships the largest quantity. The amount of oranges shipped from Porto Rico to the United States in the year ending October 31, 1915, was 619 cars; the year ending October 31, 1918, shows 1391 cars or 108½ per cent increase. This fruit enters the United States duty free. Three-fourths of the oranges from Porto Rico are classed as "wild" fruit. It is probable that the shipments of citrus fruit to this country from Porto Rico will continue to increase.

Spanish oranges in 1916-17 were brought to this country in larger quantities due to war conditions. The American consul at Valencia, Spain, under date of August 16, 1917, writes regarding the exports of oranges to the United States as follows: "Exports to the United States fell from 64,720 cases in 1916-17 to practically none this season. The results of shipments made to that country last year in an effort to find compensation for the impairment of the British market were altogether unsatisfactory to shippers, who were forced to conclude that the Valencia orange can not compete in American markets with the California and Florida oranges. So long as European markets were available it was neither necessary, nor profitable for Valencia oranges to seek an American outlet."

It is apparent also that even in Canada, where only a small ad valorem duty of seven and one-half per cent is collected as war revenue, the Spanish orange has been losing grounds, its place being taken by California and Florida oranges.

The Japanese oranges brought into this country are practically all of the Mandarin variety, although Japan produces some Navel oranges. The principal countries to which Japanese Mandarin oranges were shipped in 1916 are: Kwantug $216,921, Canada $113,274, Asiatic Russia $108,831, China $88,921, and the United States $50,875. Japan is actively going ahead with citrus culture, the government having at one time subsidized plantings and later turned to the distribution of trees, in order to assist the development of this industry.

The British West Indies, principally Jamaica, come next to Japan in the value of oranges imported into this country. With favorable conditions, it is to be expected that Jamaica could largely increase her exports to the United States. Canada has been receiving a very much larger amount than the United States, and even the United Kingdom has received a larger quantity. In the first six months of 1917 the destinations of Jamaica oranges were: United Kingdom, 71,100 of fruits; United States, 6750; Canada, 829,500; other countries, 439,000; total, 1,346,350.

After the Messina earthquake Jamaica turned to the production of orange oil, and the exports to the United States increased in value from $1759 in 1911 to $119,636 in 1916. It is estimated that the quantity of oranges required to produce the 2424 packages of oil exported in 1916, would equal 1000 carloads of California size.

The Cuban orange exports have been rather at a standstill, grapefruit being of more importance.

Mexico formerly exported oranges to the United States, but, on account of the prevalence of a fruit fly there, the federal horticultural board prohibited the importation of oranges into this country. They are permitted to export this fruit to Canada, it being shipped through this country in bond.

There are two countries that are establishing a citrus industry and have looked longingly for exterior markets. They are New South Wales and South Africa. Prior to the war these countries felt that having an opposite climate, there would be an opening in other countries during their season of scant supply. It was estimated in 1915, by the British government trades commissioner, that there would be 400,000 boxes of citrus fruits available for shipment from South Africa to England during the coming season, and that in ten years there would be 4,000,000 boxes annually available. He also stated that within the next few years California would be outrivaled, and that great fortunes would be made in orange growing. Later information indicates that probably due to war conditions, the citrus fruit producers were contemplating the establishment of a citric acid factory and also a jam factory.

In 1913-1914, the Australian commonwealth produced 1,341,878 bushels of oranges and 297,083 bushels of lemons. A trial shipment of oranges and lemons was made by the New South Wales Department of Agriculture to Canada. The price realized was satisfactory, but no further material shipments have appeared. In 1913, the principal source of Australia's imports of citrus fruit was Italy, with Egypt, Asia Minor and the United States following in the order named. The total imports of that year were valued at $214,305, as compared with the production of $2,892,000. It would seem as though Australia is able to take care of her home demand for citrus fruits, except during her season of scant production.

In the case of New Zealand, the production of oranges and lemons has not been as successful as Australia. New Zealand obtained her oranges in the year 1917 from Australia, the United States and the Society Islands in the order named.

Exports

The exports of oranges from the United States have been increasing from year to year. However, Canada, the principal country to which we export took 93 per cent of the total exports in 1917, 96 per cent in 1918, and the four previous years took approximately 95 per cent. Other countries to which we export are New Zealand, Mexico, Australia and the United Kingdom. The United Kingdom formerly was our next largest customer. In 1915, we exported 35,748 boxes to the United Kingdom, but this decreased to 3181 boxes in 1918, on account of shipping conditions. There is now being shipped some fruit to England, and the shipping board has recently announced a freight rate of $1.00 per box. Though we shipped some oranges as far as China the geographically nearer markets in South America do not take any considerable amount of fruit, Chile taking the largest quantity in 1917, only amounting to 338 boxes. We do export some oranges to Panama, Cuba, Japan, Philippine Islands, Alaska and Hawaii. The best opportunities for increasing our sales of oranges abroad seem to have been in Australia and New Zealand.

THREE TIMES AS MUCH WHEAT AS LAST YEAR

Commercial stocks of wheat reported in a survey made by the department of agriculture for June 1, 1919, amounted to 51,392,898 bushels. This represents nearly three times the stocks held by the same firms on June 1, 1918, the actual percentage being 274.5 per cent of the 1918 stocks. The figures refer to stocks actually reported by 8684 firms and do not represent the total commercial stocks of the country nor do they include stocks on farms.

Other Cereals, Flour and Corn Meal

The commercial stocks of other cereals reported for June 1, 1919, according to the department's statement, were as follows: Corn, 17,254,576 bushels; oats, 45,770,543 bushels; barley, 20,043,375 bushels; rye, 14,624.331 bushels. These stocks represent the following percentages of the corresponding stocks on June 1, 1918: Corn, 47.6 per cent; oats, 90.6 per cent; barley, 207.2 per cent; rye, 346.1 per cent.

VALUABLE SMALL POWER

Potato diggers of the elevating type are now equipped with light weight engines of sufficient power to operate the elevator in the heaviest soils. While increasing the working capacity of the digger it also adds life to it by reducing the number of horses required and taking the greater strain. The engine is used similiarly on grain, rice, and corn binders, headers, manure-spreaders, mowers and reapers. In fact, as its adaptability becomes better known and appreciated it may be used on much of the farm machinery that is now operated solely by the tractive power when the implement is drawn by horses or tractor.

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, August 16, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

In view of the present high cost of labor the department of agriculture is urging more attention to hogging off, in fact, general "livestocking" off and saving harvesting expense. With California irrigation methods corn is a much too high priced product to harvest in a way which does not conserve every kernel, but hogging off of barley has been practiced in this state to a limited extent, and it is probably worthy of more attention than it has ever had. There is also at this time a general seeking for sorghums and millets or other grains which can be satisfactorily pastured off, both as to grain and as to roughage. "The richest country is the grass country," and while California has little of established pasture lands with heavy sward, yet pasturage does afford great increase in California's wealth, and a better understanding of our annuals and perennials which are adapted to California conditions will increase our wealth.

HONORING ROOSEVELT

The Roosevelt Memorial Association recently organized is sending out its first information as to two memorials to Roosevelt. One of these is to be a great shaft or dome or other structure in the city of Washington; the other, a memorial park on Sagamore Hill. The association plans for the raising of a $10,000,000 fund to give proper expression to the admiration of the American people for the Great American.

ALMONDS

From the Antelope Valley in Los Angeles County to the northernmost almond producing section of California the trees are loaded, possibly not in every orchard, but as a rule. Some orchards are bristling with props, and still the trees are breaking. Even in the Antelope Valley neglected trees which have not yet died from drouth or other things are loaded, and if there is sufficient moisture in the ground to fill the nuts there is no reason why that section will not produce an immense crop. The United States is still importing vast quantities of almonds. California has an acreage of some 50,000, with only some 5000 to 6000 tons for normal production, but California growers are rising to the opportunity and growing more almonds.

THOUGHT FOOD

The packers are somewhat disturbed for fear the Kenyon bill now before congress will become a law and are using a lot of energy to convince the public that they, the packers, are selling meat at very small turnover on a dollar. In a Los Angeles paper, Sunday, August 3, there appeared a list giving the price of imported food on July 15 in Germany and the price in Los Angeles as follows:

	Germany	Los Angeles
Flour	.06c	.09c
Rice	.21c	.15c
Beans, peas	.12c	.10c
Bacon	.40c	.60c
Lard	.54c	.35c
Potatoes, new	.02c	.04c

The staple articles of flour and bacon are shipped to Germany and sold a great deal cheaper than in this country. Perhaps the packer is right in his contention, but it will take a lot of propaganda to convince the returned soldier and his family that sacrificed so much that he should pay 50 per cent more for food than Germany is paying.

MORE GOATS

The goat seems to be taking possession of the small farm in California. The southern end of the state especially claims to be the "goat center" of the world, this not excepting the mountain sides of Switzerland or the Island of Malta, and there are being developed some exceptionally fine animals. Two associations have been formed in the southern end of the state; now comes another in the central or northern part which was organized at Berkeley last week. The goat will never replace "Old Bossy," but it has a secure place all its own.

NOT GUILTY

Some time ago we referred to the fact that a number of members of the Associated Milk Producers operating in and around San Francisco had been indicted on a charge of violating the Cartwright law by a conspiracy against trade. The indictment followed the alleged expose of the methods of the association staged by a San Francisco daily paper that sought to ingratiate itself with the public by appearing as the champion of the babies. Those who followed the San Francisco "fight" thought they detected here and there signs that seemed to indicate that the line of attack was the same as had been often employed in similar fights in other cities. The trial came to a close last Thursday when the jury brought in a verdict of "not guilty."

Another victory has been won by the milk producers, but they should not imagine that the battle is over. Unless we miss our guess there will be other skirmishes from time to time. The same tactics will be used, the same ammunition fired—but the result will never be in doubt. The wonder of it all is that editors and prosecutors continue to "fall for such old stuff."

DAYLIGHT SAVING

The Eastern farmers are continuing their effort to have the "daylight wasting" law repealed and have secured the passage of a bill which is now before the president. The president's veto of the former bill in which expressions were used indicating that the opposition to the original daylight saving bill had been of little force, was sufficient to stir up several hornets nests, and those who disapprove of the daylight saving scheme got busy as they never had before. Those who are opposing this summer change of time assert they will never let up until this law is repealed.

POTASH

A great number of farmers east of the Rockies are insisting upon the admission of German potash. The West as a rule is opposing it. Unfortunately soil conditions in much of the East require potash to produce profitable crops. On the Pacific Coast the demand is less and the supply is nearer at hand. This supply was greatly increased during the war by the development of natural potash beds in California, Nebraska and other sections; also by large production of potash from kelps. This was made necessary because of the embargo and the demands of war. Notwithstanding this the industry was not put upon its feet so as to compete with German produced salts which can be brought from Germany at much below American prices of manufacture.

It's the old question of tariff or free trade. The Eastern believer in protection for the great steel industry transforms into the free trader when it comes to protection of potash he may wish to purchase for Eastern farming operations.

SHADE IN SCHOOL YARDS

The Easterner automobiling in California usually remarks on the architectural beauty of California school houses, and when we remember the little old red school house on the bleak wind-swept knoll back in the states, without a tree or other green growth, that is, not counting the spare acre of mayweeds, the beauty of the usual California school building and grounds appears. But there are cases which are different.

A drive through the valley brings to view some of these old time school house types—hardly shade enough for a horned toad, yet the Australian eucalyptus in five years makes a wonderful shade. Why does not the board of trustees of the old country school "deestrict" observe Arbor Day, plant a tree and plant some posts by it to give it protection for a few years and secure for the youngsters of the future as much happiness as we youngsters had in the old Buckeye State when we took our little tin buckets a quarter of a mile to the old chestnut tree to eat in its grateful shade?

Speaking on this subject some time ago John Vallance said:

"Picture in your mind one of those unsightly buidings standing in a hot valley, the sun pouring into the windows at all times of the day, with not a particle of shade! Do you think those children can concentrate their thoughts upon their studies under such conditions? Do you think we are going to get the best out of them? Do you think it is right to subject them to such a condition of affairs through our neglect? Do you think the children will have happy recollections of their school days under such conditions?"

H. C. OF L.

We recently saw an illustration of '49er days in California, a street in Hangtown or some other mining camp, with restaurant in the foreground announcing "Ham and Eggs, $5.00," "Bread and Tea, $2.00," while across the street overalls were listed at $52. We seem to be approaching the old days with modern day prices. As one writer has expressed it, it is a case of the dog chasing its own tail, for it's only a few months since the railway people demanded a raise in wages, and because of this increase in transportation costs, all products going to market had to raise to meet the increase in the other costs. Now to meet that increase the railway people are demanding another raise in wages, and the everlasting chase about the circle is keeping up.

Congress is making a bluff at reduction, in fact, it seems to be quite in earnest, but with the desire to down Bolshevism by keeping the laboring people in the best of humor, it is presumed that wages will continue upward. There is only one possible result, that is, that other commodities continue in the same direction. Fortunately the effort to lay the entire blame at the door of the farmer is not always succeeding, for labor is now taking its portion of the blame.

Volney Craig, president of the Los Angeles County farm bureau, calls attention to some of the pertinent facts in this discussion. He makes reference to the fact that one of the war measures, that encouraging manufacturing, especially ship building, guaranteed all costs and a profit of ten per cent, and that such guarantee was never given to the farmer. The wheat growers' experience was cited by Mr. Craig. But there was one point he did not make, and that is that when the arbitrary price on wheat was first made it was then commanding on the market $3.50 per bushel and effort was made by the food administration to cut this to $1.50. It was realized that this would cause rebellion, and the $2.20 price was finally fixed. This took millions of dollars from the wheat growers; it gave cheaper bread and the farmers paid for it, but such proof of patriotism was never required of the manufacturing or other interests.

Let us have greater purchasing power given to our dollar; at the same time it is not fair nor just to charge its depreciation to farming interests

A firm of wool growers of Yakima, Washington, expresses satisfaction with the plan tried out of shipping wool to market on the sheep's back. Wool and mutton both were marketed in Chicago. The animals were held two months at Trevor, Wisconsin, for shearing and fattening. They beat the home price a little on both wool and mutton.

Oranges or Walnuts

By H. H. Warner

THE successful fruit grower is a prophet. When he sets out his orchard he needs to know where the outlet will be for his fruit when his trees come into bearing six, eight or ten years hence. He needs to look a long way ahead as his is not a crop which can be changed from year to year to suit the varying market conditions.

Great stretches of land in Southern California, thousands of acres of fertile soil, are equally well adapted for the production of either citrus or deciduous fruits, and the rancher in deciding to set out an orchard is confronted with a bewildering array of possibilities from which to choose. His land may very likely be able to produce apples, apricots, peaches, pears, prunes or walnuts, not to mention a large variety of vegetables which he may elect to grow between his young trees. He needs to choose very wisely and he should have some definite knowledge of the possible future returns before settling down to the long nothing-coming-in-and-everything-going-out period until his trees begin to bear.

Naturally under conditions of this kind many mistakes of judgment have been made. In a large number of cases too much emphasis has been laid on the productivity of the soil without due regard to the possible marketing outlet.

In Southern California the two fruit crops which have stood the test of both production and marketing experiences are oranges and walnuts. This does not indicate that other fruits could not be successfully grown on much of this same land, but there are not yet available to the producers of these other lines the great cooperative marketing organizations which have made the growing of oranges and walnuts so profitable.

So in the end the marketing possibility, not the producing capacity of the land, has been the determining factor. The grower may personally feel that there will be a strong demand for avocados, or the so-called "alligator pears," when his trees will come into bearing, but he hesitates to plant avocados because there is no growers enterprise which can assure him that his production will be handled with a profit to him. A single rancher attempting to market his own output in a fresh condition 3000 miles away has quite a job on his hands. And right here it should be noted that the production of fresh fruits and vegetables for the local coast markets is already being overdone.

During the last 15 years the increase in the area of citrus fruit plantings in the coastal and interior valleys of Southern California has been in two opposite directions, higher up on the slopes of the foothills and lower down on the floor of the valleys. A better understanding of methods of hillside cultivation and irrigation, coupled with the constant effort to eliminate the danger from frost, has given a distinct impetus to the expansion of orange and lemon orchards toward higher elevations.

In the direction of the lower lying lands the expansion has progressed more slowly owing to the increasing danger from frost. Nevertheless a great movement has taken place in this direction as the soil of these valley floors has been found to produce large crops of superior quality.

In Los Angeles and Orange Counties particularly these lower lands were originally pretty generally set out to walnut trees. One of the most interesting transformations in the history of the fruit business has been the graduai changing over of these walnut orchards to orange groves. As it became increasingly evident that the fear of frost in these lower lands was unfounded, the value of the lands suitable for citrus fruit planting naturally increased. With the price of walnuts five or six years ago netting the grower only 10 or 12 cents a pound he was unable in many instances to pay interest on the increased valuation of his land from the proceeds of his walnuts.

Consequently many growers began to do what George Washington did to the cherry tree, and hundreds of acres were grubbed out and reset to orange trees. In many cases if the walnut trees were not too large the oranges were interset and the walnut trees cut out after a couple of years as the orange trees began to grow.

This practice continued to be quite general until about three years ago when the war prevented the importation of walnuts from Southern France and Italy and caused a correspondingly higher price to be paid for domestic walnuts. Each year since then has witnessed fewer walnut trees being cut out. True, the price of oranges has increased somewhat during this same period in line with other food commodities, but since the war had no effect on the already negligible imports of citrus fruits, the price of walnuts was corresopndingly higher in proportion to pre-war figures.

Today the forces of the walnuts and oranges have signed an armistice. So far as the growers are now concerned it is about an even bet between oranges and walnuts on the lower lying lands of the great valleys in Southern California.

In the days when it was considered fashionable to remove old walnut trees and repiant with oranges, most of the ranchers pianned to take out only a few acres every year. A careful survey of the orchards in these districts today reveals small blocks of oranges and walnuts on almost every ranch, showing the progress of the work at about the time when walnuts began to compare favorably with oranges in returns.

The future of these two industries involves a number of factors which are weil known to the able managements of the two great growers organizations. From the marketing standpoint the great obstacle confronting the citrus fruit growers is the old one of overproductien. Just now this is being well taken care of through well directed national advertising primarily designed to teach the consumers how and why to eat more oranges. It appears now that with the aid of national prohibition that the consumption can be kept sufficiently ahead of the increasing production to warrant satisfactory returns to the growers for a number of years at least.

The production of walnuts has been greatly stimulated during the past three years by the higher returns which war conditions made possible. Thousands of acres of bare land have been set out to walnuts and the production of this crop will increase during the next few years as rapidiy as that of citrus fruits. The California Walnut Growers' Association conservatively estimates that the production will double about every six years and that the shipments in 1925 will approximate 50,000 tons or just double the probable production this fall.

Notwithstanding this fact the walnut grower is not worried about overproduction as only about half of the walnuts consumed in this country today under normal conditions are produced here. The chief concern of the walnut grower in trying to forecast marketing conditions is the probable extent of this importation from foreign countries. The tariff at present is two cents a pound on nuts in the shell but the grower does not feel that this affords the same amount of protection which a two cent tariff did before the war.

From the point of view of the production of the two crops there are admittedly fewer problems confronting the grower of walnuts than the grower of oranges. A walnut orchard is easier to care for and is subject to fewer diseases and losses from pests than is an orange orchard. In caring for a walnut orchard practically no money need be spent for fertilization, pruning, fumigating or frost fighting. It has now been demonstrated that the disease of die-back can be prevented through proper control of soil moisture; the damage done by aphis and the codlin worm can be held in check by dusting; and the propagation of new varieties which are practically blight resistant indicates that the most serious disease known as walnut blight may be overcome.

These are some of the considerations receiving the attention of forward looking growers today. The owner of one of the well known citrus fruit ranches, whose name has for years been prominently identified with the progressive development of the industry, is now searching for a large acreage suitable for the production of walnuts. Other growers, uncertain as to the future, are setting out both oranges and wainuts on the same land, pianning to remove whichever proves to be the least profitable when the trees come into bearing. We may safely conclude that in the future the returns to be made from either walnuts or oranges will be satisfactory and that the money to be made from a weil cared for walnut orchard has recently become and probably will continue to be comparable to the returns from a good orange grove.

The Maslin Seedling Fig Orchard

By G. P. Rixford

Owing to death of Mr. Maslin referred to on editorial page in recent issue of the Cultivator, the following article written by G. P. Rixford has particular interest. The Maslin orchard is a striking example of the persistence of some of our pioneer fruit growers. Mr. Rixford is connected with the bureau of plant industry of the department of agriculture and at the time of the planting of this orchard was with the San Francisco Bulletin which introduced some of the cuttings planted by Mr. Maslin.

THE Maslin seedling fig orchard planted by E. W. Maslin at Loomis, Placer County, in 1886 has played an important part in the development of the fig industry in California.

At the Fruit Growers' convention at Stockton in December 1910 reports were current that a number of fig growers in the San Joaquin Valley were digging up their bearing Smyrna trees in consequence of the difficulty of obtaining caprifigs containing blastophaga to pollinate their trees. The writer proceeded to Ceres, where most of the destruction of trees had occurred, and called a meeting of growers who could be quickly reached by telephone. There were present 12 or 13 growers who were admonished not to destroy any more trees as the United States department of agriculture had taken a lease on the Maslin orchard containing 72 capri trees and would furnish the entire crop to the growers at the bare cost of gathering and shipping the fruit, namely, 50 cents for boxes containing 160 to 175 figs. The growers next season availed themselves of the opportunity to the extent of over 600 boxes, 96,000 figs, with the result that no more fig trees were destroyed. In addition to devoting the entire resource of the Maslin orchard to the growers cuttings from the best trees were offered gratis to any one desiring to avail himself of the privilege. Besides several fine Smyrna varieties the orchard contained several of the finest caprifig trees in cultivation in the state.

Of the capri varieties several bear the largest figs ever seen in this country, with correspondingly large supplies of biastophaga from the ample gall zones and provided with large staminate clusters with abundance of pollen, besides vigor and hardiness that has never failed to carry the mamme crop safely through the hardest frost of California winters.

Many thousands of cuttings from these trees have been distributed throughout the fig regions of this and other states.

The significance of the Maslin orchard in the upbuilding of the Smyrna fig industry to its present healthy condition is also emphasized by the production of new varieties through breeding operations.

Some of the largest, handsomest and most lusciously flavored new varieties have been introduced into cultivation and will soon attract the attention of the lovers of the best fresh figs.

A fine black, or purple variety was produced by crossing the French variety called Agen with the Meyer Capri No. 2, by Prof. T. C. Mason, of the United States department of agriculture. It is round, or slightly pyriform, sweeter than the Mission and devoid of the rank flavor of that variety. The tree is vigorous, symmetrical, with a dense head. It is proposed to call it "McFadden" in honor of the man who raised it to a producing age.

Another notably fine colored seed-

Continued on Page 177

Agricultural News Notes of the Pacific Coast

Northern California

Hayward, Alameda County, held its farm products show last week.

Colusa County contemplates returns of $15,000,000 from its rice crop.

Wheatland, Yuba County, made first shipment of hops from the state.

Colusa County is frightening ducks from the rice sections by airplane patrol.

The Nevada County farm bureau is holding fruit packing school at Grass Valley.

The Shasta County farm bureau is planning a fair at Anderson October 25, 1919.

Returned soldiers are taking the place of Hindu laborers in Glenn County rice fields.

The Sutter County farm bureau is planning a campaign to boost for the $810,000 bonds for good roads.

Sutter County will hold good roads bond election August 28. The amount of the issue will be $810,000.

Colusa grain growers recently sold 30,000 sacks of barley and report activity in the entire grain market.

The cattle protection board will inaugurate a cattle inspection and shipping depot in Mendocino County.

State employment bureaus have found places for 5909 workers, men and women, during the past year.

The Eden Township Farm Products Show to be held at Hayward, August 8, 9 and 10 will distribute over $1600 in cash prizes.

Yuba City is shipping 50 to 60 cars of fresh fruits daily during the height of the season. Shipments are about twice as heavy as last year.

Grain boats loading at Red Bluff in Tehama County are forced to materially cut their loads owing to the low water of the Sacramento.

Rice growers are being warned not to contract 1919 crop at present prices. It is predicted that an especially good market will prevail.

Sacramento Valley chamber of commerce is moving to preserve Lake Tahoe. There is an effort to take its waters into Nevada for irrigation.

Members of the Associated Milk Dealers of San Francisco have been acquitted of the charge of having violated the Cartwright anti-trust law.

Hops are now selling at 60 cents. Some growers who sold early will only get five cents as they sold on the supposition that prohibition would destroy values.

The work of the market division of the Glenn County farm bureau now requires the attention of three men. This division markets products for members of the bureau and buys supplies.

Rabbit producers in the Bay counties have practically completed arrangements for the formation of a cooperative marketing organization under drection of the state market director.

The packing plants of the Geyserville Cured Fruit Association and of the Santa Rosa Cured Fruit Association have been taken over by the Growers' Packing and Warehouse Company. The cooperative organizations operating these two plants have transferred practically all their membership to the Prune and Apricot Growers which expects to sign up 90 per cent of the growers in the county for the 1919 season.

Central California

The Valley Fruit Growers will open an office at Dinuba.

Grape shippers are threatened with shortage of refrigerator cars.

California wine grapes are going to be shipped East as jelly grapes.

Lodi, San Joaquin County, is building a plant for processing and packing almonds.

Santa Cruz County farm center meetings: Happy Valley, August 22; Soquel, 27.

Large shipments of green fruit, principally peaches and plums, are being made from Tulare.

Fresno County Poland-China breeders hold their first sale of pure breds Wednesday, August 20.

Pink root is the newest disease of onions to attack onion growing sections of San Joaquin County.

The San Joaquin County Poland-China Association will hold a sale of 40 pure bred boars and 20 sows at Lodi on September 19.

The olive crop in the San Joaquin Valley will be light this season, some orchards revealing not more than 25 per cent of a normal crop.

One Tulare County rancher has been harvesting grasshoppers in sacks extended by poles from the side of his automobile and is feeding the insects to his hogs.

According to grain buyers the district around Tulare is the best in the state for the production of "Gyp" corn and 75 per cent of the state crop is produced in Tulare County.

Dates of the fair at Patterson, Stanislaus County, have been changed from August 22-23 to August 15-16 so as not to conflict with the dates of fleet visit in San Francisco.

Hog auctions held at Tegner in conjunction with Stanislaus County farm bureau sales will now be held independently. The Stanislaus County sales will be held monthly at Turlock.

Allen Thompson and R. C. Sturgeon, president and secretary of the Tulare County Duroc-Jersey Association, addressed an organization of the Fresno County breeders at Fresno August 2.

George W. Bell, who acted as auctioneer at the recent Duroc-Jersey Association sale in Tulare has been engaged for the sale by the Tulare County Poland-China Association, sale to be held October 23 at Tulare.

Work of canning the Tulare County peach pool began at the cannery of the California Italian Products Company plant at Tulare, which has been leased by the California Cooperative Canneries of San Jose for the peach season. The crop was bought at $92.50 per ton.

Manager Niswander of the Peach Growers says that fully 25 per cent of the dried peach crop this year is sold direct to European nations; much of the remainder also finds its way to European consumers. Europe is hungry for fruit and willing to pay almost any price to get it.

The stock show committee of the Tulare board of trade is at work on prize lists for the fall stock show to be held October 6-11 at Tulare, and $2500 will be offered in the hog and cattle classes alone. Breeders from all parts of the state are making inquiries about the show.

Southern California

Hemet canneries have started on peaches.

Yucaipa and Oak Glen report heavy crops of apples.

It is expected that apricot pits will bring about $40 a ton.

San Diego County reports its biggest ever output of apricots.

Work on control of bean aphis has been started in Ventura County fields.

A larger planting of lettuce for the Imperial Valley is estimated next year.

The Yucaipa Apple Growers' Association is handling the early apples of its members.

Hemet apricot growers report serious losses because of peddlers stealing entire truck loads of fruit.

County Bee Inspector Stanley reports shipment of a carload of honey from Highland, valued at $8000.

The Redlands section reports probably 20 per cent more of olive output than her orchards gave last year.

San Diego County's output of beans, both Limas and small varieties, will be about two-thirds that of last year.

Brawley, Imperial County, reports large acreage being panted to milo. Contracts are reported for $53 per ton.

The irrigation company at Fillmore, Ventura County, is laying new pipe lines and increasing efficiency of its plant.

A $50,000 fire destroyed part of the Arlington cannery. Much of the machinery was saved and it is thought most of the stock.

Manager Thomas reports plans well under way for the great live stock exhibit at Exposition Park, Los Angeles, October 18-26.

Commissioner Kellogg of Santa Barbara County reports satisfactory control of the grasshopper pest which threatened the county.

Elsinore people are protesting against the draining of Lake Elsinore. The hearing day has been set by the state railroad commission.

Ventura bean growers are sending some pungent telegrams to Washington asking as to the importation of Japanese or Manchurian beans.

Apricot canning is over at the Elsinore cannery. It is expected that the tomato pack will be very heavy. Work on tomatoes will start almost immediately.

Cotton growers of the Blythe district in Riverside County have had to send laborers into the fields to straighten up the stalks knocked down by the recent storms.

Southern California will have two milch goat exhibits, one at the Southern California Fair at Riverside, October 7-11; the other at the Live Stock Show, Los Angeles, October 18-26.

Palo Verde Valley is finding that it will be necessary to advertise for cotton pickers. It is anticipated that section will produce at least 17,000 bales. Over 21,000 acres are to be picked.

E. O. Essig of Oxnard announces that not more than a half crop of limas is expected from the fields of the county. He also says that the Lima Bean Pool has not had a single carload of beans rejected because of quality.

The Coast and General

Crook County, Oregon, will hold its fall fair October 2-4.

An active campaign against Canada thistle has been started in Linn County, Oregon.

The schools of Arizona, exclusive of universities, will cost more than $1,000,000 the coming year.

The value of taxable property in Arizona is at least $25,000,000 more than the assessments of 1918.

One of the features of the state fair of Arizona this year will be a day devoted to the veterans of four wars.

Digger squirrels are becoming a pest in the orchards about White Salmon, Washington. This is a new pest in that region.

A broom factory is to be established in Phoenix, Arizona. Capacity to be from five to six hundred tons of broom corn annually.

Total deposits in all banks of the state of Arizona as reported by the bank comptroller for call of June 30 were $67,157,955.41.

Three hundred thousand trout are to be put into the streams of the White Mountains of Arizona by the state game warden.

The Alaskan railroad from Seward to Fairbanks, an ice-free port, will be when completed, 471 miles long. Most of the line is now ready for use.

Some losses of stock have been reported from the grazing of cattle in cantaloupe patches. It is supposed that the dying vines and melons become charged with hydrocyanic acid a deadly poison.

Walla Walla County, Washington, will ship out about 200 more cars of fruit this year than last. The Spokane district was more heavily hit by the June frost and shipments will probably be under last year's.

Fourteen tracts of state land on the edge of the Salt River project in Arizona, aggregating about 10,000 acres have been recently sold by the state land commission, the price ranging from $5.00 to $35.00 an acre.

The Salt River Valley Water Users' Association, Arizona, is to build an auxiliary steam plant to supplement the power developed by the water from the Roosevelt Dam. This will enable them to make use all of the time of the full power developed by the water at the season of greatest power, or 7000 kilowatts. It is expected that this will permit of the building of power lines throughout the valley for the use of farmers.

Farmers under the Salt River Valley Project in Arizona are making an effort to form a farm loan association to take advantage of the federal farm loan act. Under the law at the present time land under government projects is not eligible for loans. It is thought possible that if a sufficient number of farmers are interested a special ruling may be made for the purpose of loaning money under the project.

Among the 6000 delegates at the World Cotton Conference, to be held at New Orleans October 13 to 16 will be representatives of the long staple cotton industry from the Salt River Valley of Arizona. Among these will be Edward F. Parker, general manager of the Southwest (Goodyear) Cotton Company; F. W. Griffith, president of the Phoenix Chamber of Commerce; E. W. Hudson, member of the state horticultural commission, and Honorable Dwight B. Heard, owner of the Arizona Republican.

The Purity of Hydrocyanic Acid

THE insecticide and fungicide laboratory of the University issues the following statement as to determining the purity of hydrocyanic acid:

At present there are two companies manufacturing prussic acid for citrus fumigation in California: the Owl Fumigating Company, the originators of prussic acid liquifaction methods, which is beginning its second year of large scale production; and the Pacific R. & H. Chemical Corporation, Los Angeles, which has entered the field this season. The former plant is being remodeled to produce high grade prussic acid from a crude cyanide manufactured by the American Cyanamid Company. The latter uses a high grade sodium cyanide manufactured by the Roessler and Haaslacher Chemical Company as a source of prussic acid. Neither plant is entirely completed but appears to be keeping up with orders. Both concerns are optimistic that their plants will be in shape to handle the increasing volume of business as the fumigating season advances. The operation of the plants is being supervised by technically trained men, the empty containers are being carefully washed before refilling, and their contents are tested for purity before delivery, so that the future looks bright for an ample supply of high grade material for the present fumigating season.

The Insecticide Laboratory has recently tested the prussic acid produced by both companies at their plants and at a number of places after delivery to fumigators. All samples were above 98 per cent purity. These tests will be repeated from time to time throughout the season.

Through the publication of Bulletin 308 the experiment station has placed in the hands of the fumigators a ready means of approximating the purity of commercial prussic acid. Tables are given by which the percentage purity can be determined by taking the reading of a hydrometer floating in the liquid and noting the temperature of the liquid and referring to the tables.

A tall glass cylinder such as is used for checking the delivery of the applicator, may be used for taking the hydrometer and temperature reading but a closed container is obviously preferable.

A chargometer is a convenient apparatus for withdrawing the liquid from a delivery drum to avoid pouring out. This is a well-known instrument used for testing battery fluids and may be obtained from automobile accessory supply stations and from dealers in chemical apparatus. The hydrometer supplied with the instrument is for liquids heavier than water. It will be necessary to discard this and to purchase one for liquids lighter than water.

Hydrometers are carried in stock by the chemical supply houses. The type most readily obtainable and which is within the range of densities of prussic acid is the Baume hydrometer for coal oil and gasoline with a range from 45 to 90 degrees Baume. The instrument should not be more than seven inches long if used with the chargometer. It is preferable to obtain one provided with a thermometer so that both readings can be obtained from one instrument.

In making the test with the chargometer the hydrometer is placed inside the glass bulb, the rubber bulb is fully compressed and then the tip of the instrument is inserted into the liquid to be tested. The rubber bulb should be released slowly, thereby sucking up enough of the liquid into the glass bulb to float the hydrometer, If the instruments are warm the liquid will boil and interfere with the reading. In this case, a charge of the liquid should be sucked into the apparatus and expelled and then air aspirated in and out for a few minutes. This will cool the apparatus so that boiling is prevented. The hydrometer should be read from below the surface of the liquid, the reading being taken at that point where the straight line formed by the surface cuts the hydrometer stem. Liquid can be withdrawn from a partially filled drum by attaching a piece of rubber tubing to the tip of the chargometer. Rubber cement can be used to attach the rubber tube extension if the chargometer has a rubber tip, otherwise the end of the tubing can be slipped over the end of the glass tip.

California Can Produce Rootstocks

By G. H. Hecke, California State Department of Agriculture

ONE of the perplexing problems so closely touching the fruit growing business of the state and the entire Pacific Slope, partly as an aftermath of the great war, is the threatened deficiency in rootstocks!

To the fruit grower this question is one of vast importance. It was upon these sturdy, resistant rootstocks imported from Northern France and Belgium that he budded his millions of pears and apples, for up to this time American horticulturists have utilized these famous rootstocks to the exclusion of native products.

Now we are confronted with two conditions which, although temporarily working to great disadvantage in producing a shortage of imported rootstocks, must in the end serve a good purpose through the stimulation of the production of such stocks in the United States: Many of the sections of France and Belgium could not now furnish these rootstocks owing to their own needs and the fact that the departments given over to the growing of rootstocks have suffered devastation, and such importations are now proscribed through the enactment of Federal Quarantine No. 37 of June 1, 1919, which is intended as an added safeguard against the introduction of noxious plant pests and plant diseases which have produced such great economic loss to American horticulture and agriculture in the past.

Recently a bill was introduced in the house of representatives by Hon. Norman J. Gould of New York, and which has since been referred to the committee on agriculture for the purpose of providing for experimental work in connection with the production of home grown rootstocks.

The question is asked every day: "Can I grow such and such a fruit or crop in California?" The answer is: "You can!"

The wealth of varied soil conditions, the climate, usually lacking the extremes of temperature suffered by other parts of the United States and Eastern Europe, the natural barriers afforded by the mountain ranges on the east and the ocean on the west, all contribute to produce ideal conditions for the production of American rootstocks.

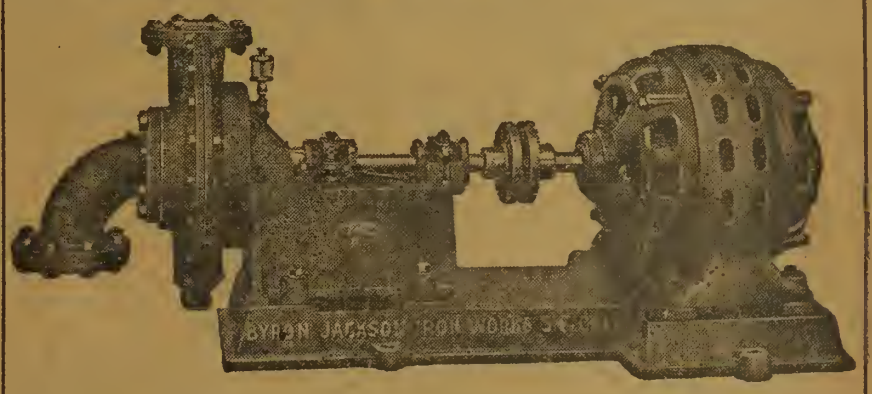
It is fortunate at this time that steps already have been taken to promote this important phase which contributes so largely to the interest of our fruit growing industry.

Opportunity is knocking at the doors of the nurserymen of California. Here can be grown the rootstocks not only for the ever increasing demands of the state but for those of the United States. Many nurserymen have been quick to see the possibilities for the future in this direction, as the large plantings will attest, and there is every reason to believe that the near future will furnish the ultimate satisfactory solution and the state of California will contribute rootstocks not only to the state itself, but to the entire country.

CURING PRUNES

A Butte County subscriber has requested information as to drying and dipping of prunes. An old time method given in the columns of the Cultivator. some years ago as described by Mr. Richmond, a large San Jose grower, is as follows:

'The green fruit is hauled to the dipper shed in picking boxes and there passed through a light solution of lye. A kettle or tank holding 200 gallons of water and a basket container is used for this purpose. In



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If you want your land to hump itself with the biggest crop you ever had, pulverize every clod for quickest seed sprouting, and loosening up the plant food for most rapid growth of young plant. And do it with this light draft, roller-bearing

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It crushes every clod into powder, loosens every particle of plant food, thoroughly packs the soil for holding the necessary moisture for the most rapid growth and biggest possible crop yield. Prices reasonable. Strongly built, roller bearing, lasts lifetime.

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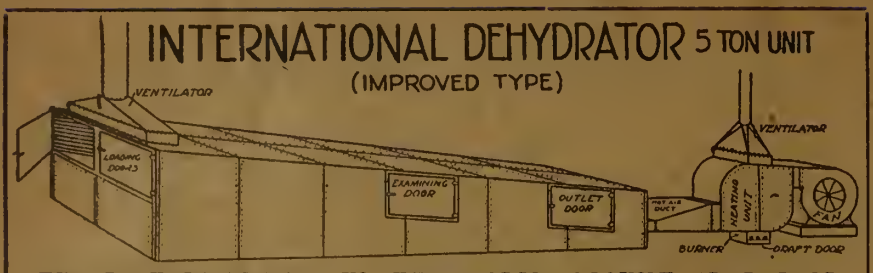

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—says Geo. Studebaker, age 66, of Philo, Mendocino Co., Cal.

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anywhere on approval—I pay the freight, you send no money until you have examined ladder thoroughly. When Mr. Studebaker received the ladders he wrote me as follows: "I am enclosing check for ladders. Your ladder is all right. I am 66 years old today and have been picking apples from the ladder. Mine is the first one ever used in these parts. I never had any use for three legged fruit ladder, but yours is certainly all right. Yours truly, Geo. Studebaker."

The offer is open to you, too. Write me today. I'll send you two or more ladders on approval. I pay freight, you pay when you examine ladder. If not pleased, return ladders at my expense. Write NOW before you forget it.

Prices: 8-ft. ladder $5.00; 10-ft. ladder $6.00; 12-ft. ladder $7.20.

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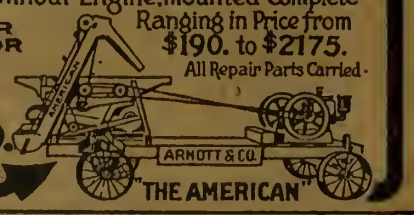

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

many instances the fruit is rinsed by passing from this dip into a vat of clear water and is then dumped onto a combination pricking board and grader, which grades the fruit into three grades so that the drying in the field can be uniform, the grader being operated by power. The fruit is then placed on eight-foot trays and taken to the drying yard and dried in the sun. The purpose of passing the fruit through the lye solution and over the pricking board is that the skin may be slightly cut, thereby preventing fermentation and producing a fruit with a clear bright meat. Many of the small growers do not use the combination pricker and grader; they dump the fruit directly from the dipper basket to the trays, allowing all sizes to be dried together. This is not as satisfactory to the grower as the first mentioned method. The most satisfactory and economical method of handling from the dipper shed to the dry yard is to use a one-horse truck especially constructed for this purpose.

"The question of drying is again a matter of judgment. Fruit should be allowed to lie in the sun on the trays until about three-quarters dried, and then be stacked in piles one above the other, leaving air vents on either end. About 20 trays can be stacked in one pile where the finishing process takes place. Under normal weather conditions it takes from ten days to two weeks to cure prunes. It has been found most satisfactory while the fruit is on the trays in the dry yard to give at least one turning by hand, shaking the trays, or with brooms, so that the fruit secures an equal drying on all sides. It also materially lessens the time of drying and makes a finer grade of fruit. Do not take your fruit from the trays until it is thoroughly cured. This word of caution means the salvation of your business."

Mr. Richmond does not give the proportions of the lye solution. A solution which is possibly stronger than the one referred to is given in a former Cultivator as follows:

The strength of the lye solution depends on the ripeness or condition of the fruit and degree of heat. If the prunes are fully ripe or partially dried and the water is not boiling, some use as strong a solution as one pound of lye to ten gallons of water. When care is used to keep the water at boiling it may be used as weak as one pound to 50 gallons.

The June Drop

TWO of our June drop items have been delayed because of special articles in the spray number and the crowded condition of the paper. The interest continues, for it is a most vital question to every citrus grower, in fact we may say to nearly every fruit grower, because citrus fruits are not the only ones which have this abnormal early summer dropping of the fruit. A subscriber at Porterville sends in the following:

A. H. Humiston

I was very much interested in the articles of the Cultivator of July 26 on the June drop. My neighbor has one tree in the corner of yard that he gives no attention except run water to it when he irrigates, and the tree now looks better and has a better crop of oranges than the trees next to it in the orchard. I am experimenting with cover crop on three acres of 16 year old trees. About the middle of May I planted one acre to buckwheat, the middle of June another acre to buckwheat and the third acre to Sudan grass. The middle of July I disked the first acre and there was enough seed ripe to start a good stand for another crop. The second acre I intend to disk in in August and plow the Sudan grass under in October. I have had plenty of water till now but indications are I will be short of water for the next six weeks. Will it be safe to risk or had I better dig up the crop and cultivate? There is very little fruit on the trees.

The Sudan grown until October would make remarkably fine addition to the soil if plowed under at that time with plenty of water, but if trees should suffer meantime for water the injury might be far greater than any possible benefit to the soil. Summer cover crops are to be grown only where there is sufficient moisture and always then with consideration of the needs of the tree first in mind. If the shortage is already here we would by all means remove the Sudan or any other cover.

* * *

Two articles which have been in hand since the first series appeared follow:

M. J. Pickering, La Habra, Orange County

Mr. Pickering was asked to inform us as to conditions in the La Habra Valley just east of Whittier. He investigated and one grower informed him that the situation was really serious. One orchardist reported that he has seen orchards which would not produce enough to pay pickers. There will be a larger percentage of full crop of Navels than of Valencias. The better class orchards will range around 80 per cent for Navels, while some Valencias show not more than 40 per cent of normal. Younger trees larger percentage of crop than the older ones. Trees with yellowing leaves retain practically no fruit, or, as one farmer expressed it, "There is no June drop on those trees; there is nothing to drop." One farmer said that the best all-round June drop preventive was stable manure, plenty of it, worked well into the soil which at all times is kept in good tilth. Don't irrigate too heavily, but at the same time keep sufficient moisture that trees are growing constantly. Summer cover crops are good if they can be grown, but it is hard to get them started in time to cover the ground before the first of June. Beans planted in the orchard during the month of May when the ground and air both were cold, refused to start to any extent. One grower reported part of orchard pruned this spring before June hot spell. Other rows were not pruned and there seems to be slight if any difference. "But again I must say that the best all-round conditioner is heavy application of manure deeply plowed under." Healthy vigorous trees, old or young, which have been kept in best of condition are generally carrying from 50 to 75 per cent of full crop.

Fred M. Reed, Riverside, Riverside County

I am estimating the next crop of Navels in this locality at 40 per cent of normal. Some groves are practically bare, while some have nearly a normal setting. From what I can see of the groves I work in and have to do with, there is as yet no consistent answer to the question of what causes the "drop." We had orchards in all stages of irrigation and cultivation and the only thing that seems to indicate a probable cause is the fact that the lots that have stuck a crop are usually those where stable manure has been used liberally, but there are too many exceptions to this to base any very definite conclusions on.

It is quite evident that heavy pruning is no advantage, as many lots that have been notoriously neglected as to pruning are doing very well as compared to the carefully pruned lots

We made no effort to evade the drop by any special method this season. So far as I have seen, the summer cover crop has not been of any advantage as to the percentage of fruit set. One of our neighbors has a lot that was all heavily pruned but three rows and those three pruned rows were the only ones that held their crop. It is to be hoped that the citrus experiment station plats in the old grove on Cleveland Avenue on Arlington Heights will furnish some authentic information on this subject this year, as they have all the commoner types of management as to fertilizing, pruning and irrigating side by side with reliable data on each.

As a result of the failure of congress to provide funds for the reclamation service, work in the Yakima Valley of Washington has been set back a year, even if congress makes an appropriation later

Bulletin on Fumigation

The agricultural experiment station of the state college of agriculture is issuing a two part bulletin, Number 308, on: "I, Fumigation With Liquid Hydroyanic Acid" by H. J. Quayle; "II, Physical and Chemical Properties of Liquid Hydrocyanic Acid" by Geo. P. Gray and E. R. Hulbert. The bulletin is of especial interest to citrus growers who are having their orchards fumigated. Even if the practical work of fumigation is left to the expert the grower has a natural desire to fully understand the processes through which the work is accomplished. We quote the summary and conclusions of that portion of the bulletin written by Prof. Quayle:

Liquid hydrocyanic acid, a new means of citrus fumigation, first used on a commercial basis in 1917, has rapidly come into favor.

The place where the greatest concentration of gas occurs under the tent from the liquid is practically the reverse of that from the pot or portable generator.

With the former method the most effective killing is at the bottom of the tree, while with the latter the most effective killing is at the top.

Aside from the scale insects, more than 75,000 ladybird beetles have been used in our comparative tests as an index of results.

The use of these insects has given discriminating data concerning the diffusion of gas under the tent, as well as on the efficiency of the different methods of fumigation, and these data have been verified by extensive field tests.

The greatest possible yield is 108 pounds or 18.56 gallons of anhydrous liquid hydrocyanic acid from 200 pounds of sodium cyanide (51-52 per cent cyanogen).

The amount of liquid hydrocyanic acid (95-98 per cent) that has been recovered at the plant during the past year has been about 78 per cent of the total available.

The amount of gas evolved by the pot or portable generator is estimated at 90 per cent of the total available gas.

During the past year 75 per cent of the gas from a given amount of cyanide in the liquid form was made to cover the same ground as 90 per cent from the same amount by the ordinary methods of generation.

Thus, while there has been a discrepancy of 10 or 15 per cent in the actual amount of gas used through the liquid method, the results in the field have not indicated any important difference on the scale insects.

Our own tests, however, both in the field and laboratory, have indicated about such difference as would be expected.

This apparent discrepancy between our own tests and commercial work in the field may be accounted for through the great variability in field work and by the difference, as has been determined, in the diffusion of the gas from the different methods.

Field examinations are usually limited to an examination of the scales within six or eight feet of the ground.

Our own tests have included the top of the tree as well. From these tests, when the results at the center and the bottom only were considered, there was practically no difference between the liquid and the pot, which harmonizes with the results in the field.

When the results at the center and top only were considered, the pot method was more efficient than the liquid method.

When the results in all parts of the tree are considered, it is necessary to use about 20 cubic centimeters of liquid hydrocyanic acid (96 or 98 per cent) to equal one ounce of sodium cyanide as given in the schedules of dosage now in practical use.

Units representing 20 cubic centimeters may therefore be substituted for the ounces, and the atomizing machines should be graduated to deliver 20 cubic centimeters for each ounce called for in the schedules.

WALNUT GROWERS BOOKLET

The California Walnut Growers' Association is issuing a small booklet, "Facts That Every Walnut Grower Should Know." This is a book containing questions and answers as to what is the California Walnut Growers' Association, when it was organized, who were the charter members, and a dozen other questions on to what is the feed department and other departments of the association, as well as description of the methods of increasing consumption and other questions on which members of the association should be informed. The book ends with a final word to the outsider and a page address by the president of the association, C. C. Teague in which he says: "For many years I have been a strong advocate of cooperative growers' organizations for marketing agricultural products, out of a firm conviction that it is only through the development of such cooperative marketing organizations that the agricultural products of the soil can be properly distributed and the grower receive a fair remuneration for his product and at the same time the consumer receive the product at a reasonable price."

American Grape Growing

"Manual of American Grape-Growing", by U. P. Hedrick, horticulturist of the New York agricultural experiment station, published by the Macmillan Company, New York, at $2.50.

This book is one of the regular rural manuals edited by Prof. Bailey. Other books in the series are "Manual of Gardening"; "Manual of Farm Animals"; "Pruning Manual"; "Fruit Diseases"; "Milk Products; etc. The author opens his preface with the statement that there are 79 books on grapes which enrich the pomology of North America, and in this number he does not count the numerous state and national publications. The strawberry has also proved attractive to writers, and 22 books have been written on that fruit; 14 on the apple; nine on the peach; five on the prune; nine on the pear; but the cherry, raspberry, and blackberry have not yet called for a separate and complete work. Notwithstanding the great number of books which have been published on the grape Mr. Hedrick says there is urgent need for a new book, for many of the former publications on the grape are many years old and methods have changed rapidly. There are also many new types of grapes and "The vineyard should be seen through many eyes'. The first halftones in the book are of two vineyards in California, and while we doubt not Mr. Hedrick's experience is mostly in New York, he is not a stranger to California's wonderful opportunities in grape culture. In fact in chapter two, touching upon grape regions and their determinants, he says:

"The Pacific slope takes precedence among the grape regions of the continent, exceeding all others combined in the production of grapes and grape products. California is the viticultural center of this great region, grapes being grown within her bounds from the foot of Mount Shasta on the north to Mexico on the south and from the foothills of the Sierras on the east to the forest that borders the coast on the west. So outlined, California might appear to be one vast vineyard, but it is only in favored valleys, plains and low hills in the territory bounded that the vine is sufficiently well suited to be productive. Outliers of this main region of the Pacific slope run north into Oregon, Washington, Idaho and even into British Columbia, forced more and more eastward the farther north to escape humidity from the ocean which northward passes farther and farther inland."

There are 18 chapters in the book touching upon The Domestication of the Grape; Grape Regions and Their Determinants; Propagation; Stocks and Resistant Vines; The Vineyard and its Management; Fertilizers for Grapes; Pruning the Grape in Eastern America; Training the Grape in Eastern America; Grape Pruning on the Pacific Coast; European Grapes in Eastern America; Grapes Under Glass; Grape Pests and Their Control; Marketing Grapes; Grape Products; Grape Breeding; Miscellanies; Grape Botany; Varieties of Grapes.

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The Heider Friction Drive does away with clutch, transmission gears, and bevel gears. In all, it means 15 to 20 per cent less parts.

With fewer parts to run it puts *more* power into the pull. A steady flow of *flexible* power—just as much or as little as you want.

It saves repair expense. It adds years to the life of the tractor. And it is so easy to run that boys and girls are operating Heiders.

For 11 years this tractor has plowed every kind of soil, hauled big loads and furnished the power for all kinds of farm machinery. Its success is merited by 11 years of *performance*. You do not have to take a "demonstration" of one or two days as your guarantee of the Heider.

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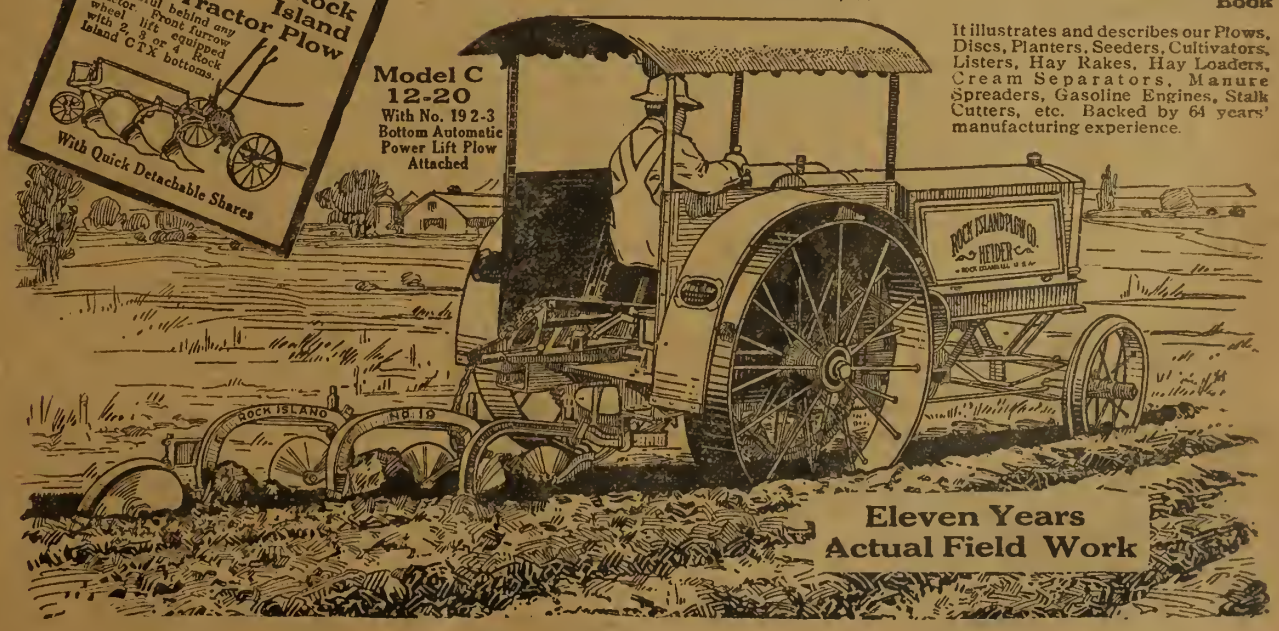

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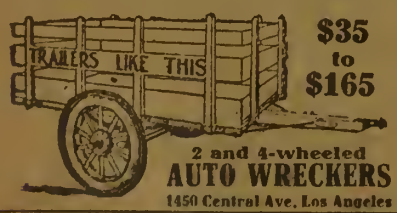

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tomatoes Rotting

What is the cause and the remedy for tomatoes rotting on the vines while still green, and also after ripening? I water them on an average of every 15 days as the soil dries out and bakes rapidly. They rot before reaching two inches in diameter.—Subscriber, Los Angeles.

Without further particulars it would be impossible to tell whether this is anthracnose, or ripe rot, or blossom end rot. In case of anthracnose burn all affected fruit and spray with Bordeaux mixture, five pounds bluestone, six pounds lime, 50 gallons water. In case of blossom end rot, keep plants growing steadily, irrigate at regular intervals and deeply and cultivate thoroughly after each irrigation. Write Agricultural Experiment Station, College of Agriculture, Berkeley, and ask for Bulletin 239, "Culture of Tomatoes in California."

Cider and Vinegar

Will you kindly tell me how to make cider and vinegar? Have several tons small apples and no market for them. Have one barrel pressed out now and am told this juice will not make vinegar because of too much acid in the apples. This juice has worked and clarified now. — Subscriber, Santa Cruz.

Presumably the inquirer has the necessary apliances, that is, crushers, presses, etc.

Good cider can be made only from apples comparatively free from worms, rot and dirt and from apples that are ripe. Only good fruit will make good cider. The sour unripe fruit does not have sufficient sugar and the finished product can not be any better than the juice with which it starts. This does not mean that the fruit must be high grade merchantable fruit but simply it must have real quality in the juices. Carefully crush or pulp the fruit and express it as quickly as possible before it colors and loses its finest flavor. Put at once iuto clean barrels. The fruit if good should make about four gallons of juice per bushel. For drinking cider it may be bottled, or, if kept in barrels, use only clean alcohol or whiskey barrels. These should be thoroughly scalded with boiling water and washing soda and rinsed clean with pure water. For making the vinegar put the barrels in a room of 60 to 70 degrees temperature and fill with the pure cider to within ten inches of the bunghole, the barrel being on its side. If filled nearer than that it may foam and "boil" over, which is objectionable. Cover the hole with a piece of cotton to prevent entrance of dirt and insects but to permit escape of gases.

For preserving cider the best method is to bottle, using only heat for sterilization. This is according to the usual pasteurizing process. Benzoate of soda may be used as a preservative but this is not recommended by the department of agriculture. Another recommendation which may be somewhat questionable is to use calcium sulphite, one-fourth of an ounce per gallon. One subscriber writes he has tried this in 50 gallon barrel and it preserved it perfectly. Do not use the preservatives in cider which is to be marketed.

Regarding making of vinegar we repeat an answer given to a similar question in the Cultivator of December 7, 1918, by Prof. Cruess as follows:

"Use a small amount of ordinary bread yeast to start fermentation of the juice. A cake of compressed yeast will be sufficient for five gallons of juice. When the yeast fermentation is complete, which will be in about two weeks time, I would advise adding about one pint of strong vinegar to each gallon of the fermented juice. This will check the growth of mold. When the vinegar has become sour enough for use it should be placed in bottles that are filled absolutely full and corked tightly. If the scum which appears on the vinegar is slimy and tough it is only vinegar 'mother' and is not harmful to the vinegar. If the scum is white and wrinkled and easily broken it consists of 'wine flowers' which will spoil the flavor of the vinegar. The addition of one pint of strong vinegar to each gallon of fermented juice will prevent the formation of this 'wine flowers' film. If the vinegar has become moldy there is practically nothing that can be done to remove the moldy taste. It is sometimes possible to remove part of the moldy flavor by shaking the vinegar with a small amount of cotton seed or olive oil."

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Time to Close Estate

An estate has been probated and claims filed. How long must it be held open to filing of the claims of creditors and what fees are attorneys allowed?—Subscriber, Orange.

If the estate is under $10,000, it cannot be closed within four months after the first publication of notice to creditors. If it is over $10,000 ten months must elapse after the date of first publication of notice to creditors. The statutory fees of executors and administrators in the matters of estate are seven per cent for the first $1000; for the next $9000 four per cent; the next $10,000 three per cent, and thereafter reducing accordingly. After all claims of all creditors are proven, the final account and petition for distribution by the administrator must be filed and heard, decrees of distribution entered and thereupon the properties of the estate distributed, unless it may be necessary to sell some part of the estate in order to pay the claims, costs, or to properly divide the property among the heirs.

Road Fenced In

My husband bought a ranch 25 years ago, along the side of which ran a road in use since 1872. The side of the ranch was fenced, 15 feet being left as half of the roadway. Twenty-five years later the land alongside the ranch was leased; the lessee fenced the leased ranch, placed posts against the wire of my husband's ranch, taking in 15 feet which he has cultivated, and has cut off my road from the ranch, leaving me no outlet. This has run on for some months. My husband died some time ago. How can I protect my rights?—Subscriber, Jamacha.

The fact that a road has been used by the public for any length of time merely gives to the public an easement for road purposes over the land so used. The title of the land itself remains with the owner. The owner of the land would therefore be entitled to bring an action in ejectment against the party so leasing and fencing the roadway, and as an incident to that action would doubtless be able to collect whatever damage may have been suffered as well as the value of the crops which have been planted. In this case in order to maintain such action of ejectment plaintiff must have the legal title to the property. The facts do not state as to whether or not the estate of the husband has been probated. In order to bring this action, if the title was in the husband, it would be necessary for the widow to commence probate and have an administrator appointed who would then be vested with the legal title sufficient to maintain such action.

Tomato Contract

I made a written contract with four men to raise tomatoes on my 40 acres, I to furnish everything except labor which they were to furnish. Three of them, before the job was completed, left; the fourth brought in a new man; only 20 acres of the plants remain; the fourth man claimed that the loss of 20 ares was caused by improper planting. I have done everything to fulfill my part of the contract. The tomatoes are sold to the canners and picking starts at once. May I claim damages for the loss of the 20 acres of plants? Contract calls for an equal division after money is received. If so how will I proceed?—Subscriber, Porterville.

If the loss was occasioned by improper planting or improper care you would certainly be entitled to your damage therefor. It would doubtless be the case that the four original parties were partners and that the new man coming in would be obligated to stand in their shoes. Whether he was an employe of the surviving partner or accepted as a new partner does not quite appear. You could doubtless bring action for breach of their warranty as competent tomato raisers and attach in the hands of the cannery the monies which would come to the surviving partner, and thus hold it for the termination of the suit.

Bees a Nuisance

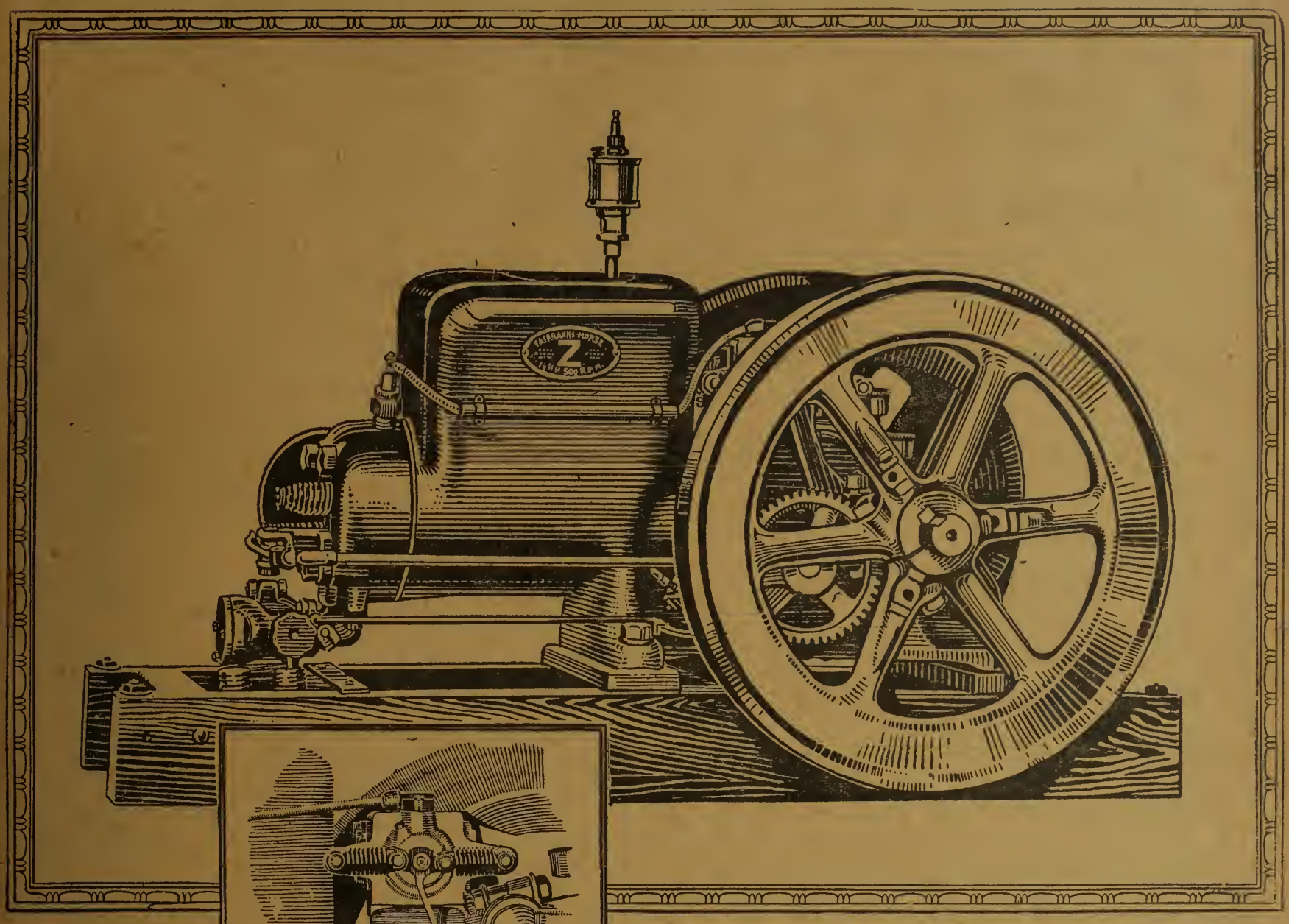
A month ago an apiary of 500 stands moved within a mile of my place. The bees eat the fruit both on the trays and on the trees so that it is difficult to pick it without getting stung, and they have caused serious damage to my fruit. What redress have I? Can the owner be made to move them? Last year they bothered in the same manner.—Subscriber, Yucaipa.

A nuisance is defined among other things as being anything which is an obstruction to the free use of property or which interferes with the comfortable enjoyment of life or property. The facts stated in the foregoing question would undoubtedly constitute the maintenance of this apiary a nuisance. The remedies are a civil action for an injunction and abatement. There is a New York case which has held that annoyance and discomfort caused by the keeping of bees was a nuisance and constituted proper case for the issuance of a permanent injunction. The difficulty in the matter would be to identify the bees, as you could not enjoin a man from maintaining such bees as a nuisance unless you could prove that the particular bees which belong to the man were the ones that caused the nuisance.

Homestead

Can a wife claim homestead entry on a homestead for which the husband has received the land office's final receipt but has not as yet received his patent? If the husband dies, does the wife become the unconditional owner of the property even if there are children? If the wife dies, may she dispose of this property by will? If such homestead claim is held by the wife can the property be legally transferred or sold by the sole action of the wife?—Subscriber.

Before the homestead entryman has become entitled to his patent he has no such interest as would make it on his death a part of his estate, but by the statute his surviving widow may compel the residence required by law and thereupon become entitled to patent. But if the entryman has obtained his final receipt and complied with all the obligations of the law so that his right to a patent has become perfect, he is invested with a full equitable title. In case of his death in the interim the title to the land inures to and becomes vested in the heirs and assignees of the deceased patentee, as if the patent had been issued during his lifetime. In such case it would be subject to disposition by the will of the patentee, or in case he left no will, then by the probate laws wherein the land was situated If he left no will and left children, the children would be vested with an interest in the property, and the wife could dispose of only such portion as would be decreed to her by the distribution of the estate of her husband. The homestead claim in question in the state that this one is may be legally transferred or sold, as it is the property of the entryman and the government holds the bare legal title in trust for him.



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TiziT TiziT

Scale Logic

The Black Scale is almost all hatched. Some has been hatched for three months. If you fumigate now you may get a good kill on the Black Scale but you will not kill the unhatched Purple. If you wait until the Purple is ready for fumigation it will be too late in many cases to get a good kill on the Black. Result—orchard still dirty. Orchards that were dirty and non-productive five years ago, are now clean and paying large profits as a result of using Tizit Spray each year.

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Buy only Melilotus seed that has a quality tag on each sack. It protects you against the low germination seed so general on the market this season. This seed is above 99 per cent pure and above 90 per cent germination.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Some Prunes

THE first prunes of the 1919 crop in the Santa Clara Valley have been picked and delivered to the association packing houses, according to a statement made today by H. G. Coykendall, general manager of the California Prune and Apricot Growers, Inc.

This means that shipments of this year's pack will be made before the end of August and that with the promised warm weather which is looked for the last of this month heavy shipments of prunes will be sent out from the Santa Clara Valley during September.

Reports received by Coykendall from the association field men in other prune districts of the state show that this year's crop will have a large early yield in every important producing county unless unfavorable weather conditions interfere to retard the ripening of the fruit.

First delivery of prunes to the packing houses before the middle of August sets the beginning of the 1919 season several weeks ahead of the date when the fruit began to be received last year.

Growers, members of the cooperative association, will be paid 15 cents a pound for their largest fruit, running 20 to the pound, as soon as the fruit is delivered at the packing house. For sizes ranging from 30 to 100 to the pound they will be paid on an eight cent basis on delivery and for the smaller sizes five cents. Full payment will be made by the association to its members after the fruit has been distributed in the world's markets.

The association estimates that it will handle 180,000,000 pounds of prunes for its members this year, which at the prices to be paid the growers, will net them about $25,000,000. Half of this sum will flow into their pockets within the next three months under the arrangement by which they are paid approximately 50 per cent for their fruit on its delivery.

The Canadian market will receive the first shipment of dried apricots to be sent out of the Santa Clara Valley this year by the association. A carload of mixed grades now being made up will be shipped to Canada before the end of this week according to a statement made today at the association headquarters.

Other apricot districts of the state have already shipped several cars of dried apricots to New York and Chicago and other eastern markets and additional cars are expected to be sent out much more rapidly from now on.

Vacuum Process of Dehydration

"Although the preservation of food by drying is an old art, it was not until recently that the problem of food dehydration received any serious scientific study," says a writer in the Popular Mechanics Magazine. "As a result of many experiments here and abroad, we are now in possession of enough facts to enable the development of the food drying art into an industry of large proportions. There have appeared on the market preparations of dehydrated vegetables produced by some air-current system in which the cut vegetables are heated in a current of warm (dry or moist) air until the product is considered dry enough to keep. The results of this type of vegetable dehydration are quite well known. It must be noted, however, that the air-current system has two marked disadvantages. First, it is uneconomical, wasting about three-fourths of the fuel employed; and, second, it is not applicable to a variety of products, the most important of which is meat. We are familiar with South American jerked beef and air-dried fish. Those who have tasted either of these will realize the difference, in flavor and appearance, between them and the fresh product.

The necessity for further development in dehydration of these products and the need for a more economical system was clear.

The task of evolving a process and developing a product suitable for use in the field was assigned to Drs. K. G. Falk and E. M. Frankel by the surgeon-general. In this they were successful, and there is now available for public use a method by which foodstuffs of any kind may be dehydrated and reduced to a condition in which they can be kept indefinitely without the use of refrigeration or preservatives, the latter term including smoke, salt, saltpeter, and sulphur dioxide.

"Briefly, the process—originated at the Harriman Research Laboratory in New York City, and industrially worked out at Columbia University—is a vacuum method, in which the foodstuffs without any previous preparation except ordinary cleaning are heated in an air-tight chamber, from which the air and other gases or vapors are exhausted. Under these conditions the water in the food product, which ordinarily boils at 212 degrees Fahrenheit, can by proper adjustment of the vacuum, be made to boil at 100 degrees Fahrenheit. Thus, the foodstuff is never overheated, and no coagulation of protein materials or other changes induced by high heat are brought about. As a result of the low temperatures employed, the volatile aromatic oils which give most vegetables and fruits their characteristic tastes, are retained. In contrast to the air-current system, drying in vacuum takes place from within the mass rather than from the surface, so that the outside of the pieces of food is not made tough and sometimes impermeable to water, as is the case with air-dried products. Again, many articles of food cannot be dehydrated in a current of air because of their tendency to darken unless they are treated beforehand to prevent discoloration. Thus, for instance, potatoes, both sweet and white, must be steamed first, while apples and other fruits must be impregnated with sulphur dioxide before drying. With the vacuum method it has been found unnecessary to resort to any of these preliminary treatments. Similarly, in the dehydration of meat and fat fish, it is possible, due to the absence of air, to preserve the fatty components without any tendency to rancidity."

Spray for Cabbage Worms

Cabbage plants are often seriously injured and the crop entirely destroyed by a number of cabbage worms. Some of these are the common cabbage worm, the cabbage looper, the cabbage plutella and cut worms. The adults of these are moths or butterflies which lay their eggs on the cabbage leaves. These eggs hatch in a few days and the young worms feed on the foliage. They grow rapidly and by the time the cabbage is beginning to head they may be very numerous. It is then that they do the most damage by causing imperfect heads or heads which will not keep.

These worms may be killed, says the University of Missouri college of agriculture, by spraying the cabbage plants with an arsenical poison. Dissolve four pounds of laundry soap in several gallons of water. Add enough water to make 50 gallons. Then stir in 1½ pounds of powdered arsenate of lead or three pounds of the paste form. The soap is to make the liquid spread better and to make it adhere to the smooth surface of the cabbage leaves.

To make a smaller amount of the spray use one-half ounce of the powdered arsenate of lead or one ounce of the paste, an inch cube of soap, and one gallon of water. Spray on the foliage so as to get all parts of the plant protected. Apply as soon as the worms are noticed doing damage or shortly after the plants begin to grow well. Several applications at intervals of ten days or two weeks may be

necessary to control the pests.

Dusting may be substituted for spraying if desired. Use one part of the powdered poison to four parts of air-slacked lime or flour. Mix thoroughly and dust on the plants from a porous bag, or a can with nail holes in the top. Apply thinly while the dew is on the plants.

Since the cabbage head grows from the inside there is absolutely no danger from poisoning by eating the cabbage. If outer leaves are removed (and they always are) spraying is safe up until time to harvest the crop. Spray early in the season and it will not be necessary to spray when the heads are forming.

THE MASLIN FIG ORCHARD

Continued from Page 169

ling was secured by crossing Mission with Maslin capri No. 148. It is of medium size, irregular globular in shape, with no neck, skin thin and delicate, dark purple, almost black towards the apex, and translucent in the shade.

A cross of large Black Douro with a purple capri, Maslin No. 91, has produced remarkable results. Out of ten seedlings sent to C. A. Culp of Pacific Grove, most of them are capris. One of the latter is a light pea green in color and probably one of the largest capri figs known, ranging in size from two to two and one-half inches in diameter. Several of the capri are purple. One of the edible figs is medium size, jet black at full maturity. It is a rich, sweet fig, better than the Mission.

A first class fig, derived from crossing the West, No. 14, and a capri of the Maslin orchard, has been produced by one of these seedling growers at the United States station at Indio. In color and shape it resembles Lob Ingir, though not quite so large as that variety. Although of a Smyrna strain it matures without caprification, and unlike some Smyrna varieties in that hot, arid climate, drops from the tree when mature and dry, like the Lob Ingir, instead of holding on, mummifying and losing its flavor. On account of its ample foliage of large leaves it seems well adapted to the desert region.

As thousands of seedlings distributed to various parts of the state come into bearing, a considerable number of new and exceptionally fine figs are developing and will soon add many excellent varieties to the list already in cultivation.

FAIR DATES

Patterson Fair, Patterson, August 22-23.

California State, Sacramento, August 30-September 9, Secretary Chas. W. Paine.

San Diego County, Balboa Park, San Diego, September 9, Secretary Mellinger.

Humboldt County, Ferndale, September 16-18, Secretary W. S. Moore.

Antelope Valley, Lancaster, September 17-20, Secretary, R. B. Cameron.

Napa County, Napa, September 18-20, Secretary E. P. Locanini.

Kings County, Hanford, September 22-27, Secretary Frank C. Russell.

Glenn County, Orland, September 22-27, Secretary E. A. Kirk.

Fresno District, Fresno, September 30-October 4, Secretary C. G. Eberhart.

California Industries and Land Show, San Francisco, October 14-19, Secretary E. H. Brown.

Tulare County Live Stock Show, Tulare, October 6-11, Secretary R. C. Sturgeon.

Southern California, Riverside, October 7-11, Secretary W. W. Van Pelt.

Los Angeles Live Stock Show, Los Angeles, October 18-26, Secretary C. R. Thomas.

California International Live Stock, San Francisco, first week in November, Secretary Gordon H. True.

NAPIER GRASS

The University of Florida has issued a bulletin on Napier grass, introduced to this country only a few years ago. As to its distribution and history the bulletin says:

Napier grass is a native of tropical Africa. The Rhodesian department of agriculture has the distinction of having first introduced it into cultivation. This was about 1910. In 1913 the United States department of agriculture first introdueed it into this country. Here it promises to be valuable for planting in the extreme South, including the entire state of Florida, and a strip extending through the southern portions of Mississippi, Louisiana and Texas. It also promises to be successful in Southwestern Arizona and the warmer portions of California. Work with it was first started at the Florida experiment station in 1915. Since that time it has been grown cooperatively or distributed in small lots for planting in many widely separate sections of the state.

ONTARIO AGRICULTURAL SCHOOL

Attendants at the Smith-Hughes courses, held under the supervision of State Supervisor Lillard at the agricultural school of Ontario, have united in words of commendation as to the manner of conducting of school touching upon vocational subjects. The signers of the statement as to the work given at the school say:

"Ontario is to be congratulated on her school facilities and the faithful, efficient and devoted teachers who enter into their work with a zest and whole-heartedness that commands success.

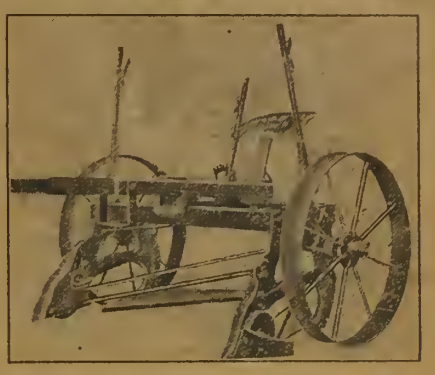
We desire to commend to state officials and others the entire suitableness of Chaffey Union High School as a place for future meetings of the kind, such as has just been held here this summer."

The signers are Messrs. Raymer, Mullins, Newbold, Holmes, Condee, Wardrip, White, Montgomery, Finch, Johnston, Alcorn and Pettus.

DISCUSSION OF SOIL MAPPING

Our readers with a liking for thoroughly scientific discussion of soils will be interested in "Are Soils Mapped Under a Given Type Name by the Bureau of Soils Method Closely Similar to One Another?" written by Robert L. Pendleton and published by the University of California Press, Berkeley, at $2.00 per copy. The book has a foreword by Prof. Chas. B. Lipman. The author does not fully endorse the methods of the bureau of soils and in this Prof. Lipman disagrees somewhat with the author. As noted above it is a strictly scientific discussion and will have little of real interest for the practical farmer.

Southern California's production of Black-eye beans and Limas will be materially less than that of last year.



The Improved Caledonian Riding Bean Harvester

The Caledonian is without doubt the best bean harvester ever used in California. Mounted on steel wheels it requires less power, it does better and faster work than a sled type and will outlast two sleds—a considerable saving. It has a three lever adjustment. All parts in stock, including extra blades.

A. F. George Co.
Distributors
200-202 North Los Angeles Street
Los Angeles

Minutes Count When The Grain Is Ready To Cut

EVERY farmer knows that Harvest time, when the crops of a season's labor must be gathered, demands prompt action. *Minutes count.*

Any tractor-engine trouble means costly delays to him, idle hands and grain lost which might be turned into dollars.

The hot, dependable sparks delivered by the K-W High-Tension Magneto, insure constant no-trouble ignition, guaranteeing service from the tractor 24 hours a day if necessary.

The K-W High-Tension Magneto is of the simple inductor type construction. There are no troublesome commutators and brushes, revolving wires or collector rings, no moving wires or sliding contacts. All connections on the K-W Magneto are permanent and stationary.

The K-W Magneto is equipped with an Impulse Starter, insuring *instant starting* of the engine, no loss of time in beginning the day's work—no interrupted service afterwards.

Spring, Summer, Autumn, Winter, the tractor that is K-W equipped can be depended upon under all weather and working conditions to develop the maximum power out of every drop of fuel used, regardless of the kind or how low the grade.

K-W Magnetos were built *for tractors* and their reputation for reliability has been proved *in tractor service.*
Write for literature and list of K-W equipped tractors.

THE K-W IGNITION Co.
2895 Chester Av. CLEVELAND, OHIO. U.S.A.

TRADE K-W MARK **High Tension MAGNETOS** Fire Any Kind of Fuel and Get Maximum Power Out of Every Drop Used

Carruthers' Farms
Berkshires
— Public Sale —
Live Oak, Calif., Saturday, Aug. 23

70 Head of Boars, Sows and Gilts 70

The offering to be sold on the above date is in every way up to the high standard set by my former sales and will consist of boars, sows and gilts of a character to suit any buyer—the established breeder, the beginner or the man wanting one or more boars to increase the profits from his pork operations. Every animal sold has been immunized against cholera and swine plague by Purity anti-hog cholera serum and mixed vaccines. You run no risk. All are sired by one or another of my famous herd boars—AMES RIVAL 100TH, LIVE OAK CHAMPION and MAYFIELD SUPERBUS.

The sale includes three out-standing show sows; 12 under-a-year sows; 20 young gilts; 30 boars, among them at least 10 high class herd boar prospects.

Two Herd Boars Sell

I will also sell the two-year-old boar LIVE OAK CHAMPION, reserve grand champion at the 1918 state fair, and Mayfield Superbus, a son of the great Superbus. Two better boars will not sell this year.

Write for catalog and other information

W. M. Carruthers **Live Oak, Calif.**

Ord L. Leachman, Auctioneer

Raising the Standard of California Bacon

MONTELENA HERD

Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

A. L. TUBBS CO.

Calistoga - California

California Wonder

KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets

Jacks and Jennets for sale at all times. Come and see them.

John Burrell

R. F. D. B. Box 74
Hanford, Kings County, Cal.

Save Your Hogs

Raise Your Hogs and Cattle at a Profit

Assist Nature by Feeding

Economy Stock Powder

A general conditioner, a worm expeller and a disease preventive.

Send for FREE SAMPLE and our BOOK on LIVE STOCK.

ECONOMY HOG & CATTLE POWDER CO.
Hearst Bldg. San Francisco, Cal

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Make Silo Walls Air-Tight

WITH the silo filling season approaching, a careful examination of silos, followed by necessary repairs, will help to improve the keeping quality of the contents. According to studies of the United States department of agriculture air-tight walls are the chief requirement; in fact, a leak no larger than a small nail hole may spoil several hundred pounds of silage. In the case of wood-stave silos the hoops and braces should receive attention to insure close fitting.

Silos made of concrete, brick, or other material of porous or semi-porous nature, are benefited by an inside coating of a preparation which seals the pores and also prevents the action of silage juices on the walls.

The coating most commonly used hitherto is coal tar thinned with gasoline and applied with a paint brush. A number of materials of like nature have been considered for this work, but the one showing the most promise is paraffin.

How to Apply Paraffin

Paraffin may be applied either cold or hot to silo walls. With the cold method, the paraffin is dissolved in a volatile carrier like naptha until a saturated solution is obtained. Four pounds of paraffin dissolved in one-half gallon of gasoline or naptha will make one gallon of this solution. The solution is then applied much like paint to the surface of the concrete, which it penetrates according to dryness and porosity. One gallon has a covering capacity of about 200 square feet.

The naptha soon evaporates, leaving the paraffin in the holes. When applying the paraffin by this method, special care must be taken that there is good ventilation in the silo and that there are no lights or fires nearby. Naptha is very inflammable, and a serious explosion or fire may result from careless use.

Walls Must Be Warm

Paraffin may also be applied in melted form. It requires six and one-half pounds of paraffin to make one gallon of the hot paraffin solution. The work should be done on a warm day and the concrete must also be sufficiently warmed by artificial heat so that the paraffin may be thoroughly rubbed in. One gallon will cover about 250 square feet of surface. When this method is followed, a blow-torch should be used to warm the walls as the paraffin is being applied, and also to thin and spread the layer of paraffin. Two buckets of paraffin should be used, one to be heating while the other is being applied. The hot-paraffin treatment is one of the most successful for waterproofing surfaces exposed to weather, but it requires some experience to obtain successful results.

The amount of paraffin required to coat a silo may be determined in the following manner:

Multiply the height of the silo by its circumference (the circumference is the diameter multiplied by 3.1416), which gives the number of square feet of surface on the inside of the silo. If the cold method is to be used, divide the result just obtained by 200, which gives the number of gallons of the paraffin-naptha solution required. Multiply this result by the amount of paraffin and naptha in each gallon to obtain the total materials required.

Use of Hot Method

Where the hot method is used, divide the number of square feet of silo wall to be coated, by 250 to find the required number of gallons. Multiply this result by 6½ to obtain the number of pounds of paraffin required. For example, to find the paraffin required to coat a silo 14 feet in diameter and 30 feet high:

Diameter (14 feet)x3.1416 equals 43.98 feet, the circumference of the silo.

Height (30 feet)x circumference (43.98 feet) equals 1319.4 square feet, the wall area.

Area (1319.4 square feet) divided by 250 square feet equals 5.27, or number of gallons required.

Gallons required (5.27)x6½ equals 34.25, the number of pounds of paraffin required.

In both cases the cost may be estimated from the local price of paraffin and naptha. It should be remembered, however, that these figures will vary with local conditions.

Rules for Shipment of Live Stock to Fairs

By Wayne Dinsmore, Secretary, National Society of Record Associations.

Livestock men throughout California who contemplate exhibiting at fall fairs will be surprised and gratified to learn that the United States Railroad Administration has recently issued rules effective May 15, 1919, governing the handling of exhibits for expositions and fairs, whereby live stock chiefly valuable for breeding, racing, show purposes and other special uses will be granted what amounts to a half rate in making the fair circuit. This applies to horses, cattle, sheep and swine.

The rules stipulate that when exhibited at one exposition or fair, and then returned direct to point of origin, said live stock will be carried at full tariff rates going and free returning, if returned within 30 days after the close of the exposition or fair at which they are exhibited and the bill of lading therefor is accompanied by certificate of the secretary of such exposition that such articles were exhibited and have not changed ownership. This will apply where exhibitors make only one fair.

The rules further provide that when moving over a circuit of expositions or fairs, the articles will be way-billed at the regular tariff rate to each point of exhibition, and at the close of each fair, on presentation of a certificate from the secretary of the fair that such articles were exhibited thereat and that no change of ownership has occurred, the inbound charges will be reduced to one-half of the tariff rates, and when reshipped from the last point of exhibition to the original point of shipment via direct routes and the bill of lading is accompanied by similar certificate from the secretary of the last fair or exhibition, one-half of the tariff rates will be applied on this final shipment home. This permits all exhibitors of pure bred livestock to make a single fair or a circuit of fairs at one-half the cost heretofore encountered, for the majority of shippers, particularly horsemen, have had to pay full fare both going and returning in years gone by.

The "joker" in the rules is a stipulation that the animals will be carried at this reduced rating only when carriers' liability is limited to certain specified valuations, to-wit:

Each horse or pony (gelding mare or stallion), burro, donkey, mule, jack or jenny	$150.00
Each colt under one year old	75.00
Each ox, bull or steer	75.00
Each cow	50.00
Each calf, 6 months old or under	20.00
Each hog	15.00
Each sheep	5.00
Each goat	5.00

This will make it necessary for shippers to either run their own risk of loss or carry insurance on exhibition stock in some of the regular insurance companies, but it will be far cheaper to insure exhibition animals and thereby take advantage of the reduced rates than to pay full freight rate going and returning.

All shippers should proceed at once to see that their men in charge of exhibits have copies of the freight tariff giving full details, to-wit Boyd's No 145 showing rules governing the handling of exhibits for expositions and fairs, page 5. Any local railroad agent can obtain this for shippers.

Chief credit for obtaining these concessions must be given to the American Association of Fairs and Expositions which, with others interested has been at work to obtain this concession for more than three years.

past. The rulings apply to all railroads under federal control.

Note: Secretary Paine has been informed that no free rates on stock exhibited at the California State Fair will be granted exoept on the old Central Pacific lines.

ATTRACTIONS IN BERKSHIRE SALE

A feature of the Carruthers Berkshire sale to be held at Carruthers Farms, Live Oak, August 23, will be the sale of the reserve grand champion boar at the 1918 state fair, Live Oak Champion. This boar was sired by Ames Rival 70th, and his dam is Rival Lady 34th. This sale will also furnish an opportunity to secure daughters from what are believed to be the only two living daughters of the noted boar, Rival's Champion, whose blood has been such a factor in the history of the Berkshire breed. Other attractions in the sale will be the sows, Live Oak Belle, a daughter of Rival Lady 34th; the junior yearling sow, Live Oak Lady and Live Oak Belle 2d. The last sow will sell with a litter of six pigs. About 70 head of boars, sows and gilts will be included in the sale. Carruthers' Berkshires have always been held in high regard by Western breeders and this herd holds the record for public sale averages for the years 1916 and 1917.

Col. Ord L. Leachman will be the auctioneer.

COMBINATION HOLSTEIN SALE AT STOCKTON

A public sale offering of 65 highly bred registered Holsteins will be made at Stockton, on Thursday, September 18, by Henderson Company, Sacramento, and Bonita Stock Farm, Lodi. This will be the first public sale of registered Holsteins held at Stockton, which is the center of a very large dairy section, and quite a number of dairymen in the community have already signified their intention to acquire a few pure breds in this sale. A large number of the females in the sale will be heavy with calf to the noted King of the Black and Whites, who now has 39 A. R. O. daughters, the largest list of any bull on the Pacific Coast. Word has also just come from the east that one of his daughters has just made over 800 pounds butter from over 20,000 pounds milk in one year as a junior two year old. The sale is being managed by California Breeders' Sales and Pedigree Company, Sacramento.

PRESTON SCHOOL TO SELL AYRSHIRES

The good herd of registered Ayrshire cattle owned by Preston School of Industry, Ione, will be dispersed at public auction on Tuesday, September 16, at the State Fair Grounds, Sacramento. The herd consists of approximately 60 head of cows, heifers, and bulls of substantial breeding. The foundation of this herd was selected from some of the best known herds of the United States and Canada and the wide selection offered in this sale will permit those who wish to start new herds in California a rare opportunity to buy. The sale will be under the management of California Breeders' Sales and Pedigree Company, Sacramento.

IT WILL BE BIG

The state fair opens August 30. The mammoth $300,000 main state agricultural building, which is the pride of the fair association, is receiving its internal finishing.

When the lists closed August 1 the fair association had 1000 entries in the hog exhibit alone. This is accounted for by the activity of the boys clubs throughout the state. The boys have taken a most unexpected interest in pure bred hog raising. The incentive of competition and possibility of neighborhood prizes has advanced the hog industry more in the past two years than it advanced of its own account in the previous ten.

Under the supervision of the county agents and in some instances local enthusiasts, the boys have selected types of hogs which are best adapted to their locality. This insures a variety of types on exhibit, each hog being the product of careful breeding and the best of care. Several of the communities are sending boy representatives with the entries.

The unloading facilities have been enlarged under the supervision of Chas. W. Paine, secretary, and every effort is being made for proper handling of all live stock exhibits.

WILL GIVE AWAY GILT AT FRESNO

It is customary to attend auction sales with the idea of buying, but each one who attends the inaugural sale to be held at Fresno, August 20 by the Fresno County Poland-China Breeders' Association will have an opportunity to become the owner of one of the choice spring gilts without putting up any cash. As feature for the sale the management has decided to hold a drawing in which all may participate without cost, and the prize will be a registered gilt.

The sale, which will be held on the Fresno fair grounds, will consist of 30 bred sows, 17 bred gilts and eight open gilts. The association is anxious to make the first sale unusually attractive and the members have been very generous in permitting the management to select an offering that will attract the best buyers. The blood lines represented are the best available, and bred stuff sells to the service of such well known boars as Vaughn Jones, Hathers' Big Bob, California Jumbo Buster, and Blue Valley King.

PROFITS FROM YOUR SILO

– It has long since been proved that the silo is the one economical and profitable way to feed dairy cattle. The same amount of feed will go farther when turned into ensilage than if fed in the ordinary manner. Then, too, it is more appetizing and nutritious. All stock like it. It means healthy cows, more milk and greater profits *for you.*

Right now is the time when an *Ideal Green Feed Silo,* filled with rich, juicy, milk-producing silage, would make it unnecessary for you to feed high-priced grain, and yet would put more milk in the bucket every day. *Dairymen and farmers who have silos are securing 25 per cent greater production from their cows than those using dry feed.*

All agricultural authorities recommend the wood stave silo. It is inexpensive, easy to erect, needs no attention, is not affected by climatic changes, and will last a lifetime if built of the right wood.

The Ideal Green Feed Silo

is made from clear California Redwood, which long experience has shown to be the wood best adapted for silo construction.

The staves are tongued, grooved, bevelled and splined by specially built machinery. The doors are of the refrigerator type, leakproof, and cannot jam. They are continuous from top to bottom of silo.

Ideal Green Feed Silos are equipped with heavy, soft-steel hoops, made to withstand all conditions, and are strong enough to last for years. Hoops are provided with malleable iron lugs and long upset threads to permit easy adjustment. Write today for catalog and price list.

Own a Water System

No farm or dairy is compiete without a water tank. Plenty of water is just as essential as plenty of feed. A **Pacific Redwood Tank** will insure your water supply, add to your profits and increase the value of your property.

Pacific tanks are fitted with patent non-shrinking feature that absolutely prevents leakage. They are built right and possess the everlasting qualities of Redwood. You can easily own one. Send for booklet and price list.

PACIFIC TANK AND PIPE CO.
312 Market Street,
SAN FRANCISCO
907 Trust & Savings Bank Bldg.,
LOS ANGELES.

Send me descriptive matter and complete information. Silos — Tanks — Wood Pipe — (Check the one in which you are interested).

Name .....

Address .....

Cut Out This Coupon

Mail It Today

THE "W-W" (Hammer Principle)

ALL PURPOSE FEED GRINDER

The "W-W" can "beat it"
—You can't beat the "W-W"

"The proper place to mix feed for stock is outside not inside the stomach."

THE proper, practical, principle to employ is the hammer process.

W-W Grinders are constructed on an entirely original principle. Hay, grain—any kind of feed, is reduced to any degree of fineness by a beating process.

Nails, stones and other hard substances do not injure the mill.

The square faced hammer while pulverizing the feed, throws out the nails, bolts or other materials that might get into the mill in the feed

The W-W is an ALL PURPOSE Feed Grinder, practically indestructible, easy of operation and with greater capacities for smaller horse power than any machine offered.

It will successfully grind anything fed to stock in California. Is also used to pulverize fertilizers.

W-W mills are built in a wide range of sizes and types having capacities from 500 pounds to 8 tons per hour—a size for every feed. Write for a list of California and Arizona feeders who are using W-W Grinders, also book of letters of what they say.

It will pay for itself.

E. P. Bosbyshell Company

125-127-129 North Los Angeles St. Los Angeles

The Nevada Hereford Ranch

Offers a Choice Lot of

Breeding Cows and Heifers

Bred to Their Outstanding Herd Bulls

HARRIS STANDARD 2ND 425039, out of the same dam as the $35,000 Repeater's Model and sired by the famous bull Standard.

Debonair 64th 616840, is sired by the Geo. Chandler Debonair 26th and out of Beau Donald 33rd dam.

Beau Blanchard 76th 685487 is a straight Anxiety bred bull. A youngster we paid $10,000 for.

Nevada Lad 8th 697062 is sired by Harris Standard 2nd and is out of one of our exceptional breeding cows combining the blood lines of Beau Brummel and the imported Rufus.

This offering includes over 100 head of the choicest breeding stock. Some of the cows have calves at foot and are bred back again. They are just off the pasture and are in the best possible breeding condition.

All inquiries given prompt attention.

Jno. H. Cazier & Sons Co.

Wells, Nevada

Is a Calf Worth 23 Cents?

For 23 cents you can insure your calves against death from Blackleg by having them vaccinated with PURITY BLACKLEG AGGRESSIN. (The Kansas Germ Free Blackleg Vaccine.) One treatment immunizes for life and there is no danger in introducing Blackleg into healthy herds of cattle. We also manufacture and sell PURITY ANTI-HOG CHOLERA SERUM, PURITY MIXED VACCINE for swine, and PURITY HEMORRAGHIC SEPTICEMIA VACCINES for cattle and sheep. Stop your losses and increase your profits—it's good business. For service that counts, and does not end by selling, write, wire or phone

PURITY SERUM CO., J. L. Thatcher, Manager (Successor to Thatcher Serum Co.)
Riverside, Calif. Sacramento, Calif.

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency." Tells You Why.
Hauser Packing Company
Los Angeles, Cal.

Live Stock News Notes

SALE CALENDAR

Ayrshire Cattle

September 16, Preston School of Industry, Sacramento.

Holstein Cattle

September 18, Henderson Company and Bonita Stock Farm, Stockton.

Shorthorns

October 8, Agee Brothers, Brawley.
October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

August 20. Fresno County Poland-China Breeders' Association, Fresno.
September 17, John M. Bernstein and W. L. Haag & Son, Hanford.
September 19, San Joaquin County Poland-China Breeders' Association, Lodi.
September 30, Dimmick Brothers and DeRaad, Hanford.
October 4. Marsh & McCracken, Modesto.
October 7, Bassett, Ross and Crawshaw, Hanford.
October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.
October 18, Trewhitt, Vaughan and Nehls, Hanford.
October 21, Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine

August 23, W. M. Carruthers, Live Oak.

Wm. Briggs, who formerly maintained a large herd of Herefords in Texas, has purchased a ranch near Dixon and is planning to move his herd to this state. Briggs has joined the Pacific Coast Hereford Breeders' Association.

Verne Heath, formerly in charge of the Napa State Hospital herd of Holsteins, and who has been connected with a number of the leading dairy herds of the West, has taken over the management of the Bonita Farm near Lodi. The Bonita herd of Holsteins is regarded as one of the valuable collections of this state. Heath expects to put a large number of cows on test this fall.

W. F. Sandercock, who maintains a herd of Berkshires near Sacramento, calls attention to the fact that during the month of June California ranked second in the number of Berkshires transferred on the books of the American Berkshire Association. California breeders transferred 168 head while Pennsylvania breeders ranked first with 350 transfers, Massachusetts third with 153 and New York fourth with 149.

Henry Schumann-Heink, son of the famous singer, has purchased 80 acres of choice land in the Natomas district near Sacramento and expects to establish a top herd of pure bred Duroc-Jersey swine.

W. S. Guilford, one of the owners of the Butte City Ranch, Butte City, announces that the next sale will be held at the ranch April 17, 1920, at which time an offering will be made of Shorthorn cattle, Berkshire swine, Shropshire sheep and Shetland ponies.

Secretary Coombs of the Napa County Fair writes that the fair will be held at Napa October 2-5. Plans are being made to offer special inducements for a fine display of live stock.

At the McKee Brothers sale of Duroc-Jersey sows held at Versallles, Kentucky last month, 60 head averaged $369. Two gilts, one sired by Highland King Defender and one bred to that boar, sold for $1000 each. Highland King Defender is the sire of H. P. Slocum & Son's junior yearling herd boar, Uneeda McKee's Defender.

At the head of the Renwick herd of big type Poland-Chinas, Santa Barbara, is the 900 pound, 23 months' old boar El Profito, a line-bred Big Timm. This boar excels in both top and bottom lines, showing extreme spread of rib; his fine feeding quality is imparted to his get, and some of his best young daughters are to be kept as fixtures on the ranch. Three leading brood sows are Big Helen, daughter of Big Long Jumbo; Defender's Long Maid, a Pilot Defender sow; and Santa Barbara Beauty by Blue Valley Tecumseh. The last named sow farrowed 27 pigs within 13 months. A recent purchase is that of a Big Bob gilt bred to Buster's Model. She is from the noted Frazier herd of the Middle West. Miss Viola L. Renwick is owner of this fine herd and reports an excellent run of sales.

"Quality" Feeds

Nothing better. Made of the pure grains and meals. No filler, mill wastes or substitutes. Every sack tagged with guarantee of analysis and materials.

18-5 LAYING MASH, with Buttermilk. 18 per cent Protein, 5 per cent fat. High protein mash at a reasonable price

Quick-Fat

Complete Hog Feed
with Buttermilk.

It makes 'em grow fast.

At your dealers or direct from the factory.

I. S. Chapman & Co., Inc.
Chapman Bldg., San Bernardino, Calif.

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A Shoe Boil, Capped Hock or Bursitis
FOR
ABSORBINE
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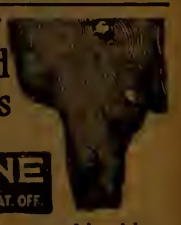

will reduce them and leave no blemishes. Stops lameness promptly. **Does not blister** or remove the hair, and horse can be worked. $2.50 a bottle delivered. Book 6 R free.

ABSORBINE, JR., for mankind, the antiseptic liniment for Boils, Bruises, Sores, Swellings, Varicose Veins. Allays Pain and Inflammation. Price $1.25 a bottle at druggists or delivered. Will tell you more if you write.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Grass Shorthorn Steers Weighed 1515 Pounds

One hundred and fifty Shorthorn steers, never having tasted grain, grown and marketed by the Pacheco Cattle Co., Hollister, Calif., had an average weight of 1515 pounds as three-year-olds.

That's where the Shorthorn has an advantage.

They were pronounced by many experienced judges as the best and heaviest grass-fattened steers ever marketed in the West.

It pays to grow Shorthorn beef.

American Shorthorn Breeders' Association
13 Dexter Park Ave., Chicago, Ill.
Ask for Literature.

Brighton Farm Herds

Registered Shorthorns
and
Berkshires---Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

The Leading
Live Stock
Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

DIAMOND G HEREFORDS

are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 4th, one of the best bulls in the West. Correspondence invited and visitors welcome.

H. H. Gable Esparto, Calif.

Cattle Ranges

ARE YOU INTERESTED?

In knowing facts about Central British Columbia Cattle Ranges and mixed farming. Improved and non improved, large and small? Write your requirements, resources

J. H. BROWNLEE, Canadian Land Surveyor.
Peoples Savings Bank Bldg.
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(STANDARDIZED)

WILL

PROTECT YOUR PROFITS

BY KEEPING

All Livestock and Poultry Healthy

Effective. Uniform. Economical.

Kills Lice, Mites and Fleas.
For Scratches, Wounds, Scab, and Common Skin Troubles.

PREVENTS HOG CHOLERA

Experiments on live hogs prove that a 2 1/2 per cent dilution of Kreso Dip No. 1 will kill virulent hog-cholera virus in 5 minutes by contact.

FREE BOOKLETS.

We will send you a booklet on the treatment of mange, eczema or pitch mange, arthritis, sore mouth, etc.

We will send you a booklet on how to build a hog wallow, which will keep hogs clean and healthy.

We will send you a booklet on how to keep your hogs free from insect parasites and disease.

WRITE FOR THEM.

Animal Industry Department of

PARKE, DAVIS & CO.

DETROIT, MICH.

SANTA ANITA RANCHO

Anoakia Breeding Farm

Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five galted saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita Calif.

W. H. Taylor, Supt.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified

El Monte, Cal.

$150,000 for Prizes

Publicity and Extension Service

Breeders of Holsteins unanimously voted to quadruple the fees for recording transfers of their cattle sold, and spend the income therefrom to place the merits of this greatest of dairy breeds before the public. If interested in

HOLSTEIN CATTLE

send for our booklets and inform yourself on how to make money in breeding dairy cattle.

The Holstein-Friesian Association of America, Box 120, Brattleboro, Vt.

Some of the finest

GUERNSEYS

In the West are at

Hollow-Hill Farm

Colton, Cal.

Only Bull Calves For Sale

Indio, Riverside County, ginned its first bale of cotton last week.

H. J. Show of Santa Barbara, purchased the first prize Ayrshire cow, Muna Rosewood, from the noted McFarland herd at the Liberty Fair. While at the fair this cow dropped a fine bull calf, Liberty Boy, sired by Robin Hood 32. This young bull is now coming of serviceable age. He fills the eye to perfection and may be seen at the home ranch.

E. E. Greenough of Merced reports sale to J. J. McMasters of Merced of the Jersey bull Brownie's Marquis which is a very promising youngster. Mr. Greenough has also purchased two granddaughters of the ex-world's record cow, Goldie's Nehalem Beauty and also the young show bull Fussy Fern's Noble 9th at the recent Reid's sale at Sacramento. These will be shown at the state fair.

Alex D. McCarty, owner of the Riverina herd of Poland-Chinas, has recently sold a boar to Samuel Smith of Hollister and one to Tallman & Hibbard of Oakdale. Both boars are by Kansas King. The Riverina herd has been strengthened by the purchase of a very high class sow from Williams Bros., Villisca, Iowa. She is sired by Big Fred, a son of Big Bob, and will be bred to King Jones Over, the boar that is making such favorable impression on all who see him. The Riverina herd will be seen at the fall fairs and advance reports suggest that it will receive its share of the prize money.

O. M. Plummer, general manager of the Pacific International Live Stock Exposition, Portland, writes that the new home of the show is fast nearing completion and will be ready 30 days before the show. It is expected that a number of the leading herds of this state will invade the Northwest after a share of the $65,000 prize money offered by the above show. The show will be held November 17-22.

The San Joaquin County Poland-China Breeders' Association will hold their first annual sale at Lodi instead of Stockton as announced in our last issue. The date claimed for the event is September 19, and it is planned to hold a second sale in February, probably the twentieth.

R. K. Walker of the Winsor Ranch, Bonita, writes that he has added the three-year-old boar, Orion's Giant, to their herd. This boar is one of the largest, if not the largest Duroc boar in the West. He was sired by Orion Cherry King, Jr., grand champion boar of 1916. He measures 82 inches from between the eyes to the root of tail, stands 40 inches and weighs 960 pounds. Mr. Walker also purchased a number of very high class sows, representing such desirable and popular bloodlines as Great Orion Sensation, Great Sensation, Pathfinder, Great Pathfinder, and Top Sensation. One of the sows cost $800 and the general average was $500. The Winsor herd will be seen at the fall fairs.

CALIFORNIA HAMPSHIRE BREEDERS ORGANIZE

At a meeting of Hampshire swine breeders held at Santa Barbara the morning of the Underhill sale the California Hampshire Swine Breeders' Association was formed. The new association starts with an initial membership of about 30 of the most prominent breeders. F. B. Gordon of Los Angeles was elected president; C. J. Gilbert, Lancaster, secretary; Francis T. Underhill, Santa Barbara, first vice-president; L. E. Denker, Saugus, second vice-president; H. H. Braly, Newbury Park, third vice-president; W. S. Morton, fourth vice-president, and F. J. Costello, fifth vice-president. The annual dues were fixed at $5.00 per year. The purpose of the new organization is to promote the interest of the breed in this state.

List of initial members follows:

E. C. Stone, Peoria, Illinois; R. C. Polard, Nehawka, Nebraska; F. V. Gordon, Los Angeles; Claire Rhodes, Pine Village, Indiana; King C. Gillette, Los Angeles; L. E. Lounsberg, Los Angeles; H. L. Langdon, Perris; F. A. Langdon, Perris; Fairbanks Ranch, Redlands; W. S. Morton, Gardena; H. C. Hayes, Los Angeles; C. E. Shattuck, Los Angeles; Ord L. Leachman, Sacramento; Tom M. Bodger, Gardena; Conejo Ranch, Newbury Park; H. H. Braly, Newbury Park; Francis T. Underhill, Santa Barbara; L. A. Denker, Saugus; F. J. Costello, San Francisco; C. H. Kellog, Saugus; Economy Stock Powders, San Francisco; Thos. T. Dinsmore, Santa Barbara; Dr. E. Avery Newton, Los Angeles; T. J. Hilte, Los Angeles; C. R. Thomas, Los Angeles; R. H. Whitten, San Francisco; Gordon H. True, San Francisco; J. I. Thompson, Davis; H. S. Hoard, Los Angeles; Rural Press, San Francisco; H. F. Sheldon, Santa Barbara; Jas. Marwick, Santa Barbara.

The first meeting of the association will be during the Los Angeles Live Stock Show, Tuesday, October 21.

A wide range of sizes to select from.

The ACME Cutter

The Combined Silo Filler, Hay Chopper and Alfalfa Meal Machine

VIBRATION IS REDUCED TO THE MINIMUM in the Acme by the 3-bearing cutter shaft and the rigid steel frame construction—a design found in no other machine.

Power requirements are proportionately reduced. This machine rightfully earns its reputation as the "DURABLE LIGHT-RUNNING ACME."

The spiral Cutting Knives produce that short, clean cut silage of uniform lengths so necessary for proper packing and best results. Don't buy any cutter until you fully investigate the ACME.

Write us, giving height of your silo, the horsepower available, and tons of hay fed per year. We will send our cutter catalog and quote you price and terms on the right size Acme.

De Laval Dairy Supply Co.

61 Beale St., San Francisco

Note:—The Acme Cutter will be on exhibition in the De Laval Booth at the State Fair at Sacramento

FREE

$3000 BOOK OF BARN PLANS

Going to build or remodel a barn? Then send for this book. 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Cost over $3,000 to compile. Yours free—for the asking.

AND WE WILL ALSO SEND YOU THE COMPLETE LOUDEN CATALOG of modern sanitary barn equipment. Send for these two valuable books today.

LOUDEN BALANCE GRAPPLE HAY FORK

Lifts an enormous load. Binds it tight. Drops it clean. Spreads it well in the mow. Leaves no litterings to be cleaned up with a pitchfork. Three or four fork-fulls clear the rack. PERFECTLY BALANCED, slender but strong, will not bend or break. A money-saver in haying time.

AMERICAN PUMP CO.

73 Fremont St. Dept. B, 420 East Third St.
SAN FRANCISCO LOS ANGELES

COMBINATION SALE

65 Registered Holstein Cows, Heifers and Bulls

CONSIGNED BY

Henderson Company, Sacramento, Cal.

Bonita Stock Farm, Lodi, Cal.

To be sold at Public Auction at

Stockton, California

Thursday, September 18, 1919

Management

California Breeders Sales and Pedigree Co.

Sacramento, Cal.

Last Call

Mark the Date

Fresno, Calif.

Wednesday, Aug. 20th

PUBLIC SALE

OF

POLAND-CHINAS

By the Fresno County Poland-China Breeders' Association

30 Bred Sows 17 Bred Gilts

8 Open Gilts

All bred for early fall farrow

As an additional feature of our sale we will give away, absolutely free, a fine spring gilt

Sale will be held on the Fresno Fair Ground, 12:30 P.M.

Lunch 11:30 A.M

Alfred Buckland, President Walter C. Ficklin, Secretary

Col. Geo. W. Bell, Auctioneer

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

It's a Source of Satisfaction to Know Where to Find the Right Kind of Hogs When You Want to Buy

King Jones Over

A son of the great King Jones. Dam by Long King out of a Big Bob sow. He possesses all the qualities of the modern Poland-China, weighs 600 pounds at 14 months, stretchy, deep, well hammed and right up on his toes.

He leads the best herd of strictly big type sows in California.

Some extra good fall boars for sale now. Cholera immune.

McCarty & Starkweather

P.O. Box 2250, San Francisco

Ranch, Paradise Road, Modesto

Have You Heard of the Great GOLDEN STATE KING?

Sire of size and quality Poland-Chinas. The high backed, deep sided, good footed, straight legged and right up on their toes, two good ends, good color and fine coated, long and tall, the kind that grow large, easy feeding and prolific, the fashionable kind.

Every one who sees them says they are great.

See them at the fair and you will say the same.

Some of them will sell at the breeders sale at Lodi, September 19, 1919.

W. A. Young Lodi, Calif.

Wakeen Herd

The home of the Grand Champion Poland-China boar of California. Young stock by King's Big Bone Leader is limited—get your order in early.

Les McCracken Ripon, Calif.

Bred Sow Sale in October

Butter and Cheese Scoring Contest

By S. L. Denning

The second scoring of the 1919 California Educational Butter and Cheese Scoring Contest conducted by the Dairy Industry Division, University Farm, was held at the Lucerne Cream and Butter Company at Hanford on August 2. In connection with the scoring there was held a buttermakers competitive judging contest and a creamerymen's meeting.

Thirteen samples of butter and two cheese were entered for scoring. T. J. Harris of San Francisco, C. L. Roadhouse and S. L. Denning of Davis were the judges. H. Beck of the Danish Creamery, Fresno, received 94, the highest commercial score. B. A. Walters of the Hooper Creamery Company, San Francisco, received 96¾, the highest score, when the commercial and composition scores were averaged. H. C. Watson of the Watson Cheese Factory, McArthur, received 92, the highest score on Cheddar cheese.

J. A. Bauer of the Lucerne Cream and Butter Company, Hanford, won first place in the competitive butter judging and will be awarded a butter trier as a prize. E. B. Fulghum of California Central Creameries Company of Lemoore, was second, and F. A. Hayes of the Los Angeles Creamery Company of Hanford, third.

The butter entries which had commercial score of 90 or above are:

H. Beck, Danish Creamery, 94; B. A. Walters, Hooper Creamery Company, 93½; N. Nyborg, Milk Producers Association of Central California, 93; A. Wirz, Hollister, 93; J. A. Bauer, Lucerne Cream & Butter Company 92½; C. A. Johnson, Bodega, 92½; Fred Deter, Montague, 92; V. Simonsen, San Joaquin Valley Milk Producers Association, 92; W. E. Eaton, University Farm, 91½; J. A. Potts, Orland Cheese & Butter Company, 91; H. J. Wolf, Crystal Cream & Butter Company, 91; C. A. Holm, Moss Rose, 91; F. L. Bellows, Mutual Creamery Company, 90½.

On Cheddar cheese H. C. Watson, Watson Cheese Factory, had commercial score of 92; John Reber, Watson Cheese Factory, 91.

Butter of Good Quality

The entries of butter were of good quality. The average score of the 13 samples was 92.11 and 61.5 per cent scored 92 or above. No entries scored below 90. Most of tho entries had a clean, fresh flavor but some showed that old cream had been used and a few contained a neutralizer flavor. It seems to be a common practice with butter makers to neutralize to a low degree of acidity. Much harm can be done by neutralizing too far. If it is advisable to reduce the acidity of the cream before pasteurizing it should be done with considerable care and accuracy. It is a simple operation for the buttermaker to figure the amount of cream which he has in a vat and then make an acid test to determine the acidity. After knowing these two values he can then find the amount of alkali to add. He should prepare a table to show the amount of alkali necessary for certain weights of cream and acidities. Without the use of an acid test the process of standarizing the amount of acid is nothing more or less than guess work and uniform results cannot be expected.

The bodies of the entries were very good. A short time ago the California butter which had been shipped to the New York market was unfavorably criticized for being short grained and mealy. Few entries showed this condition. Without doubt the California buttermaker can eliminate this fault in his butter and satisfy the Eastern purchasers.

Only a small number of cheese were entered. This can probably be accounted for by the fact that only a small number of cheese factories are now operating. With an increase in price the output of cheese should be increased.

63 Hampshires Average $110

The public sale of 65 head of pure bred Hampshire sows from the Francis T. Underhill herd at Santa Barbara, California, on August 6, brought together a fairly representative crowd of swine growers interested in that particular breed. A scattering representation was even to be noted from distant parts of the state, and breeders of Poland-Chinas and Durocs were in evidence in the big gathering at the ring side.

Preceding the regular order of the day was the big noonday ox-roast. The tables were spread under the big trees that mark the ranch, and the score or more of ladies who flitted here and there added spice to the splendid service that marked every appointment of the noon hour.

This initial sale in California Hampshire swine circles is to be put down as an unqualified success. The prices did not run high, but every animal catalogued found a buyer at a fair price. Secretary Stone of the American Hampshire Swine Record Association, who conducted the sale, found much satisfaction in the distribution of this fine offering over so large a territory, and Mr. Underhill realized that he was sowing seed that should make for rich harvests in tho years to come.

Among those present were Professor Gordon H. True, manager of the San Francisco Livestock Show, and Charles R. Thomas, manager of the Los Angeles Live Stock Show. Both gave short talks at the opening of the sale, in which were set forth the fine prospects for full lines of exhibits at the coming fairs. Professor J. I. Thompson of the University Farm also spoke. E. C. Stone, who operates a sort of clearing house for the Hampshire breed of swine, paved the way for tho opening of the sale through a short but effective speech showing up the full line of virtues of the Hampshire hog as an economic pork producer.

Col. Ord L. Leachman of Sacramento cried the sale, making an average of $110.70 on the 63 head sold, with $300 as the top figure of the sale Following is a detailed list of the buyers and the prices paid:

Walter H. Dupee, Santee, $200.
C. G. Meiners, Ojal, $135.
H. F. Sheldon, Serena, $130.
C. E. Shattuck, Los Angeles $150
W. H. Dupee, $250.
H. F. Sheldon, $85.
H. F. Sheldon, $155.
Peter Cooper, Rio Vista, $130.
University Farm, Davis, $165.
C. E. Shattuck, $135.
C. G. Meiners, $130.
Neilson Brothers, Solvang, $105.
James Marwick, Santa Barbara, $150
W. H. Dupee, $185.
V. R. Smith, Lindsay, $300.
A. R. Glaisyer, Kalaheo, Hawaii, $1[illegible]
J. M. Christen, Martinez, $110.
Peter Cooper, $115.
A. R. Glaisyer, $100.
Peter Cooper, $100.
Gwyn Thermond, Saticoy $130.
A. L. O'Banion, Santa Barbara, $9[illegible]
John Troup, Lompoc, $75.
C. H. Kellogg, Saugus, $80.
W. H. Dupee, $125.
H. F. Sheldon, $110.
L. Farnam, Ojal, $120.
W. H. Dupee, Santee, $125.
C. E. Shattuck, $125.
King C. Gillette, Los Angeles, $70.
A. L. O'Banion, $80.
L. Farnam, $85.
Miguel Erro, Santa Barbara, $95.
Mrs. Nettie Hollister, Herndon, $9[illegible]
John Troup, $85.
F. V. Gordon, Perris, $85.
Tom M. Bodger, Gardena, $130
John Troup, $75.
H. F. Sheldon, $75.
E. Avery Newton, Lankershim, $10[illegible]
L. A. Denker, Saugus, $105.
E. Avery Newton, $140.
John Troup, $85.
C. G. Meiners, $100.
C. G. Meiners, $100.
Peter Cooper, $115.
James Marwick, $110.
Dr. E. Avery Newton, $120.
H. F. Sheldon, $85.
Neilsen Brothers, $90.
Conejo Ranch, Newbury Park, $90
Tom M. Bodger, $100.
A. R. Glaisyer, $85.
John Troup, $60.
Neilsen Brothers, $67.50.
L. A. Denker, $75.
Gwyn Thurmond, $95.
F. J. Costello, Los Altos, $70.
J. L. Wilson, Jr., Monrovia, $72.50
J. L. Wilson, Jr., $65.
Miguel Erro, Santa Barbara, $8[illegible]
John Troup, $70.
T. W. Andrews, Los Angeles, $7[illegible]

Big Live Stock Shows

By Frank D. Tomson

The year 1919 marks the completion of plans of a broad nature in the organization of big live stock shows for the Pacific Coast country. No more constructive plans were ever matured than those which have resulted in the permanent organization of these great expositions, these educational institutions which have proven wherever they exist a most effective means of developing better methods in agriculture and more general prosperity as a direct result.

Five of these shows have been arranged in a convenient circuit beginning with the Live Stock Show at Los Angeles, October 18-26, and the California International Live Stock Show at San Francisco, November 1-8, followed by the Western Royal Show at Spokane, Washington, November 3-7, then the Northwest Live Stock Show at Lewiston, Idaho, November 9-14 and finally the Pacific International, Portland, Oregon, November 17-22.

The working out of this circuit and the placing of these shows on a permanent basis has required a vast financial investment and almost unlimited effort on the part of those who conceived the plan and foresaw its possibilities. The establishing of these shows will, as an inevitable result, compel higher live stock standards which are invariably the forerunner of stabilized agriculture and prosperity. The coming of pure-bred sires into this Western country has been the chief factor thus far in bringing about better methods of farming and ranching. But the work of improvement has barely begun. In the matter of a prosperous agriculture the West is today at the threshold merely, with a prospect for development and financial returns so extensive as to exceed all anticipations.

These great shows are but indicators of this development and they will serve as the most concrete evidence of progress. The success of these shows will have a definite relation to all lines of investment in whatever channel on the Pacific Slope. Since the coming of the railroads into the West no more important movement was ever conceived in the interests of Western progress than these live stock shows placed, as they now are, on a permanent foundation.

As a suggestion of the encouragement which these shows will offer there have been provided for prizes in the Shorthorn cattle classes alone approximately $20,000 for entries in the pure bred casses, both beef and milk, and in the steer classes, both pure breds and grades. This generous amount reflects the sentiment of those identified with the breed.

These shows should call forth exhibits from every section of the West. The prizes have been made sufficiently numerous to encourage entries from small herds and large herds alike. Every western breeder owes it to these shows and the efforts which their organizers have made to lend his support by exhibiting a few animals, for the exhibitor himself is the chief beneficiary. No better means has ever been provided for encouraging trade. In the judgment of those who have studied the live stock industry from all angles and for many years the placing of these shows on a permanent basis assures an increased activity in the favored West in improved live stock channels the like of which it has never heretofore experienced.

Horses Haul Cheaply

"It costs Wilson & Company approximately twice as much per ton to make deliveries in the Chicago territory with trucks as with horse-drawn vehicles," is the statement in the Breeders Gazette of W. J. Suor, superintendent of transportation for Wilson & Company of Chicago. "Figures taken from the books of Wilson & Company show that it cost us in the month of March 25 cents per hundredweight to deliver our products by use of two-ton trucks, 13.3 cents per hundredweight by use of one-horse wagons, 7.9 cents per hundredweight by use of two-horse wagons, and 5.9 cents per hundredweight by use of four-horse wagons."

"The trucks referred to are of two-ton capacity. They are geared at 30 miles an hour. They cost $2200 each. Sixteen of them are used to deliver packing-house products in the Chicago suburbs bounded by Waukegan, West Chicago and Gary. One extra truck is used for replacement purposes. It replaces a different truck every day, so that one truck is overhauled every 16 days. This system is found to lengthen the truck's life by two years. The cost of delivery will be five cents per hundredweight higher this year than a year ago, because the trucks are a year older and require more repairs, tires, and so on.

"The Wilson delivery teams weigh from 3200 to 3500 pounds. They journey to the loop with more than two tons to the load. They may be loaded up to four and one-half tons, or more than twice as much as the trucks will carry. An overloaded truck soon goes to pieces; an overloaded team will struggle along for a while and the owner is out only an extra handful of oats. A single horse will haul easily 4000 pounds, which is the capacity load for one of the trucks in question. It costs us about $19 25 per head per month to feed our horses. They get 19 pounds of best timothy hay, costing $31 per ton, per day, and 17½ pounds of best white oats, costing 70 cents per bushel.

"I am not interested in the horse business. All I am interested in is efficient delivery. The figures which I present tell their own story. We could no more do without the truck to deliver our products within a radius of 30 miles than we could do without teams to do our work close in, within a radius of ten miles of our plant. And the figures will show at what comparisons in cost of delivery The horse deserves a square deal, and is going to get it eventually."—Idaho News Letter.

EXPERIMENTS SHOW CASH VALUE OF CORN SILAGE

From experiments with steers conducted by G. E. Morton and T. E. Leiper of the Colorado experiment station, the following table was made and gives the value of corn silage per ton when fed with barley and alfalfa, as indicated by these experiments, when barley and alfalfa cost varying amounts.

When Alfalfa costs per ton	When Barley costs per cwt. $1.75	$2.75	$3.25
	Value of Corn Silage per ton		
$10.00	$5.21	$6.49	$7.13
11.00	5.51	6.79	7.43
12.00	5.80	7.08	7.72
13.00	6.10	7.38	8.02
14.00	6.40	7.68	8.32
15.00	6.70	7.98	8.62
16.00	6.99	8.27	8.91
17.00	7.29	8.57	9.21
18.00	7.59	8.87	9.51
19.00	7.88	9.16	9.80
20.00	8.18	9.46	10.10

For example, when alfalfa is selling at $20.00 per ton and barley at $2.75 then corn silage is worth approximately $9.46 per ton.

TAHOE FOREST AREA REDUCED

Approximately 49,239 acres has been eliminated from the Tahoe national forest in California and Nevada. The eliminated lands have no value for national forest purposes. More than 15,000 acres eliminated are located on the steep canyon slope of the North Fork of the American River. Another large tract of approximately 10,000 acres lies along both sides of Yuba River, and much of the land is on the steep canyon walls of the river. About two-thirds of this tract has passed into private ownership under the mining laws. The remainder of the lands excluded are in smaller scattered tracts.

Pork Production

By actual test pure Hawaiian Cane

MOLASSES

will increase pork production approximately five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price. Do you know of any other feed that will do this at any price?
Why not get all the profits out of your hogs?
Write us for full particulars.

W. H. YOUNG COMPANY
58 Sutter Street San Francisco

WHIZ---BANG

A real big type Poland-China boar by Forrest View Bob by Caldwell's Big Bob. Bred big. Is big. Two litter mates now for sale at a reasonable price. His pigs a little later. Write for price and description.

J. H. Cook Paradise, Calif.

Long Jumbo and Yate's Big Orphan

have sired some wonderfully fine pigs. Big type Poland-Chinas by these two boars for sale at a reasonable price. Write immediately for full description. Fully guaranteed to satisfy.

R. J. Yates, Orland, Cal.

Carruther's Shorthorns and Berkshires

My July Shorthorn sale established the Western record. I can offer choice breeding stock at all times. No better blood.—No better individuality.

Berkshire Sale August 23

On the above date I will sell at public auction, a superior collection of boars, sows and gilts. Write for catalog.

W. M. Carruthers
Live Oak, Calif.

Duroc-Jersey Hogs

250—Spring Pigs—250

That have been mated with extreme care and properly raised and fed. The big, tall, rangy, high-backed, big-framed kind that can carry an awful load of pork and walk off with it. We have on our Orland ranch, the sires and dams of the $1100 sow and $1000 boar recently sold at San Jose Sale. WHEN YOU NEED GOOD DUROCS—WRITE US.

F. D. Burr Co.
235 Montgomery St. San Francisco

All Good---We Sell

No animal leaves our ranch for breeding purposes unless it is of the correct Duroc-Jersey type and breeding.
That's one reason, and a mighty good reason, for our large business. Write me just what you want and I will send you full description and price them reasonable.

Allen Thompson Tulare, Calif.

Greenwood DurocS

It is possible to secure as good but none better.—We not only breed them right but grow them properly. It will be well worth while to write Greenwood Farm for the kind of Duroc-Jerseys you want.

H. C. Witherow, Mgr. Live Oaks, Sutter Co., Calif.

DUROC JERSEYS
IMMEDIATE SHIPMENT
YOUNG BOARS, WEANLINGS
BRED OR UNBRED GILTS
WRITE FOR PRICES
GARDINER RANCH
R D. No. 4, BOX 735
SACRAMENTO, CALIF

Auction Sale of Duroc-Jerseys and Sheep

Tuesday, August 19th, 1:00 o'clock sharp. Place, Garden City Sanitarium, San Jose, Calif. Bred and open gilts, bred sows, weanling pigs; 27 head. Pedigrees at sale. Some fine stuff here bred to $1500 O. C. K. boar. Eight head pedigreed Shropshire sheep, 8 lambs, 1 imported Buttar ewe and fine lamb. All young stock. Come and take them at your own price.

Jersey Queen Farm, by L. J. Belknap, M.D

Duroc-Jersey Pigs

from both
Eastern and Western Registered Sows of Best Blood Lines. Sired by LEADING BOARS
Ranch: Van Nuys, Calif.
W. Chas. Swett, 7256 Franklin Ave., Hollywood, Calif. Phone Holly 4115

Rancho De Los Cuevitas

Breeders of D. S. Polled and Horned Herefords. Bulls, one to two years old; heifers, one to three years old; one to a carload for sale.
Herd headed by Variation 17th 447159 (3238), a Mossom Boyd bull that weighs more than 2200 pounds.
JOHN B. BOWMAN, McINTOSH, N. M.

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FARM LANDS FOR SALE

FARM LANDS FOR SALE
Executrix Sale or Real Property—Lands must be sold to close estate. These lands include 500 acres of rich bottom level Cultivated Land in one tract in Long Valley, Mendocino County, California, the State Highway passing through this tract. Also 8000 acres of open grazing land, within a hog-tight fence of 26 miles; this land is well watered, with a live stream and numerous springs. The timber consists of fir, pine, oak and tan oak. The Northwestern Pacific Railroad passes through the ranch and the station of Farley, Mendocino County, California, is on the ranch; also includes best improved water front property in Eureka, California. Executrix will meet interested parties or will send full information on request. Address: G. A. K. Company, 918 Chronicle Building, San Francisco, California.

176-ACRE MONEY MAKER WITH 10 COWS, 3 HORSES AND
Manure spreader, reaper, drill, potato digger, walking, sulky plows, long list implements, wagons, harness, 1¼ miles R. R. town. Heavy crop loam tillage, 30-cow wire-fenced pasture, wood, fruit; 10-room house, 110-ft. stock barn, horse barn, corn houses, etc. Aged owner to retire at once sells all, $5500, easy terms. Details page 35 Catalog Bargains 19 States, copy free, STROUT FARM AGENCY, 831 A. G., New York Life Bldg., Kansas City.

For Sale — High Class Bearing Orange Grove of Eight Acres, fronting on boulevard—El Camino Real—just outside city of Anaheim; the Valencia section. In fine condition, and pays 20 per cent. Price $24,000 including balance of unpicked crop, about three-fifths. I have also a 3-year-old grove, ten acres, $10,000. H. M. King, Anaheim, California.

For Sale—Fruit and Poultrymen—It will be to your advantage to write today for information about the Paradise district—deep rich soil—ideal mountain climate. (Above frost and fog.) Electricity and an abundance of pure water.
Choice tracts $100 per acre.
PARADISE LUMBER CO.
Paradise, Butte County, California.

Mountain Ranch—334 Acres, 90 acres under cultivation, 30 acres bearing orchard, balance in timber, oak and pine. Free water, deep, rich soil, eight-room house, 100 tons hay, barn and out buildings. Will subdivide. Price $7500. Terms. Address, Paradise Ranchita, P. O. Box 123, Paradise, Butte County, California.

IMPERIAL VALLEY RANCHES
Bought — Sold — Exchanged
Money to Loan—Choice 8 per cent First Mortgages for sale. Information cheerfully given.
Western Pacific Securities Co.,
Barbara Worth Hotel Building
El Centro, California.

For Sale — Finest Improved Ranch in Ventura County. Owner ill. Offered at $5000 under bank valuation $30,000. ½ cash. No trades; 60 acres, walnuts, oranges, lemons, etc. No frost. Buildings and pumping plant. Very fertile soil. Write Mrs. Bither, Fillmore, California.

10-Acre Ranch, 4½ miles from Santa Rosa; 5 a. hay, 5 a. yr. old French prune trees; 4-room house, windmill and tank; hogs, chickens, plenty wood, farming implements; price $4,500, cash or terms. LENORA SENNA, Route 2, Box 137-A, Santa Rosa, California.

For Sale—Excellent young apple orchard in bearing and alfalfa. Fine proposition, unlimited water supply. If interested write for particulars. Box 215, Victorville, California.

40 Acres, Good Soil; fine for berries, vegetables, poultry and cows; plenty of water and wood. H. Koenig, Fort Bragg, California.

GOVERNMENT LAND

300 Million Acres of "Free" land in U. S. "The New Homeseeker" a 104 page book WITH MAPS and ILLUSTRATIONS, showing millions of acres of vacant public homesteads, timber, mines or grazing lands. Founded on historical facts. DOES NOT MISLEAD. Read warnings "official," eliminates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico, Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico. Describes water, soil and climatic conditions, all the principal U. S. land laws. A marvelous publication, just off the press. Mailed anywhere, $2. Address "THE HOMESEEKER," Dpt. M, 3rd floor Grant Bldg., Los Angeles, California.

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IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.
The Yellow Front. Established 1892
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WEBSTER, WEBSTER & BLUETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

MULES

For Sale at a Greatly Reduced Price—I am closing out my breeding business and will sell the following almost at your own price—must be sold soon. One registered Jack, a good one. Sixteen good brood mares, all bred. Eight head of two year old colts. Seven suckling mules. All well bred animals. Chas. Hubbard, Box 96, Riverdale, California.

MACHINERY

FOR SALE—REBUILT WINDMILLS, tanks, pumps, ranch tools, irrigating pipe. Pipe Fittings, Sundries.
WHY BUY NEW? MATERIAL GUARANTEED
Do as much work as new at half price. Windmills, 8, 10, 12, 16 ft. sizes.
TANKS: New and used redwood and galv. tanks, most all sizes. Specially fine 1000 gal. OAK tanks $27.50; 1600 gal. $35.50; 5300 gal. redwood $48.50; 6300 gal. $57.50. Be quick, these won't last long.
PUMPS: Horizontal centrifugal pumps, plunger pumps, rods, brass cylinders, valves, fittings to suit.
IRRIGATING PIPE: 1500 ft. 9-in., 38½c; 1000 ft. 10 in. 42c; several other sizes coming in first of week.
RANCH TOOLS: Plows, harrows, discs, scrapers, planters, seeders, beet and grain drills, bean cultivators, bean spray outfit, $35; cider press $17.50; potato digger, potato planter, bone grinders, cable, sundries.
BRASS CYLINDERS: Tees, ells, valves, gates.
6 H. P. LAMBERT GAS ENGINE, $105.
MANY other bargains. TRADE US LIBERTY BONDS ON MACHINERY. Have you anything for sale, if so write or phone us. Material guaranteed as represented or money refunded.
DEMMITT CO., Upstairs, 120 N. Main. Yards 816 Yale. Phone 15191; Bdwy. 1984. Los Angeles.

Corn Harvester — One man, one horse one-row, self-gathering. Equal to a corn binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kansas.

For Sale—Krogh and Byron Jackson vertical centrifugal No. 6 pumps, 8 ft. double disc, 2 and 3 bottom power lift Moline plow, Cleveland tractor. Prices right. Write for particulars. Box 215, Victorville, California.

For Sale at Prices as Low as Concrete 10,000 ft. No. 14 gauge riveted pipe suitable for well casing and irrigation systems; 10-in., 40c; 11-in., 35c; 12-in., 45c. L. B. Vollmer, Monrovia, California.

For Sale—Aspinwall Potato Planter and Hoover Digger, nearly new, $200.00. Drawer K, Upland, California.

CATTLE

MERRITT BOWERS COMPANY
Have just purchased
160 head of registered Durham cattle
27 are of the Durham milking strain
60 head of registered Hereford bulls.
We also have on hand
Registered Duroc-Jersey hogs
30 stallions and jacks
Mammoth jacks — Percherons
Shires — Belgians
Coach — Saddle stallions
600 head of choice mules and work horses.
For information write, wire, or phone our breeding and sales barns
Tagus Ranch, Tulare, Cal.
Every animal guaranteed.

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

For Sale—Fine young Ayrshire bull, Liberty Boy, dropped at Liberty Fair; sire Robin Hood 32, dam Muna Rosewood, 1st prize cow at Liberty Fair. H. J. Show, Route 1, Santa Barbara, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Registered Holstein Heifers, 2 milking, 2 fresh September 1st; 2 calves, one 2 yr. bull, choice breeding. D. C. Stanion, Kerman, California.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

RABBITS

For Sale—You will be satisfied with my high grade New Zealand Reds, Pedigree and Utility Stock at reasonable prices. F. R. Caldwell, Broodmoor, San Leandro, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock, Paul Kruger, Watsonville, California.

HOGS

CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

GRAND NATIONAL CHAMPION
Baron Duke 2d1st, 200001
Do you realize this is the only opportunity you have ever had on this Coast to secure the pigs of a Grand National Champion? Duke is breeding them long and thick. He is getting old and may die any time. You are started right if you get his pigs. A very good April boar pig sired by Duke and from a half sister of Rincons Rival 2nd, cholera immune, $35.00. Sandercock Land Co., in charge of Natomas Sales, 23 Montgomery Street, San Francisco, California.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

"Sapphire" Swine (Blue Hogs) actually blue in color. The Blue Hogs are no longer an experiment. We have bred them successfully for twelve years before offering any for sale. They mature quickly, grow very large and the females are the most prolific breeders on earth. Write for information. Mention this paper. The Blue Hog Breeding Co., Wilmington, Mass.

Billiken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Duroc-Jerseys at Ireland, home of Cherry Volunteer II and Ireland's Joe Orion. Ranch at Owensmouth, California, City Office, 1219 Brockman Building, Los Angeles, California.

A Few Poland-China Boars ready for light service by King's Big Bone Leader and President. Priced right. Full particulars on request. John M. Bernstein, Hanford, California.

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Pathfinder and King's Col. Stock, immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Have Sold All the Pigs advertised recently. Will have fine pigs from spring litters for sale in June. Fine Shropshire ram lambs, pure bred, for sale. J. J. Prendergast, Redlands, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724 Sacramento, California

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

Duroc-Jersey Swine and Sheep Sale, see ad on page 183. Jersey Queen Farm, San Jose, California.

El Profito 296867, a 900-lb. line bred Big Timm boar in service. Write. Viola L. Renwick, Santa Barbara, California.

Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

AUTOMOBILE SCHOOLS

Pacific Auto and Engineering School offers a practical course in auto and tractor tuition; day and night classes. 337 Golden Gate Avenue, San Francisco. Phone Market 1799.

PHEASANTS

For Sale—Golden Pheasants in full plumage. E. Borchert, Garden Grove Road, Anaheim, California.

POULTRY

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
The male is half the flock, therefore he should be of the best breeding. We are offering 500 breeding cockerels; 350 from 200 egg hens or better, the other 150 the pick of all our regular pens. Prices range from $5.00 each and up. Discount on large quantities. Shipment to be made October 1st. No fall chix for sale. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trap nested S. C. White Leghorns every day in the year since 1912. Box B-337, Inglewood, California.

Fall Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock. Price during August: 25, $4.00; 50, $8.00; 100, $14.00. Price during September: 25, $4.50; 50, $8.50; 100, $15.00. Special prices 500 and 1000 lots. Safe delivery guaranteed; you pay only for chicks received alive and in good condition; no money in advance, pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

We Sold Over 800,000 White Leghorn Baby Chix to satisfied customers since January 1. Buy chix now, and sell Fall and Winter broilers at fancy prices. Pullets will make fine early Spring layers. Price per 100: July, $14.00; August, $15.00. Safe arrival of full count live chix guaranteed. THE PIONEER HATCHERY, 409 Sixth Street, Petaluma, California.

Baby Chicks From My Carefully Selected, thoroughbred flock of S. C. White Leghorns. I am booking orders now for a limited number of first class chicks August and September delivery at $15.00 per 100. Make your arrangements early. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbs Poultry Ranch and Hatchery. Box 67 Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Baby Chicks—Our large, bred to lay S. C. White Leghorn hens will produce the pullets that will bring in the dollars this winter. Tupman Poultry Farm, Ceres, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

For Sale—S. C. White Leghorn Chicks $12.00 per dozen. Book now for September. We ship by express C. O. D. Welty's Hatchery, Petaluma, California.

For Sale—Silver Campines, baby chicks, young cockerels, hatching eggs, call at Silver Campine Ranch, quarter mile south of Clearwater, on boulevard.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

For Sale: Silver Campine Cockerels, also eggs for setting. Roy Ward, Lindsay, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, 8 Reservoir, Pomona, California.

Wanted—Pullets, any kind and age. Pay 40 cents pound. Pioneer Hatchery, 3 South Spring Street, Los Angeles.

FARM LOANS

There are Advantages In Borrowing Money secured by real estate from a strong reliable and well managed company of long standing, organized to transact a mortgage business exclusively. You can deal direct with this company and no commission or brokerage is charged. Money is loaned at lowest current rates and you can keep it as long as wanted, provided the security remains good. You are under no obligations in borrowing here, as we always have money of our own to loan and are constantly seeking new and acceptable acquaintances. Borrowers are assured here of that security, safety and protection under all circumstances that only a well established company of large capital and surplus can offer. Loans are made from 3 to 5 years on ranches, orchards, business blocks, residences, etc. We would be pleased to have you call or write you needs. MORTGAGE GUARANTEE COMPANY, Mortgage Guarantee Bldg., 626 So. Spring St., Los Angeles. Tel. 10707. Fresno office, Room 20, First National Bank Bldg.

Borrow Money While Available. Loans Made 5 and 10 Years. Interest only 6 to 6½ per cent. Repay all or part at any time. Will loan to build house, put down well, make fence. Repay present loan, etc. Write today for quick action. James Brown, 423 Hollingsworth Bldg., Los Angeles.

PIGEONS

Paradise Strain of White King Pigeons. Young unmated birds $2.00 a pair, mated birds $3.00 a pair. Paradise Valley Poultry Ranch, National City, California.

For Sale—Some Fancy White King Pigeons, Prize Birds. All mated pair. Wildwood Pigeon Farm, Corte Madera, Marin County, California.

ENGINES

For Sale—20 Horse Gasoline Engine (Olds), perfect condition, with belt and pump; cheap for cash. H. M. King, Anaheim.

WANTED

I Want Responsible and Experienced Fruit, alfalfa or grain irrigation farmers to work on crop share basis. Land is river bottom tule land, plenty of water, good living conditions and good markets. Will enter into one or two years contract with right men and might extend same into option of purchase. Party should have some implements, live stock, or money with which to buy them. Please state age, farming experience, from whom you have rented, amount of livestock and implements you own, financial condition, and size and age of family. State when your services will be available and amount of land you can handle. Address: Herman Janss, San Joaquin, California.

Wanted—Management of Farm by Californian, thoroughly familiar with fruit, alfalfa, grain and stock growing. An expert in irrigation. Address Lock Box 44, Fontana, San Bernardino County, California.

Wanted—Small Cane Mill with or without evaporator. Would appreciate an early reply if I can purchase at a reasonable figure. C. H. Beery, Usona, California, Mariposa County.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Wanted—A Good Second Hand Fertilizer disk drill, also need 5 to 7 gallon oil heaters for citrus ranch. G. R. Crane, Escondido, California.

Agents Wanted — Sell Automobile Tires and tubes on liberal commission. Address Arnott & Co., Dept. 10, Los Angeles.

Wanted to Hear From Owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Bees Wanted—In boxes or patent hives, also equipment. Address E. C. Rothhild, Rutherford, California.

Wanted—Pair of Pea-fowl, also young Pea-fowls. State age. E. Borchert, Anaheim, California.

Wanted—Jubilee Incubator from 200 to 500 eggs. State price. Mrs. Celia A. Lawrence, R. F. D., Hemet, California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Write for Circular and Prices of Seeds. Wanted Sudan. Hairy, Smooth, and common Alfalfa Seed in car loads. Box 511, Fowler, California.

GOATS

For Sale — Fine Vigorous Togg. Buck Kid 2 months old; sire pure bred Togg. "Prince Edward 1059;" dam 7-8 Togg. A. M. Starr, 645 Olive Ave., Long Beach, California.

2 Fresh Milch Goats for sale. Mrs. Jesse F. Williamson, Riverdale, California, Box 132.

MISCELLANEOUS

ELECTRIC EQUIPMENTS.
A Large Assortment Used Motors and Gas Engines always on hand. Let us know your requirement. Your order—no matter how exacting—can be filled. One of the best Electrical Repair Shops on the Coast, At Your Service. For all-around satisfaction take up your problem of equipments and repairs with Karl A. Hedberg, 131 Fremont Street, San Francisco, California.

Agents Making $200 Weekly! Everyone wants it. Formulas for 200 beverages to be made at home. Book Form. Send $1.00 for copy and territory proposition. Act quickly. BUYERS EXPORT AGENCY, Inc., 487 Broadway, New York.

Made of Redwood, Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

If You Want to sell or exchange your property write me. John J. Black, 116 St., Chippewa Falls, Wisconsin.

FARM LANDS FOR SALE

EXECUTOR'S SALE OF REAL PROPERTY—LANDS MUST BE SOLD AT ONCE TO CLOSE ESTATE
These lands include 1100 acres of farm land at Vallejo; 900 acres in one tract; front on the Napa River on the west and electric railway and state highway pass this tract on the east; also includes best business lot in the city of Vallejo, Harbin Springs in Lake County, and other desirable farm and city property. Executors are required by the will to sell all of this property and will meet interested parties at Vallejo or send full information on request.
Address: JOSEPH M. RAINES, FAIRFIELD, CALIF., or NOAH RATHEWAY, VALLEJO, Calif.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

160 Acres Unimproved rich farm land for sale in Yolo County. $50 per acre. Three miles from town. A. L. Friel, College City, Box 31, Colusa County, California.

For Sale: Lot on High Street, Oakland. Price $285. For information address R. A., Box 161A, Acampo, California.

FERTILIZER

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101, Watsonville.

Farmers Throughout California Are Using Trucks

—to transport valuable crops to market,
—to transport livestock in buying and selling,
—to transport implements from farm to farm or to repair shop and to work,
—to haul fertilizers, seed grains, milk, nursery stock, building materials

On some ranches employing several men, a truck is used to take them to work and is sent for them. During the day the same truck is used for hauling.

While the value of a truck to a farmer differs somewhat with the nature of the enterprises in which he is engaged, it has been determined very clearly that trucks used in farming have added greatly to farm profits by cutting farm expenses. The speed with which tonnage can be hauled—crops transported and material secured, cuts deeply into high wage expense and many farmer owners find it possible to easily earn $25 per day with a $2,000 or $3,000 truck investment. There is more work for trucks in California than the present truck tonnage can handle.

Kissel trucks are made in ¾, 1½, 2, 3½ and 5 ton truck models and made with extra loading space. Gear ratios are made to suit the farmer's needs.

If you would like to know more about "Making Money by Truck" write

Western Motors Company

Oakland Los Angeles San Francisco
Gilbert Woodhill, Manager
Eleventh and Flower Streets Telephone 60388, Los Angeles

AYRSHIRES

At Public Auction

The Preston School of Industry, Ione, California, will disperse at public sale its entire herd of registered Ayrshires, consisting of approximately 60 cows, heifers, and bulls.

Tuesday, September 16, 1919
State Fair Grounds, Sacramento, Calif.

This herd was established with animals selected from some of the best known herds of the United States and Canada, and in this dispersal buyers will have an opportunity not before afforded in the west for the purchase of registered Ayrshires at public sale.

See the School Exhibit at the State Fair

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Calif.

SILO PACKER

We recently saw an illustration of a "silo packer" which seemed to be at least novel, and we imagine might be most effective in increasing silo capacity. It consists of a roller operated by light weight gas engine which is placed inside the silo and operates while it is being filled. It is gauged so as to continually go round and round, compressing the freshly cut silage so as to make better preservation and at the same time increase the capacity of the silo by one-third. In these days of high priced labor it beats tramping.

NATIONAL GRANGE MEETING

The 53rd annual session of the National Grange will be held at Grand Rapids, Michigan, beginning November 12, 1919. All officers are to be elected, and a large amount of nationally important business will be before the meeting which may last two weeks. Arrangements have been perfected for headquarters at the Hotel Pantalind, by the national executive committee, S. J. Lowell, chairman; Oliver Wilson, national master; Thomas C. Atkeson, and W. N. Cady.

RETAIL PRICES ON FERTILIZER VARY 100 PER CENT

The striking disclosure is made in figures gathered by the United States department of agriculture that retail prices of fertilizer materials paid by farmers at the present time very considerably as between states and regions and widely as between counties in the same states. In some instances the variation is more than 100 per cent. For instance, a farmer in one county in Tennessee is paying $81 a ton and in another county $150 a ton for nitrate of soda, and in Georgia a farmer is paying $17.50 in one county and $49.70 in another for acid phosphate.

AUSTRALIA CONTINUES WHEAT GUARANTEE

Australia has decided to continue the wheat pooling system for at least another year and will guarantee farmers $1.05 per bushel, less freight.

A weed is any plant in the wrong place. Vegetables too close together are as injurious to each other as weeds. Thin them out before they are large enough to crowd.

Protects **Farm Buildings**

Pioneer Roofing

The Most Economical and Durable Roof You Can Put On

Equally good for old or new Roofs!
Looks well and wears well

We make a grade for every type of building—Barns, Sheds, Silos, Warehouses, Residences, etc.

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or Write for Samples and Prices

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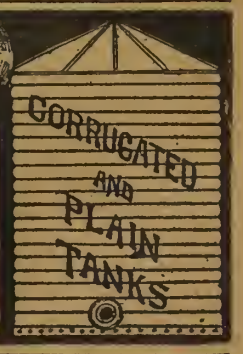
SURFACE IRRIGATION

10 FOOT 6 INCHES LONG — DOUBLE LOCK SEAM — ONE PIECE BODY



MANUFACTURERS OF
Well Casing, Tanks, Riveted Water Pipe and Supplies
AMERICAN STEEL PIPE & TANK CO.
P.E. Building, Los Angeles, Cal. Branch at Fresno

A cup of fine rich tea, full of the real tea-flavor, costs less than a cup of common tea—a pound makes so many more cups.

Now this is either so or not so; and you can prove it at our expense.

Get Schilling Tea at your grocer's. Serve it a half-dozen times. If you don't find it's the fine economical tea we say it is, tell your grocer "I want my money back" and then use the rest of the tea.

There are four flavors of Schilling Tea—Japan, Ceylon-India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

Sulphur

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100 per cent pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR. 100 per cent pure. This has increased various crops up to 500 per cent.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc.

And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 DEGREES BE., Sulphur Paste, Nicotine, Blackleaf 40, etc. Fungicides and Insecticides.

Carried in stock and mixed to order.

San Francisco Sulphur Co.

524 California St. San Francisco, Calif.

We are equipped to make immediate shipments. Send for "ILLUSTRATED BOOKLET," also booklet "NEW USES FOR SULPHUR", Price-list, and Samples.

Please state for what purpose you use the sulphur, quantity needed, and date of shipment preferred. Telephone Kearny 871.

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Pumps, Engines, Sprayers, Hoists Etc.
Catalog FREE on Request
Smith-Booth-Usher Co.
Los Angeles

Some women have earned as high as $7.00 a day in Sacramento canneries.

Household Department

MY MUVVER

By Ellen M. Ramsay

Oh! the boo-fullest lady in all of our town,
In her old kitchen apron or new Sunday gown,
Is my muvver who lives with my daddy and me.
She's as sweet and as pretty as pretty can be;

'Cause her cheeks are so pink, and her eyes are so blue,
And her mouth was just made to be kissing boys, to.
When at dark in my crib-bed she tucks me so snug,
Then she gives me the whoppingest kiss and big hug.

In the night onee I had the most awfullest dream.
It woke me all up and I started to scream,
Till I saw right beside me a something all white,
And my tongue, it just felt like it freezed up with fright.

'Cause Jane said the angels watched over my bed,
And I don't know no angels and I was afraid.
But the white thing said, "Little Boy," and made me 'seover
It weren't no old angel but just my dear muvver.

ON THE EDGE OF THE WORLD

"MUST you go now, Velverette? It is hard that we cannot be together but we mustn't ask too much of Providence!" Mrs. Warren glanced contentedly at Velverette. "There are not many in this sad old world as happy and blessed as we. And tomorrow is Thanksgiving! We must have a feast, Velverette!"

Velverette stooped, securing the straps of her lunch box. Like her mother, she was frail and fading. Her name was a touch of Fate's irony. Had she ever been gay and vivid like the patch of bloom in memory's garden? Long ago she had exchanged Eden for factory smoke and city pavements. She had sacrificed youth and love to make Mother comfortable.

"Yes, Ma, we are very happy and tomorrow we'll have our little spread and be merry together. The shop closes for the day. Don't be lonesome now and don't let anything bother you."

"What could bother me?" the old lady retorted. "Haven'tyou been my sea-wall since your father died? Run along and don't be too gay and pretty there at the shop! What if things happened as in stories? What if one of the bosses should notice you?"

"Nonsense!" laughed Velverette. "At my age? Goodby, Mother!"

In the entry her hands came together convulsively as she smothered a hysterical laugh. "Poor Ma;" she whispered. "God take care of both of us if one of the bosses should 'notice' me!" Her hands dropped and she stepped forth with the swing of sweet sixteen.

Thanksgiving! Had Velverette, behind those big glass doors which caged her from the street, much for which to be thankful? For 20 years at these portals she had surrendered her freedom.

There was a subdued stir in the alcove where she stopped to register. Her thin fingers nervously fluffed up the gray locks at her temples as she donned the smile she was expected to wear. Patty Prince, cash, brushed past, hesitated and turned back for word of greeting. There was not a girl on the third floor who did not dearly love Number Four, of the Suits Department.

"It's going to be a crush for the special sales, isn't it?" she whispered. "Say, Miss Warren, do you know—but of course you do!" She suddenly slid on her way, smiling back half-heartedly at her friend.

Number Four went to her alcove on the third floor and began to drape dummies, whisking away imaginary specks of dust. While so occupied she became conscious of the presence of a young girl, pretty and smartly dressed, whose lost, detached expression appealed for smypathy. The girl advanced, seeing herself observed. "You are Miss Warren, are you not?" she asked. "Mr. Travers ordered me to report here."

Mr. Travers was the manager. "I am Miss Warren," Velverette nodded. "What does Mr. Travers wish?"

"That you shall start me in my new work I'm Manda Stuart, promoted from the first floor. I feel sure I can sell lots of these pretty suits when I take charge. Haven't you liked it up here, Miss Warren? Mr. Travers said——"

Miss Warren was not listening closely. Something was pounding against her hand, gripped closely at her breast. She had made blunders, she was not so brisk nor attractive, so able to persuade madam she was lovely in blue, when she knew madam looked hideous. She had been sick a time or two. Tonight she would be transferred to some less important station or given notice. This was the pretty little Manda Stuart who was winning her way as a good sales woman. Somebody had praised the girl just last week. She had a trim little figure, a coaxing way, bubbling vitality. She pleased customers.

Miss Warren's hand fell away from her pounding heart and went up mechanically to find her gray hair. Then she said in the voice of 20 years of trained service: "Very well, Miss Stuart. You may hang your wraps in there for the present. While we are idle I will show you. This tag, now——"

The usual Special overtook them presently. People crossly mussed and tried on garments, retreating without purchase or apology.

(Continued Next Week)

TAKE OUT STAINS BEFORE LAUNDERING

Directions for taking out the more common stains from clothing, which were promised last week, were held over because of special pest fighting number, the space being given to hints for besting the ant, the moth, and all the company of insect annoyances with which the housekeeper has to deal.

One caution bear in mind, the stains are more easily removed before laundering; sometimes it is almost impossible to get them out after they have passed through hot suds or boiling.

To take out blood stains, wash out when fresh with naptha soap and lukewarm water or cover with a paste of raw starch.

Candle wax. Blotting paper and a hot iron.

Coffee. Pour boiling water through the stain; if old, soak first in cold water containing a little borax.

Chocolate, cocoa, and tea. Borax and cold water.

Dye (fading from one fabric to another. Put the article into a pan of boiling water and boil until color has about disappeared, bleaching in the sun if necessary.

Fruit. Spread the stained portion over a bowl and pour boiling water from a teakettle with force. Peach stains may be removed by soaking in Javelle water, rinsing thoroughly afterwards. Formula for making Javelle water is given in answer to query in this department on bleaching flour sacks.

Grass. For wool and silk, cover the spot with talcum powder, magnesia, or French chalk, warming slightly. Brush the powder off and apply again, if necessary. Or put between blotting paper and apply a hot iron. On a fabric not likely to spot, such as serge, gasoline may be used. Make a thick pad of cloth and lay the spot over it. Apply the gasoline with a piece of the same material or color, at least. Rub with a circular motion between the fingers from the outside of the circle inward. For fabrics of delicate color likely to show a "ring" make a paste of ether and magnesia or French chalk and apply to the spot, brushing off when dry.

Ink. Fill a bowl half full of water and lay the stained portion over it. With a medicine dropper or teaspoon drop on a little Oxalic solution diluted half with water. Follow almost at once with a drop of ammonia, dip into the water, rub gently with a circular motion between the hands. Repeat, using acid and ammonia alternately, until stain becomes very faint or disappears. Javelle water will remove the last tinge of color more safely than acid. Rinse in ammonia water.

Iodine. Wash with naptha soap when fresh or soak in ether, if stain is old. Jevelle water may be used for old stains difficult to remove.

Iron rust. Cover the spot with lemon juice, sprinkling salt over it, and leave in strong sunlight, until it disappears. Wash carefully. Another method is to spread the fabric over a bowl of water containing one teaspoon borax. Drop dilute hydrochloric acid on the spot, dip in the borax water and repeat.

Mildew. Mildew may be removed

McQUAY-NORRIS
LEAK-PROOF
PISTON RINGS

How you can get more power, decrease carbon and save gas in your automobile tractor, truck or engine, clearly explained in our free booklet, "To Have and to Hold Power." Write for it—it will help you know piston rings. 16F

McQuay-Norris Manufacturing Co.
2832 Locust St., St. Louis, U. S. A.

REMEMBER THE
HORSE-SHOE TREAD

PACIFIC RUBBER CO
LOS ANGELES

W. J. Bush
Citrus Products Co., Inc.
National City, Cal.

Manufacturers of
Essential Oils
and
Chemicals

Citrus By-Products a Specialty

We are always in the Market for Lemon Culls

by soaking in dilute Javelle water, several hours, if necessary, or a paste of raw starch, a little soap solution, lemon and salt may be spread over the stains for a day or two.

Paint. Add turpentine or gasoline until the pigment is set free by the drying oil dissolving.

Pitch. Turpentine. If any "ring" results after careful application over a pad, remove with hot iron and blotting paper.

Wagon grease. Rub lard on the stain and wash with soap and water.

LEMON HINTS

By Minnie Calista Childs

Lemon Ice

Make same as lemonade, adding well beaten white of an egg to each quart, freeze and serve with sunshine cake or any light sponge cake. A cooling and delicious dessert.

Frosting

Juice and grated rind of one lemon, add powdered sugar enough to make a smooth paste that will not run; beat well, add small lump of butter.

Garnishing

Thin slices of lemon and orange for vegetable or fruit salads.

Fruit Salad

Three oranges, juice of one lemon, two bananas, or peaches, plums or pears may be substituted for bananas. Sprinkle well with cup of sugar. Add two tablespoons of gelatine dissolved in two cups water. More or less sugar may be used according to the acidity of fruit.

Always serve lemon with fish.

Half a lemon in hot water for that tired feeling.

Salad Dressing

For all kinds of salad dressing use lemon juice, instead of vinegar.

To Make Jelly Jell

If fruit is a little too ripe to jelly well, add two tablespoons of lemon juice to a quart of fruit juice.

Quince Conserve with Lemon

To one quart of thinly sliced quince, add one thinly sliced lemon. Let cook with two and one-half cups of sugar, with water to cover until clear. Use lemons for health.

SOME PICKLE RECIPES

Many requests have been coming to the Cultivator for recipes for cucumber pickles. A dill recipe was given in issue of August 2 under "Queries." Here is one for putting up in brime for later adding of vinegar:

Cucumbers in Brine

To one gallon cucumbers add one cup salt and cover with boiling water. Let stand 24 hours, pour off brine, boil and pour back over pickles. Let stand 24 hours and repeat; repeat third time. These will keep perfectly in barrel or stone jar if weighted board forces all cucumbers under the brine. If desired they may be put in jars and scalded without further treatment. Of course if weaker brine is used it might be necessary to sterilize after putting in jars. When wanted for pickles these cucumbers may be taken from brine, washed and covered with boiling water and vinegar, equal parts, with alum size of hickory nut. In about six hours the pickles will be firm and ready for use.

Sweet Cucumber Pickles

Soak cucumbers in brine two weeks; drain and if large slice lengthwise. Boil 20 minutes in syrup of six pounds sugar (or substitute), four quarts vinegar. Keep in tightly covered crock.

Cucumber Relish

Not boiled—twelve large cucumbers, four large green peppers, four large onions, one cup horseradish, one cup sugar, one-half cup salt, one teaspoon mustard seed, one teaspoon celery seed, cold vinegar. Remove skins and seeds from cucumbers; then put all the vegetables through the food chopper. Add the salt, mix well and let it stand overnight. In the morning drain, and add horseradish which has been put through the food chopper, and the other ingredients. Mix all thoroughly with cold vinegar, pack tightly in glass jars, and seal at once.

Green Pumpkin Pickles

Take one pumpkin that has not begun to turn, pare and cut into strips. Put into a crock a layer of pumpkin, sprinkle with salt and continue in this way until the crock is full or the pumpkin used. Cover with vinegar and let stand overnight. In the morning pour off the liquid and throw it away. Make a pickle vinegar and cook the pumpkin in it until tender, then put it into a crock and cover and set away for a few weeks before it is ready to use.

Pickled Onions

Take uniform, medium-sized onions, peel, put into boiling water and cook until quite clear. Take out, dry thoroughly between cloths and pack them into glass jars. Take good vinegar, put into it several pieces of ginger, some whole pepper, bring to a boil, and when cold pour over the onions and seal the jars.

Small Melon Pickles

Select green muskmelons about the size of an egg; prick well and place in strong brine for three days. Soak until fresh, wipe dry, place in jars and pour over them hot spiced vinegar, seal and keep in a cool place.

Green Pepper Mangoes

Take large green peppers which are sound and firm, and a few red ones to add to the appearance; cut off the tops, extract the seeds; put in strong brine and soak for 24 hours. Drain, wipe dry and stuff with the following: Chop cabbage, green tomatoes and several onions rather fine; scald and drain; add salt, white mustard seed and a little ground cloves, mix well, stuff the peppers, sew on the tops, and cover with strong, hot vinegar containing one cup of brown sugar; reheat the vinegar and scald for four mornings, and seal up.

HOUSEHOLD QUERIES

Bleaching Flour Sacks

Sometime ago you published articles stating uses of flour sacks. I would be glad to know how these subscribers took the lettering off, and bleached them for such uses.

The ordinary boiling and bleaching in the sun will take out most of the color. For quicker results soaking in a dilute solution of Javelle water will take out stronger color. The Javelle water is made by dissolving one pound washing soda in one quart boiling water in enamel pan and one-half pound chloride of lime in two quarts cold water. After the lime water has settled, pour off the liquid into the soda solution, bottle tightly and keep in dark place. After using dilute solution of this (strength can only be determined by testing on one piece) rinse cloths thoroughly. Some of the stronger washing powders will also take out the color.

If any of our readers have found a better or easier method the Cultivator will be glad to publish and give credit on subscription for suggestions.

SPINACH LOAF

Spinach shrinks so much in cooking that it takes a large quantity to serve a family. If the supply is scanty, try serving it in the form of a loaf.

Two cups chopped cooked spinach, four cups boiled rice, one cup white sauce, one red sweet pepper.

Make a thick white sauce from one cup skim milk, three tablespoons flour, three tablespoons fat, and one teaspoon salt. Melt fat and mix with flour, add to milk, and stir over fire until thick. Mix with rice, chopped spinach and pepper. Form into a loaf and bake 20 to 30 minutes.

ESSEX MOTORS DETROIT

Note How Everyone

It Has Become a Familiar Car on Nearly Every Highway

Hails the Essex

Essex owners report the satisfaction they experience at the way people speak of their cars. It increases their pride of ownership. Motorists and even boys on the street hail the Essex with some such greeting as "There is an Essex."

Curiosity in the car that possesses quality and performance at moderate cost and without the expense and weight of such cars as formerly were the only ones that possessed those advantages, has given way to openly voiced admiration.

Essex Owners Are Its Salesmen

At first it was what people who had seen the Essex said about it that led to its popularity.

Now owners—and there are thousands of them—are endorsing it on every hand. People stop Essex owners to inquire about their car. The answer is unanimous. When asked as to its performance they make no reservations. Admiration of its riding qualities is never lacking.

Every wanted quality in an automobile seems to have been met in the Essex. Ask the first Essex owner you meet.

Essex Performance Is Always Mentioned

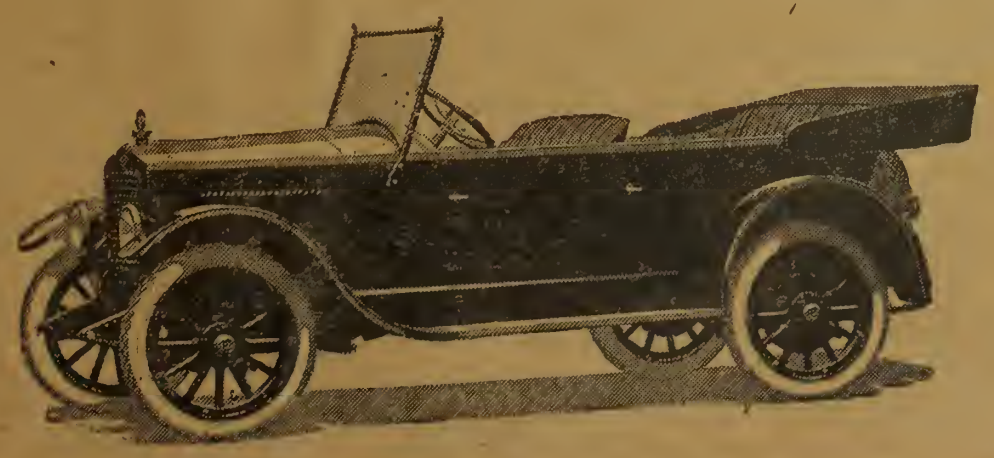
There is no uncertainty to the owner as to Essex performance. Drivers know positively that their cars will meet any acceleration or endurance test they impose.

They know they can match the performance of whatever car they encounter.

There are now enough Essex cars on the road to permit you to note their performance. They are always in the lead when quick acceleration is desirable. They hold their own on the road against cars regarded as the fastest. They keep going and require little attention.

The repair shop is no place to learn about the Essex for it has little need to know the repairman.

Won't you make some inquiry about the Essex? You will find it interesting and convincing.



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supply running water at high pressure to home, barn, garage and pasture—for lawn and garden and for fire protection—Automatic in action—needs little attention. Operation by gas, gasoline, electric, windmill or hand power as desired.

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No. 2012 for wells 25 feet deep or less.

ARCADIAN
Sulphate of Ammonia

A ton of ARCADIAN Sulphate of Ammonia carries more plant food than a ton of any other nitrogenous fertilizer.

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼ per cent. Made in U. S. A. Arcadian is the great American Ammoniate.

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MAKE 1½, 2 or 3 TON
Truck
out of your old car
and save at least
$1,000
on a truck?

Cash or Easy Terms

Woodward Garage & Truck Attachment Co., Inc.
Corner Pico and Alvarado Streets
Los Angeles, Cal.
Telephones: 50939; West 416

Los Angeles Markets

Los Angeles, August 13, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 57 lb.; prices to retail merchants in 1-lb. squares, 57@58.

Dairy Exchange prices last week on extras:

Aug.	6	7	8	9	11	12
'19 ...	59	59	57	57	57	57

CHEESE

Brokers' prices:
California fresh, lb., 34; price to retail merchants, 36@37.

EGGS

Fresh extras, Produce Exchange closing price 55 dozen, price to retail merchants 58 dozen; case count, Produce Exchange closing price, 54 dozen; price to retail merchants, 58 dozen; pullets, Produce Exchange closing price, 53 dozen; price to retail merchants 49.

Dairy Exchange prires last week on extras:

Aug.	6	7	8	9	11	12
'19 ...	58	57	55	56	56	55

POULTRY

Prices to producers: Hens, lt., 25@30; colored over 4 lbs., 33; broilers, 27; fryers, 26; roasters, 30; old roosters, 10; capons, 42; ducks, 27; ducklings, 27; geese, 25; turkeys, 34@40; squabs, 45; pigeons, doz., 1.00.

Belgian hares, live, 13.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 12, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, sacked per 100 lbs., 3.00@3.50. New Stock, Burbanks 3.40@3.65. Homegrowns, White Rose 1.00@1.10 per lug box; sacked per 100 lbs., No. 1s grade 3.25@3.50; No. 2 grade 2.75@3.00.

Sweets, lb., 5½@6½.

Onions: Demand and movement moderate. Homegrown White Globes 90@1.00 per lug; 3.25@3.50 per cwt. Yellow varieties 2.75@3.00 per cwt., lugs 1.00@1.10; Garlic, lb, 40.

VEGETABLES

These are the actual prices obtained August 12, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beets, doz., bunches, 40.

Beans: Kentucky Wonders, 3@3½ lb., practically no demand.

Carrots, doz., 25@30.

Cucumbers: Local lug, 20@25.

Celery: Local, best, 1.00@1.25 dozen bunches, smaller 75. Crates, best 4.50@5.00.

Corn: Roasting ears, 55@65 per lug of 3 dozen.

Eggplant, best, lb., 6@7.

Parsley, doz., 15.

Peppers: Bell lug, 50@65; Chili 40@50.

Peas: Local, lb., 10@11.

Spinach, doz., 20.

Squash: Local summer, lug, 40@45.

Tomatoes: Lug, ripe, 30@40; turning 50@60.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained August 12, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples; New crop, Alexanders, apple boxes 2.75@3.00; Gravenstein, bulk, 5@6 lb.; packed, 3.25@3.50; Red Astrachans, bulk 4@5 lb. Crabapples 1.50@2.00.

Blackberries: Cr. 30 baskets, 4.25@4.50.

Cantaloupes: Demand and movement slow, market firm. Sales direct to retailers—San Fernando: Green meats unwrapped, standards 45s 75@1.00; Tip Tops 75@1.00. Imperial and Turlock; Honey Dews, standard crates mostly 75@1.00.

Figs, per 10 lb. box 1.75@2.00.

Grapes: Demand and movement good, market firm. Sales direct to retailers—Thompson Seedless, lug boxes, bulk 5½@6½ lb. Salems, lug boxes 9@10 lb.; Malagas, lug boxes 6@7 lb.

Loganberries: 4.50@5.00 per cr. of 30 baskets.

Nectarines, lb., 7@8.

Peaches: Demand and movement good, market firm. Sales to retailers—locals, various varieties, bulk mostly 4@6 lb. Northern Early Crawfords and Early Elbertas, bulk, 4@6 lb.

Pears: Demand and movement good, market firm. Sales direct to retailers—Northern Bartletts, standard boxes 3.50@3.75. Bulk, fancy 7½@8½ lb.; choice 5@7 lb.

Pineapples, lb., 15@16.

Plums: Demand and movement good. Satsumas and Wicksons 6@6½ lb. Burbanks 4@5 lb.

Raspberries: Cr. 30 boxes, 4.50@5.00.

Strawberries: Cr. local, 5.00@7.00, best 2.00@2.25; poorer, low as 1.00.

Watermelons: Demand and movement slow, quality and condition generally good. Local Chileans, large 1½ lb., medium 1, small ½ lb.

Lemons: Fancy packed, 6.00@6.75; local pack, 4.00@4.50; loose, some tree ripe, 3.00@4.00.

Oranges: Valencias, medium fancy, 5.25@5.75; local pack, 3.00@4.00.

Grapefruit: Local fancy, 2.50@4.00 bx.; poorer, 1.50 up.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	18.00@22.00
Barley	16.00@21.00
Alfalfa	16.00@20.00
Wheat or Barley straw	8.00@10.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	27.00@28.00
Standard dairy	24.00@26.00
Standard alfalfa	21.00@23.00
Stock alfalfa	17.00@19.00

GRAIN AND FEEDS

Price on local grain exchange August 5:
Price local grain exchange, August 12:
Milo maize, 3.00@3.05.
Feterita, 3.20.
Barley, 3.00@3.05.
Corn, Yellow, 3.70@3.75.
Wheat, 4.80@4.85.
Egyptian Corn, 3.30.

San Francisco Markets

San Francisco, August 12, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	56
Prime Firsts	55
Firsts	54

CHEESE

Dairy Exchange quotations:

Cal. Flats	32½@35
Cal. Y. A. fy.	38
Ore. Triplets	37
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	60
Firsts	56½
Extra Pullets	57

POULTRY

Hens, W. Leghorns, 28@32; colored, 36@38; roosters, young, 36@38; old, 19@21; broilers, 30@33; fryers, 33@34; squabs, 2.50 doz.; ducks, 25@27; geese, 23@25; broiler turkeys, 40@47.

Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.

Calves: Light weight, 12½@13; medium, 11½@12; heavy, 10@11.

Lambs: Yearlings, 10@10½; milk, 13@13½.

Sheep: Wethers, 9¼@9½; ewes, 7@7½.

Hogs: Hard, grain fed, 100 to 150 lbs., 19¼; do, 150 to 250 lbs., 20; do, 250 to 300 lbs., 19½; do, 300 to 400 lbs., 19.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; canner cows, 4@5; good bulls, 5@6½; calves, 9@10.

POTATOES

Potatoes: Per 100 lbs.: Rivers, choice 2.40@2.50; fancy, 2.25; sweet, lb., 8@9; garnets, 2.00@2.25.

Stockton: Receipts very light account bargemen's strike. Very few sales account car shortage.

ONIONS

Onions: Onions, fancy, 2.25; choice, 2.00; Garlic, 21@22½.

VEGETABLES

Wholesale selling price:

Beans: String, 2@3½; Wax, 3½@4; Pole, 3@4; Limas, 3½@4; Italian, 5@6.

Cabbage, doz., 40@55.

Celery, cr. of 5 doz., 2.25@3.00.

Cucumbers: Large box, 50@75.

Corn, doz., 15@30.

Eggplant, southern, fy., 50@75 bx.

Lettuce, doz., 25@35.

Okra, green, lb., 6@8.

Peppers, Bell, lb., 10@20; Chili, 7@11.

Peas, lb., 6½@7.

Radish, 7@9 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.25@1.50.

Spinach, 75@1.25.

Squash: Summer, cr., 50@75; Italian, 50@1.00 bx.

Tomatoes: Sacramento River per 35 lb. bx., 1.50@2.00.

CITRUS

Wholesale selling price:

Per bx.: Lemons, fancy 6.50@7.00; choice, 5.50@6.00; standards, 4.00@4.50; lemonettes, 3.50@4.00; grapefruit, fancy, 3.00@5.00; choice, 2.50@3.50; oranges, 4.25@5.50.

FRESH FRUITS

Wholesale selling price:

Apples: California Newtown Pippins, 2.25@3.00; do, choice, 2.50@3.00; Red Astrachans, 2.50@3.00 per box; white, 2.50 per 4½ tier; new crab, 75@1.25 for 20-lb. box; Gravensteins, 2.50@3.00 per box; yellow transparent, 3.00@3.25; Alexanders, 2.25@2.50 per box.

Apricots: 1.25@1.50; loose, lb., 7@8; 130@160 ton.

Bananas, 7@7½.

Blackberries: Ch., 7.00@8.00.

Cantaloupes: Demand and movement slightly improved, market firm. Sales direct to retailers: California, Turlock district: Green meats, standards 45s 1.50@1.75; ponies 1.00@1.25; flats mostly 75; Honey Dews, bulk 1½ lb.; flats jumbos 9s, 1.00@1.25.

Turlock: Warm days, cold nights. Haulings moderate account cold nights. Sufficient cars. Demand improving, market active tendency. Quality generally good, condition good. Carloads f. o. b. cash track—too few sales to establish a market. Wagonloads cash to growers, demand brisk. Eastern and ripe sales, standards 75@90; few ponies 40@50; flats mostly 40; Honey Dews, haulings increasing, quality and condition generally good, some green, 10.00@13.00, mostly 12.00 bulk per ton.

Figs, 75@1.00 bx.; Brunswick, 75@1.00; whites, 75@1.00, 30 lb. bx.

Grapes: Supplies light. Demand and movement good, market firm. Sales direct to retailers—4 basket crates—Thompson Seedless, 1.15@1.25; Malagas, and few Flame Tokay, 1.50@1.75.

Loganberries, ch., 8.00@11.00.

Huckleberries, 18@20 lb.

Nectarines, 1.25@1.50.

Peaches: Sacramento. Demand and movement good. Carloads f. o. b. usual

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terms, Elbertas. Boxes 75@80.

Pears: Supplies heavy. Demand and movement moderate, market steady. Mostly full ripe stock. Sales direct to retailers—Bartletts, standard box. Few No. 1s mostly 2.50; No. 2s 1.25@1.50.

Sacramento: Demand and movement moderate, market steady. Bartletts, standard boxes, carloads f. o. b. usual terms, 2.50@2.75.

Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00 @1.25.

Pineapples, doz., 2.00@5.00.

Raspberries: Ch., 14.00@15.00.

Strawberries: Ch., 10.00@14.00.

Watermelons, lb., 1@1½.

DRIED FRUITS

The California Prune and Apricot Growers, Inc., announce prices:

Apricots, Sunsweet Quality: Choice 25, extra choice 26, fancy 27, extra fancy 29, Fancy Moorparks 29, extra fancy Moorparks 32. Growers Brand Quality: Choice 24½, extra choice 25½, fancy 26½. First Quality: Standards 19, slabs 21.

Prunes, basis price: 20-30s (flat lb.) 22, 30-40s (basis) 16, 40-50s (basis) 14, 50-60s (basis) 12, 60-70s (basis) 11½, 70-80s (basis) 11, 80-90s (basis) 11, 90-100s 11, 100-120s (flat lb.) 8½, 120s and up (flat lb.) 7½. Growers' Brand ⅛ cent under these prices.

Peach prices for the 1919 crop were announced at Fresno, July 16, by the California Peach Growers Inc. The price list agreed upon by the directors and announced by General Salesmanager Sturtevant, follows:

Effective this date and until further notice, our prices f. o. b. our California factories, on 1919 crop dried peaches for the domestic and foreign trade: September, October, November shipment, sellers' option; guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾; Muirs, 15.
Choice yellows, 15¼; Muirs, 15½.
Fancy yellows, 16½; Muirs, 17½.
Extra fancy yellows, 17¾; Muirs, 18¾.
Slabs yellows, 14½.

For "practically peeled" add 1½ cents per pound (any grade).

Prices above are all bulk basis.

For packing in: 50-pound or 25 kilos boxes add 1 cent per pound.

25-pound or 12½ kilos boxes, add 1¼ cents per pound.

10-pound boxes, add 2 cents per pound.

Blue ribbon peaches packed five-pound cartons, 12 per case, 12.00 per case.

Blue ribbon peaches packed two-pound cartons, 24 per case, 10.00 per case.

Bakers' special, "practically peeled," 16¾ per pound, bulk basis.

Figs: Wh. stand., 16; ch., 18½; ex. ch., 20; fy., 22½.

Apples: Ch. (in 50's), 21; ex. ch., (in 50's), 21½; fy., (in 50's), 23.

Pears: 1919 crop, stand., 20; ch., 22½; ex. ch., 23½; fy., 26.

NUTS

Almonds: The Exchange will make prices about September 10.

Prices named by outside buyers:

Nonuarell, 36, IXL 33, Ne Plus Ultra 32½, Peerless 29, Drake 26, Golden State 25, Languedoc 25, Hard Shell 20.

BEANS

Shippers quotations f. o. b. California: Bayo 6.50@6.75, Blackeye 5.75@6.00, Cranberry 7.00@7.50, Fava nominal, Garbanzo 11.25@12.00, Lima (f. o. b. So. Cal.) 12.00, Lima Henderson Bush 10.50@11.00, Pink 6.75@7.00, Red Kidney 11.50@12.00, Red Mexican 5.75@6.25, Tepary 3.00@3.50, White, large 7.50@7.75, White, small 7.75@8.00.

GRAIN AND FEEDS

Oats: Red feed, 2.95@3.05; black, 2.75 @3.00 per cental.

Corn: California yellow, 78.00@79.00 per ton. Egyptian 3.25@3.35; Milo maize, 3.10@3.20; Red 3.12½@3.17½.

Rye. 3.30@3.75.

Barley: Feed 3.10@3.15.

Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00 @54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of August 9, Scott, Magner & Miller says:

Receipts past week 2727 tons. The car situation throughout the country seems to be becoming more acute daily. Very few box cars being furnished for hay movements and although some gonodal cars are to be had yet as this equipment cannot be used to carry hay where tunnels have to be encountered this makes it difficult to ship hay to many points where it is required. They hay market has been well maintained and prices are about as quoted. Occasional shipments of fancy red oat or fancy wheat hay at times bringing in excess of our quotations. There has been a good demand for alfalfa especially throughout the country districts; this with the grinding of so much alfalfa hay into meal has had the effect of making a very firm market. There is no demand for straw.

We quote today wholesale prices in carload lots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5-wire bales) per ton	17.50@18.00
No. 1 Wheat or Wheat and Oat hay	15.00@17.00
No. 2 Wheat or Wheat and Oat hay	12.00@14.00
Choice Tame Oat hay	15.00@17.00
Other Tame Oat hay	12.00@14.00
Wild Oat hay	10.00@13.00
Barley hay	12.00@15.00
Alfalfa hay	17.00@21.00
Stock hay	9.00@11.00
No. 1 Barley straw, bale	.50@ .80

Citrus Markets

Los Angeles, August 13, 1919.

Shipments of Valencias are now running 100 cars daily or better. It becomes daily more apparent that Valencias will be cleaned up and at prices satisfactory to the grower. Good stock of every size is commanding ready sale, off sizes are being shaded somewhat in prices.

Weather conditions generally over the East have created good demand for lemons. Good stock has been commanding around $6.00 f. o. b. There are many sales under these figures. There are nearly 700 cars in storage which is materially above that of last year.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California: oranges, 30,015 cars, lemons, 8591, total 38,607. To same date last season; oranges, 12,846, lemons 4845, total 17,691. Central California this season; oranges, 4427, lemons 354, total 4781. To same date last season: oranges, 2539, lemons 115, total 2654. Northern California; oranges, 244, lemons 2, total 246. Last year same date; oranges, 203.

AT THE AUCTIONS

August 11

New York: 27 Val., 1 mixed, 1 lem. Off sizes lower. Val. 2.80-6.95, Mikes. 4.80, grapefruit 3.60.

August 12

New York: 16 cars. Val. 3.80-7.75, lem. 2.25.

Pittsburg: 3 or., Val. 2.20-5.60, sweets. 3.60, Mikes. 1.45-2.65.

Boston: 2 or., 1 lem. Val. 4.85-6.75, lem. 1.65-1.95.

Philadelphia: 6 or., 1 lem. Val. 3.20-6.35, lem. 1.95-3.40.

WEATHER REPORT

San Francisco, California, August 9, 1919.

Stations	Wk.	Rainfall— Season.	Norm.	Temp. Max.	Min
Eureka	.00	.02	.12	62	52
Red Bluff	.00	.00	.00	92	60
Sacramento	.00	.00	.00	88	52
San Francisco	.00	.01	.01	62	50
San Jose	.00	.00	.00	76	54
Fresno	.00	.00	.00	94	60
San Luis Obispo	.00	.00	.03	76	52
Los Angeles	.00	.00	.00	78	58
San Diego	.00	.00	.00	74	62

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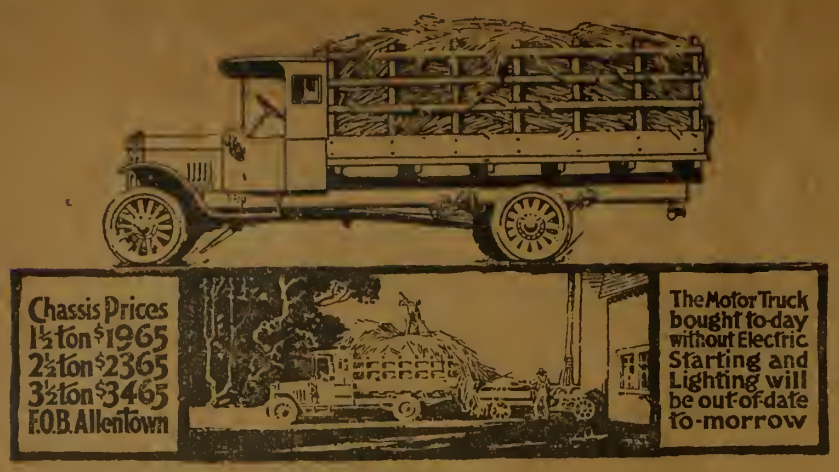
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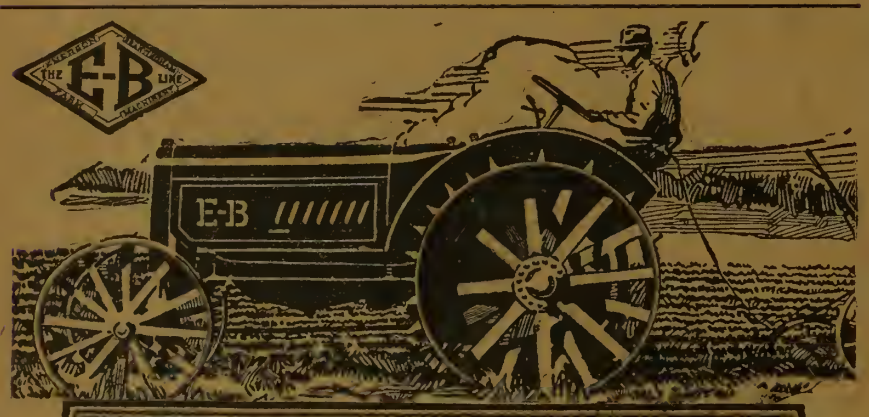

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Easy to handle and easy to pull. E-B Quick Detachable Shares make furrows turn with less kerosene cost. Sharp-share plowing readily done when shares are so quickly applied and removed. Sharp shares keep channels of moisture circulation open—better soil conditions.

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When writing advertisers, mention The Cultivator.

No-Yard House

By Jean A. Koethen

IT was a Cultivator reader that started me on my quest. He called up one evening to ask if I would not publish the measurements of the Corning house, an Eastern no-yard house which was much advertised some ten years ago. I reminded him of the Charles Weeks house which is being tried by some California poultrymen, but that would not do, the units were too small, and so I promised to find the dimensions of either the Corning house or some other just as good and better adapted, perhaps, to California conditions. It was this promise that sent me out one fine morning with my camera to find a no-yard house.

Hardly half an hour's trolley ride from my own door I found it, and in a place where I would not have thought of looking except for a chance inquiry of another poultryman.

When Mr. and Mrs. W. L. Hawes bought their home four years ago in one of the lively poultry communities of the San Fernando Valley and began to plan their chicken houses, they looked about for some means of eliminating the small, too often filthy yards which, while they do give hens a chance to sun themselves, provide no feed and little exercise. "If we can devise a house," they said, "which will let in air and sunshine and give reasonable room for exercise, we can do without yards." The outcome of this reasoning and the study which followed it was a system of no-yard houses which has now been in operation four years, and Mr. and Mrs Hawes are so far from abandoning it that they are planning as many more on their acre of ground next year.

Mr. Hawes' no-yard system consists of a series of units built into one long house. These units are entirely separated from each other by partitions and might be built singly or any number together according to the convenience of the owner. Mr. Hawes has nine, housing, when filled to capacity, from 1200 to 1300 hens. Four of these are now used for chicks, which are never out of doors from the day they go under the hovers till as old hens they are sent to market.

Each individual house or unit, is 16 feet wide and 24 feet long, six feet high in front and back and eight feet high at the ridge pole which is in the center. The front, which is toward the south, is entirely open, except for about 18 inches at the floor, but has an adjustable canvas curtain, on a frame which may be used in very hot or very stormy weather and which covers most of the front. In the rear is another curtain or door, extending three and one-half feet from the ground. "As hens are ordinarily yarded," said Mr. Hawes, "the owner is up against the proposition of providing each house with two yards, one of which is kept planted to green stuff, or changing the location of his houses when the ground becomes too full of filth for the health of the birds. This method is more simple, and the hens are perfectly healthy."

The chicks are brooded in four of the houses they will afterward occupy as layers, 1000 in each house. Mr Hawes keeps no male birds but buys his chicks by the thousand when they are a day old. They are brooded under eight-foot hovers similar to those used for electric brooders, but Mr. Hawes does not use electricity. His brooders are each heated by a gas burner, exactly like that in a range This burner is placed under the middle of the hover, surrounded by a fence of coarse wire to keep the chicks from the flame and covered with zinc. Until the chicks are brooder broke they are kept under the wooden hover by a strip of fine wire. Gradually, as they learn where to find warmth, they are allowed the freedom of the house As soon as they no longer need heat at night they find their places on the eaves, which may be removed in hot weather. This door is directly behind the roosts which are three feet from the floor and arranged one above the other on a steep slant. With the front entirely open and this rear door removed the hens get all the air there is on a hot day. They also get the sun in early morning and late afternoon and there are no dark corners for vermin to hide in. The floor is covered to the depth of a foot with coarse hillside sand, which is swept once in two weeks and entirely renewed every year. This frequent sweeping keeps the floor cleaner than an ordinary yard ever is, and once a year all hens have absolutely clean slatted roosts underneath the regular roosts, and without any teaching at all they go on when they are ready from the slats to the adult roosts.

The house is covered with tarred roofing paper, and fully equipped with hoppers, automatic drinking fountains and electric lights, and the hens are so comfortable in it, and so accustomed to indoor life that they cannot be coaxed out. When they have to be moved from one house to another it is sometimes necessary to carry them because they are unwilling to go outside.

Each unit is designed for 150 hens This allows a little less than the regulation three square feet per hen but as long as the house is kept perfectly clean small exercising space does not seem to matter.

Contented Hens
They are healthy and productive in spite of close confinement.

Poultry Queries---Conducted by Jean A. Koethen

Broody Hens

How can I keep my hens from trying to sit the second time?—Subscriber, Marysville.

I wish I knew how to keep these heavy hens from going broody too often. Some experts say it is a question of feeding, that feed that makes the hens too fat increases their desire to sit, but most poultrymen believe it is entirely a matter of breeding. If you breed from broody hens you will always have broody hens

If you pick out one or two hens that rarely or never go broody and hatch their eggs and theirs only, taking special care to make sure that your males are always the sons of non-sitters, you will find the broodiness in your flock decreasing. Several well known breeders are having good success in breeding the broodiness out of their Rhode Island Reds in this way.

Chicken Pox

Two years ago I bought 50 White Leghorn pullets and two weeks after they broke out with a terrible disease. Thought it was roup. Their eyes swelled shut, they sneezed and kept shaking their heads constantly with a rattling sound and had a very bad odor. Almost every pullet died. Tried to raise a few chicks last year but they took the same disease and died when a few weeks old. So this year I bought eggs to hatch and now have a nice bunch of chickens but some of them have a slight touch of that disease. They also gap quite often. I tried everything I knew of two years ago but to no avail. The chicks all eat heartily so far, but notice they have small blisters around eyes. I keep bluestone in drinking water and they have outside range all the time?—Subscriber, Glendora.

The small blisters around the eyes of your chickens this year show that they have chicken pox. Two years ago it was apparently roup, unless there were similar blisters, which you do not mention. Chicken pox and roup are so much alike in some of their symptoms that a number of experts consider them different forms of the same disease. Roup is characterized by all the symptoms of a bad cold, and these often occur in chicken pox. Now that you know you have had chicken pox in the flock you will need to disinfect very thoroughly or your birds will have it every year. Dr. Beach of the state university recommends only one treatment for chicken pox, that is, removing the scabs and touching the sores with tincture of iodine on the tip of a feather or small brush. To prevent the spread of the disease through the flock vaccination has been successfully practiced in many large flocks throughout the state. If you wish to vaccinate the birds that have not already contracted the disease, write immediately to Agricultural Experiment Station, University of California, Berkeley, California, asking for the number of doses you require and directions for using. I believe the cost is around ten cents per bird. In addition to the use of iodine on the affected birds you might try putting a little common sulphur in the dry mash, one pound of sulphur to 50 pounds of mash. Dr. Sanborn. recommends this treatment and this only. Whatever you do the disease will run its course, but treatment with either sulphur or iodine or both may keep it from becoming serious.

To Keep Off Lice

During the year I dust the straw in the nest boxes with a lice powder that permeates the egg shell and gives the eggs a flavor that is not at all pleasing and I will thank you to advise of an effective lice powder for nests that will not give the egg a distasteful flavor.—Subscriber, Reno, Nevada.

It is better to dust the hen than the straw in her nest, but the straw should all be removed from time to time and the inside of the nest box painted with a solution of crude carbolic acid in kerosene (one part carbolic to ten of kerosene) or with one of the many coal tar preparations (Carbolineum, Cresol, Zenoleum, etc.) Buhach insect powder sprinkled in the straw will not flavor the eggs, but neither will it keep the hen free from lice unless she is dusted with a good strong louse powder occasionally. Some experiment stations prefer blue ointment to powder for keeping their hens free from lice. This ointment can be purchased at any drug store but is too strong to use without diluting. Mix it with an equal quantity of vaseline, and taking a very little on the end of your finger rub it on each hen around the vent, where lice always breed. If you prefer a powder you might try Devil's Dust, which is very strong in tobacco. Used on the hen alone it will not flavor the eggs, and I doubt if it would flavor them if it were sprinkled in the nest.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, August 1, 1919. Report for the Thirty-ninth Week ending July 31:

In the 39th week of the contest at Storrs the total production was 3314 or a yield of 47.3 per cent. This is an increase over the preceding week of 140 eggs. Again the White Leghorns continue to outlay the other breeds and walk off with the honors. Pen 57, owned by Kirkup Brothers, Mattituck, New York, Pen 92, owned by Rapp's Leghorn Farm, Atlantic Highlands, New York, and Pen 64 entered by P. G. Platt, Wallingford, Pennsylvania, tied for first place, with a production of 54 eggs each.

The following birds are the best individual layers in their respective variety:

Barred Rocks, West Hampton Beach, Connecticut, 169 eggs.

White Rocks, Hollis, New Haven, 176 eggs.

White Wyandottes, Langford, British Columbia, 170 eggs.

Rhode Island Reds, Bridgeton, Rhode Island, 187 eggs.

Rhode Island Whites, Southport, Connecticut, 164 eggs.

Black Rhinelanders, Burlingame, California, 155 eggs.

Blue Andalusian, Congus, New York, 138 eggs.

Oregon, Corvallis, Oregon, 155 eggs.

White Leghorn, South Glastonbury, Connecticut, 197 eggs.

August finds the poultryman doing two things to keep his flocks average in egg production. They are, first and foremost, spraying for mites, and at the last of the month culling out the early moulters and non-layers. The poultry mites, commonly called red mites, probably do more to cut down the egg yield in August than in any other month. During the day time they hide in the cracks and crevices under the roosts and in the nest, and at night when the hen is roosting they crawl out along the roost and on the hen. This parasite does its damage by sucking the blood and gives a characteristic odor to the house when present in large numbers. Hens and chickens show the effect by reducing the egg yield and acting dopy and pale about the head. Most of the coal tar disinfectants are effective to a certain extent, but carbolineum is by far the best. Usually one application a year is enough to rid the house of the pest.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francais, 1512; Laurel Poultry Farm, 1471; Howard R. Sullivan, 1335.

White Wyandottes

Curtis L. Allen, 1331; W. Bradley, 1288; Merrythought Farm, 1149.

Rhode Island Reds

Laurel Hill Farm, 1448; Deer Brook Poultry Farm, 1321; Chas. H. Lane, 1304.

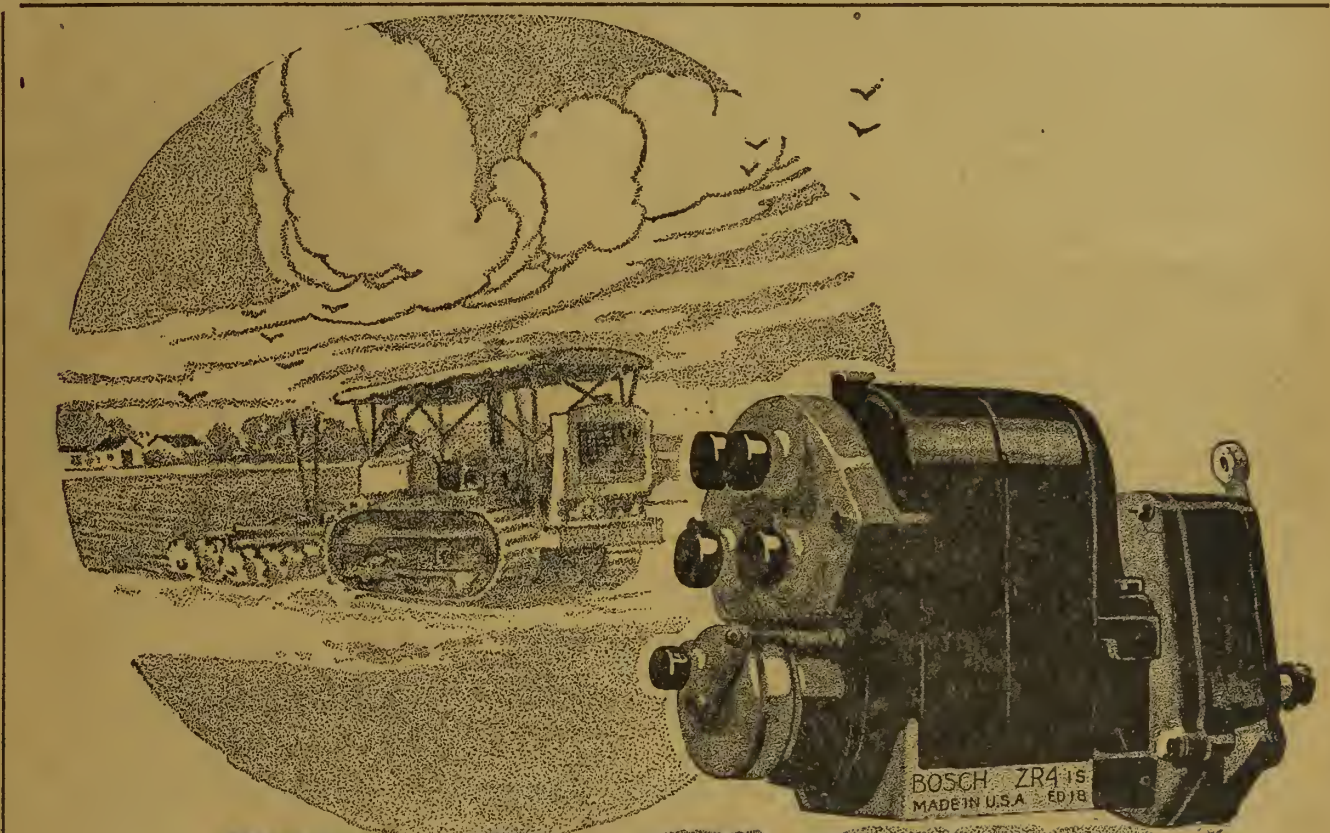
White Leghorns

Hilltop Poultry Yards, 1422; A. P. Robinson, 1363; James O. Lefevre, 1359.

Miscellaneous

Chickatawbut Farms (White Rocks), 1282; Pequot Poultry Farm (Rhode Island Whites), 1260; Albert T. Lenzen, 1101.

Make a business of selecting your hens as you would the selecting of good seed corn. Even a pen of four to ten good laying yearling hens, some that have been persistent layers, will start you right.



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The Greatest Dual Farm Service

THERE is one combination that has stood supreme through years of Supreme Service—a properly designed gas engine and Bosch High Tension Magneto Ignition. Under the strain of farm service Magneto Ignition is a necessity. And no magneto can approach the performance record of the Bosch Magneto.

Rip Roaring Bosch Sparks on your tractor—gas engine—truck or automobile, will cut your operating costs, increase the dependability of your engine, and get more power from any fuel.

When you place your order for any piece of gas engine driven machinery be sure it's Bosch Magneto Equipt.

If your engine is not now Bosch Equipt, get in touch with the nearest Bosch Service Station, Distributor or Dealer. He has a Bosch Magneto ready for you now.

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Fisk Cord Tires are built just that way. Big, good looking, with extra tough tread, they give you easy riding, save gas and—most important of all—deliver the miles in excess of what you buy.

That saves you real money.

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SEP 5 1919

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — August 23, 1919 — No. 8

Five Little Pigs Go to Market

What can a man Learn from Looking at a Tractor in a Tent

IF you have ever been to a tractor demonstration, you probably know the earnest way some salesmen have of taking you into a tent and pointing out all the fine points of the tractor they are trying to sell.

They will show you its engine and its wheels and its gears and its clutches, and tell you why they are better than those of any other tractor on the market.

Now, the intelligent farmer, when he goes to look at a tractor, wants to be shown by the tractor itself.

For eight years the G O Tractor has been showing farmers all over the country just what they wanted to know. It has shown them that it can do anything they want it to, and do it economically, and keep on doing it.

There is nothing "eye-filling" about the G O Tractor. It is a four-wheel, four-cylinder tractor—the simplest and most practical construction known. There is no loss of traction due to the shifting of weight to the wheels of the implement. Its pull increases as the traction increases, because the drawbar is free-swaying — not rigid — eliminating all side draft and making it safe on hills.

The G O driving mechanism is the biggest advance in tractor engineering which the industry has seen. It gives six speeds forward and six reverse—a right speed for plowing in any sort of soil; a right speed at the belt pulley for any kind of machine. It is so easily controlled that even a child can operate it. All gears are enclosed in a dust-proof oil bath, adding years to their life.

The facts about the G O Tractor are open to anyone who is looking for sound, common horse-sense—not features or talking points. You may be interested, also, in knowing more about the company behind the G O Tractor—its guarantee and its idea of what constitutes real service. A post card today will put you under no obligation.

The General Ordnance Company
Tractor Division

Western Sales Office and Factory:
CEDAR RAPIDS, IA.

Executive and Eastern Sales Office:
TWO WEST 43rd STREET, NEW YORK

Eastern Factory:
DERBY, CONNECTICUT

California Cultivator

Vol. LIII, No. 8 | Los Angeles, August 23, 1919 | One Dollar Yearly

For a Fall Cover Crop

By William M. Bristol

NEARLY every orchardist in California concedes that a cover crop is a good thing under certain conditions and circumstances.

Speaking for myself I may say that for many years I have been fully persuaded that an abundance of organic matter in the soil is the chief need of the fruit grower wherever his orchard happens to be.

I know there are some orchardists who say it is cheaper to buy organic matter than to grow it, and that may be true if they are near a source of supply and are also short of water for irrigation. In my own case, however, on the lofty East Highlands Mesa in San Bernardino County, these conditions are reversed. A long haul and a high lift are necessary to get any kind of fertilizer onto the land, but an abundance of water, pumped out of a prehistoric earthquake crack, the San Andreas rift, is available for the production of cover crops even in summer time.

I might as well confess that I have tried the whole list of plants recommended for soil rejuvenation, excepting perhaps, the pellionia rhodocanahiana and a few others whose names I could not pronounce or had forgotten when I reached the seed store. I have been all the way from Medicago sativa to Melilotus indica and alba. I have harbored Lathyrus silvestris and have given asylum to the whole lupin family. In short, in a quest covering a quarter of a century, it seems to me that I have forgiven and forgotten several families and orders of plants. I am now consorting with the common Black-eye bean, or pea, as it is sometimes called, presumably because it belongs to the so-called cow pea family.

A summer cover crop draws heavily upon the available nitrogen of the soil. Once I sowed an orchard to alfalfa. There was a good setting of oranges, and the packing house people reported that they were ten per cent heavier than the other oranges that came into the house, obviously because the alfalfa ate up some of the nitrogen the oranges would have used. To be sure the flavor and character of the fruit was fine, but the trees became quite yellow by fall, and I feared that next year's crop would be short if the alfalfa were not plowed under.

There has been but little objection to winter cover crops in the orchard; but there has been much clamor for something which would grow during the cooler months and be ready to turn under while the ground is yet soft from spring rains. No plant so far tried seems to meet this requirement. In experimenting last year with the Black-eye bean as a summer cover crop I stumbled upon the fall cover crop idea. My orchard is on a steep slope, rising 250 feet in the half mile of its extent. This means that the summer cloudburst, which comes about once in a half dozen years and causes serious damage in the twinkling of an eye, must always be borne in mind. If the orchard were all in cover crop there would be no danger from the cloudburst, just as there is no danger from the heavy winter rains because of the winter cover crop.

The facts I have recited will serve to show how I was led up to the idea of sowing a summer cover crop in alternate lands or spaces in the orchard. All the land is under cultivation when the trees are blooming and the fruit is setting in the spring. During the first half of June last year I sowed the Black-eyes in alternate lands, intending to sow melilotus indica in the other lands in the fall. Incidentally these alternate lands in Black-eyes would have safeguarded the whole orchard had the August cloudburst come. The first week in September the Black-eyes had matured most of their seed and were disked under, the ground being irrigated just before disking. In a few days there sprang up a thick and vigorous stand of young Black-eyes; and this crop of young Black-eyes at once suggested to me the sowing of Black-eyes the first of each September, to be grown as a fall cover crop and to be left standing until time for spring plowing.

And that is the reason why, after running the gamut of cover crops, I am now consorting with the common Black-eye. I do not pretend that it would be a success except in elevated locations where the nights are relatively warm and the autumns are long. Although it does not grow as tall as the cow pea proper it matures more quickly and six weeks of warm weather after planting will insure a substantial crop of humus forming material. In answer to the objection that a summer cover crop robs the soil of nitrogen needed for the orange crop it may be said that the orange crop is practically assured by September 1, the date on which I suggest sowing the Black-eyes.

At the time I was getting the Black-eye idea last fall a movement was under way for popularizing the horse bean as a fall cover crop. I believe the experiments were not wholly successful in getting a stand.

The seed cost seven cents per pound and as the individual seeds are very large the expense for seeding was a considerable item. The price of Black-eyes is now about four cents per pound and there are several times as many of them in a pound as of the horse beans. The philosophy of one planter whose horse beans failed to come up was: "Oh, well, the beans were so large that I got a lot of fertilizer out of them anyhow." But the loss was out of proportion to the gain.

One-half of my orchard (alternate lands) is now in Black-eyes. During the last week in August the other lands will be sowed to them. Of course the land is furrowed for irrigation immediately after planting. Anyone having a good well and pump or other source of water will find irrigation as cheap as cultivation. It is a case, perhaps, of pumping plant versus cultivator, with this consideration in favor of the former, to-wit: That it is putting humus into the soil while the latter is not.

I have said that abundant water is a condition necessary to the growth of a summer cover crop. It should be added that an abundance of humus in the soil is another requisite in order that both the fruit crop and the cover crop may find sufficient nitrogen. I do not question the statement that leguminous plants can and do take nitrogen from the air; but I believe that they prefer to take it from the soil, even robbing their neighbors if necessary. It is a Scriptural precept that "to him that hath shall be given"; and this is eminently true in the production of a cover crop.

Throughout the orange growing districts of California today there are orchards that look lean and hungry Their owners have tried to see how little fertilizer they could get along with. The auto has had its full quota of gas and oil, perhaps. There has been no limit put on family expenses. Social appearances must be maintained at any cost. In short, there are many orange growers who, unconsciously, have been eating up their capital by permitting the depletion of their humus account in the soil—and Mother Earth is now handing them a statement that their account with her is overdrawn. What would be said of a furniture manufacturer who would permit his supply of lumber to give out while his machines were running and his employes were on full pay and expense; or of the dairyman who let his cows go hungry on the plea of economy? These people plan to have their machines and their employes and their cows convert as much raw material as possible into marketable products. Should not the orange grower use the same logic?

In conclusion—and my argument is based upon both experience and observation—I would say: Buy your nitrogen in the bulkiest possible form for the sake of the resulting humus. Buy all the stable manure or other organic matter you can find money to pay for. And in addition grow all the cover crop you have fertilizer and water for in order that your soil may be leavened and lightened and restored to that approximately virgin condition necessary to put new growth on your trees and new zest in your faith in the orange industry.

Winter Cover Crop and Frost

By E. L. Koethen

AFTER looking over the field it occurs to me that some statement covering the extra hazard incurred by the use of a cover crop in winter in frosty locations is one of the livest questions. Some one thinks he has seen that orchards under cover crop were more liable to frost injury than those under clean culture and has carefully disseminated his observations. The result is that many others think they have seen the same thing. The writer thinks perhaps the observation is correct but that the danger may be avoided by the simple device of irrigating more freely at the time of possible visits of the frost. This can usually be done in the late fall and winter when there is abundance of water to be had.

It is a well known fact that freezing water or vapor gives off latent heat, that a white frost is less dangerous than a "black" frost, that freezing water in the potato cellar will protect the potatoes. It only requires a little observation to come to the conclusion that in wet cover crop orchards white frosts occur, that the air is so dry under our frost conditions that a white frost cannot occur in a dry orchard on account of the extreme dryness of the atmosphere. It is true we do have slight white frosts all through the winter but our heavy freezes are accompanied by dry north winds.

The situation is a serious one as many are being deterred from planting cover crops this season for fear of the danger from frost. We are convinced that the cover crop has done more to break up the tendency to irrigation hard pan and clear mottle leaf from orchards than any other thing. It would be a pity if such a good practice should be abandoned under a misapprehension.

Our own observation is that where the ground is kept quite wet during the months of November, December and January the danger from frost injury to trees and fruit is diminished. On the other hand, if allowed to become dry and frosts occur, we believe the green surface may expedite radiation of heat enough to endanger the crop. Some years ago the writer made some temperature tests in the orchard during February, the object being primarily to determine if the soil was warm enough during frosty weather to encourage nitrification. It happened to be a steady siege of frosty nights, and we found that invariably the air and the soil were warmer under the cover crop than it was out in the open orchard. Our conclusion from this is that the cover crop becomes a reservoir of warmth during such times. It is a well established practice in many groves to arrange to

(Continued on Page 213)

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Saturday, August 23, 1919

OUR ADVERTISERS RELIABLE
We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

When we that are gray-heads were boys our 'rithmetic lesson gave us most satisfactory information as to how to figure up the cost of nine pounds of eight penny nails at five cents a pound or ten yards of calico at four cents, but never how to figure out balanced rations for pig or cow, or any other farm problem which would add to the efficiency of a farm helper or farm owner. The only information needed to conduct agricultural practices of those days was brought out by the question: "How did dad do it?" Today it's different, and the youngsters are being informed as to problems of agriculture and, better, as to best practices. This is being done not only by a series of valuable textbooks but by actual field work. The effectiveness of this education is shown by the demand for competent instructors which is far exceeding the supply. But they are coming, and here and there in various of our localities the high schools are giving proofs that the country is securing better methods. We are glad to give on fifth page of this issue information as to methods which are being followed in Arizona; also to give more graphic evidence of the work of Arizona boys in the illustrations on cover and in the article mentioned.

Tom, Tom was a farmer's son,
Bought a pig and home did run.
He fed him according to latest rule
As he was taught by the pig club's school.

GOT YOUR NEW HEADLIGHT?

The days of grace allowed under the headlight law have expired and every motorist who is now riding with undimmed lights is subject to arrest. It's a matter of only three or four dollars—and it may save a life.

ALMONDS

Manager Tucker of the California Almond Growers' Exchange writes that the almond crop for 1919 will be about one-third greater than that of last year and will be by far the heaviest tonnage yet produced in this state. The best part of it is that the Exchange has sold practically every pound of nuts it will control and at a price which it itself will name. Its first delivery was made August 6 and the first car load of almonds left for New York City August 13. The car contained 500 bags of Nonpareils.

Here is proof of the value of cooperation. The grower has not waited for the speculator to set his prices; he is delivering the goods and still holds the reins in his own hands.

A FRUIT GROWING STATE

The Cultivator will give next week data furnished by the bureau of crop estimates as to the output of pears and peaches of the United States, and this is worth most careful reading by California fruit growers. We often refer to California's greatness as a fruit grower and glibly roll off the claim that we are by far the greatest fruit state in the Union, but we believe we seldom stop to survey our real position. For instance, in peaches it is estimated that this year's output of the United States will be 29,784,000 bushels. Of this California will produce considerably more than one-half, or to give exact estimate, 16,060,000 bushels.

Georgia is the second great producing state, but it produces only 2,964,000 bushels. Third in the list is Arkansas with 1,444,000 bushels.

California is the only state which is credited with 100 per cent condition of its peach crop. Some of the Middle West states show almost total failure, for instance Indiana has a 12 per cent and Ohio a 20 per cent of normal crop condition. These abnormally low conditions are seen to be more serious when it is considered that they are better than at the same period last year. Some of the states show total failure last year in peaches.

In pears California produces a still greater percentage of the supply of the country, especially a greater percentage of the fresh shipping fruit. With peaches 80 per cent is either canned or dried in the state, while with pears by far the greater proportion is shipped fresh.

SPENDING $40,000,000

The state highway commission now has before it the duty of spending $40,000,000 of the people's money and giving them somewhat more, if possible, than $40,000,000 worth of state highways.

The first embarrassment which faces the commission is the fact that the people, after supplying the $40,000,000 very freely, are now demanding immediate delivery of the goods. A perfectly legitimate and a perfectly proper demand, but at the same time if the $40,000,000 is to bring to the people its full value in good roads it will take time to set in motion all the wheels of legal and other machinery, and still more time to set in motion the wheels of material machinery to move all the great amount of supplies necessary to construct these roads in various sections of the state from Modoc to San Diego. If this $40,000,000 is to be spent wisely it will require months, possibly years of careful management. Let us not all be too demanding as to delivery.

CODE OF HONOR

Dean Van Norman, in his address to the recent graduating class of the University Farm School at Davis, suggested the following code of honor: for the farmers of California.

"That the land we cultivate and the flocks we feed shall be more fertile and more productive because they have been ours, aside from any wealth they may have given us.

"That we give freely to our neighbor of the fruits of our experience and observation, for agriculture is not a secret to be locked up from our competitors.

"That, as the products of agriculture are vital and essential to the life of society, so is the constructive thought and effort of man on the land necessary to solution of great problems confronting this nation. And so, the gift of ourselves to the community is as vital as the product of our lands."

CUTTING DOWN EXPENSES

Who saved the cause of the Allies in the war and who is to blame for the high cost of living are two pertinent questions sufficient to start a corner grocery discussion of great earnestness. We have no answers prepared that are intended to settle either of these questions conclusively and do not wish to be called in as a judge when the debates are pulled off, but perhaps one of the best suggestions as to who is to blame for the high cost is that the consumer is the guilty party. He is rather insistent that he likes 65 and 70 cent bacon, $12 shoes and $75 suits, and so long as he is the retailer will be inconsiderate enough to meet his demands.

There is little opportunity for the small wage earner living in the city to practice more serious economies than he has been practicing. Such people not only suffer great inconvenience but we fear even actual discomfort. What little advantage there is is on the side of the producer, that is, the family living on its own little ranch has opportunities of making savings, with perhaps less demand for high cost articles. In making suggestions for little home economies Clarence Ousley, assistant secretary of agriculture, has the following hint for home makers:

"Home canning, drying, brining, preserving and pickling are big factors in cutting down household expenses, and, in my opinion, information concerning right methods of conserving food will be sought by housewives this summer and fall more than ever before. The newspapers of this country can give this service.

"Food and time are too expensive nowadays to waste fruit and vegetables by wrong methods of canning.

"Thrift in the home is the foundation of national prosperity and independence. Help increase it."

The second time President Wilson has vetoed the bill passed by both house and senate repealing the daylight saving law. The house has now passed the bill over the president's veto. It is predicted the senate will pass the bill by the required two-thirds within a few days.

RE-EDUCATION

Disabled ex-service men are being taken care of by Uncle Sam or, rather, are being given opportunity for re-education which will enable them to take care of themselves. The board for vocational education is urging every disabled ex-service man to get in touch with the board which is located at 200 New Jersey Avenue N. W., Washington. Many of these disabled men have been discharged from the service without knowledge of this opportunity which the federal government is offering, and the board is now endeavoring to reach them wherever they may be, and where their disability is such that they cannot follow their old callings they are to be given opportunity for an education which will fit them for the new work. This is not a charity; it is not paternalism at all; it is simply fitting the young men to care for themselves.

WORKING THE PRODUCERS

The farmer's business is a home producing, yet the farmer who neglects to market neglects the greater half of his business and runs the chance of suffering a hundred per cent loss on his year's endeavor. But if he goes to market, "gets nervous" and lets his product go at prices which not only cause loss and disappointment to him but injury to others?

Here is a quotation from the market report in a daily paper. It is only a short paragraph from a column of discussion of the day's transactions but it is characteristic of every day on every market:

"Activity featured the majority of the dealings on the floor of the local produce exchange yesterday and all lines of produce moved rapidly on a slightly lower market, owing to the active competition between the wholesalers and the farmers from the local producing sections. The farmers appeared on the market early and in view of the heavy late arrivals they became nervous and moved their commodities as quickly as possible at very low levels. This had a strong tendency to hammer prices down as the large retail dealers and the local shippers took advantage of the nervous condition on the floor and smashed prices during the early part of the session. During the latter part of the afternoon when the farmers had practically sold out all their products prices began to strengthen as the wholesalers tightened up and refused to sell at the low prices obtained at the opening of the call."

The producer of potatoes or cabbage or fruit helplessly throws up his hands and says: "What can we do? We can't stay all day long disposing of our produce when the coming crop call for our oversight on the ranch."

Our only suggestion, the only effective one we can think of, and one which we have often given, is expressed in the one word, "cooperate." In efficient cooperation where the cooperators are big enough to secure a thoroughly efficient man to do the marketing the producer continues to produce, continues to do the work for which he is fitted and entrusts the barterling to one trained in that service. The fact that a certain commodity is quoted at a certain price on any day in any market is no proof whatever that the producer will receive the price. Trafficking in farm products, especially perishables, becomes more and more complicated every year. It needs the trained manager who is able to remain with the buyer until the "nervousness" which sometimes affects the trade is on the side of the buyer rather than that of the producer. The producer may control if he will.

Arizona Pig Club Boys Bring Home the Bacon

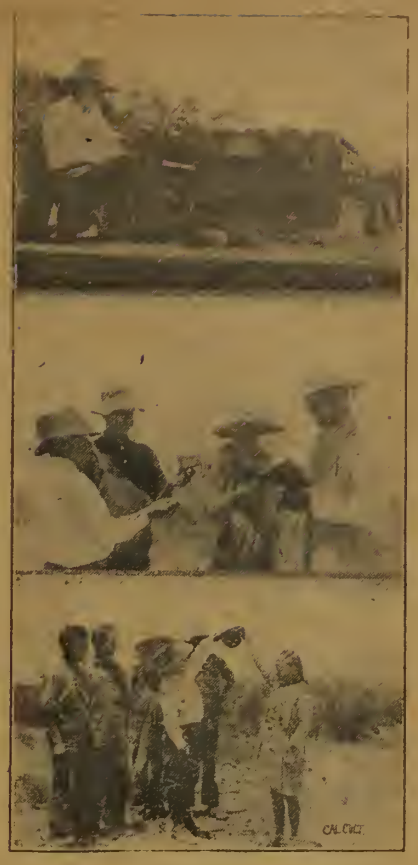
ARIZONA schools have live wire youngsters who have learned some lessons as to the value of pure bred hogs. They seem to have absorbed the idea that a pure bred makes lard, bacon and hams of more uniform quality and with more profit to the feeder and more certainty of winning the prize than does the ordinary scrub "just hawg." By prizes we mean in this instance cash prizes which were offered to the boys of Arizona if they would get busy and grow hogs and grow them right, but by prizes we also mean the prize of coin of which this tangible prize is but the visible evidence. This latter mentioned prize is that which comes to the producer if he takes to market hogs so uniformly high graded that they command a premium above top quotations. This is no dream, for incidents are plenty in which even the "packer" has come across with prices above the day's quotation. The boys who entered into the contest now referred to are members o fthe Davidson School Boys and Girls United Clubs. This school is in the Bingingham district of Tucson. The leader is Miss Pauline Naillon. State Club Leader Park writes regarding the achievements of these youngsters:

"All of the boys purchased registered Duroc gilts two months of age at a cost of $12.72 each, shipping them in from the Salt River Valley, one of the richest hog producing sections of the state.

"Reese Evans, aged 15, was responsible for interesting the other boys. Reese purchased a registered Duroc last year and swept the field at the Southern Arizona Fair at Tucson. Furthermore, a conservative value of $60 was placed on the sow at eight months of age.

"The boys' pig clubs are proving strong factors in building up and making substantial the swine industry of the state.

"The bankers of the state are fully alive to the possibilities of the work. Five hundred dollars has been donated for prizes, and loaning money to the boys is now recognized as good, sound business."



Human Interest in a Pig Story

Upper picture shows Reese Evans leaving the railroad station with the pigs.

Middle picture, boys coming across with the money. Every lad paid cash right on the spot.

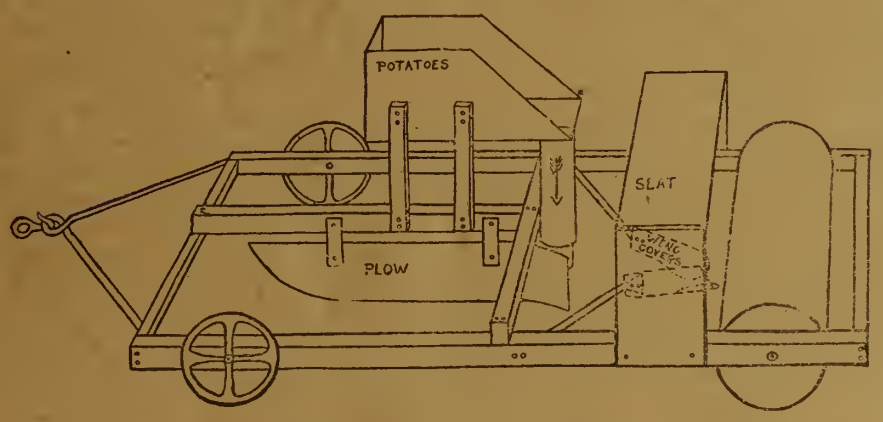
Lower picture—drawing for the pigs. Another scene appears on the cover of this issue. It is not a picture of the little pigs going to market but of the little pigs going home from the market to make hogs of themselves.

A Home-Made Potato Planter

By Edward C. Hawley

HERE'S a potato planter any farmer can make in less than a day at very small expense. Almost any scrap lumber pile on the average farm will furnish most of the material to make it. With it and a team of horses two people can plant three to five acres in a day. It does the whole operation, i. e. makes the furrow, drops the potatoes, covers, also tamps or rolls the ground. A woman can drop the potatoes as well as a man.

Have your blacksmith make you a plow as shown in the drawing, or make it yourself if you have a shop; also two fenders or wings for covering have to be made of iron. Two by three inch or two by four inch scantlings are all that's necessary for making the frame. A box or contalner for the potatoes, and a seat for the operators must be provided. A piece of four-inch stove pipe, or galvanized pipe which is better since it won't rust, must reach from the container to back of the plow for dropping the potatoes through. Don't use a tapering pipe, for large pieces of potatoes sometimes lodge and you're likely to go quite a distance before you discover that the pipe is filling up instead of letting the pieces through. For wheels, those off an old cultivator or plow will do, or you can make a sled arrangement. However, wheels make it much easier on the horses and are more satisfactory in every way. For the roller we used a piece cut from a sycamore log; a neighbor who made a planter used the roller off an old windlass. It is well to arrange fastening the plow to the frame so it can be adjusted for deep or shallow planting, by having extra bolt holes through the iron straps. A short chain can be fastened to drag behind to mark for the row, and if you care to leave your planted rows marked a piece of old hose nailed around the roller directly in line with the plow will do. A clapper to indicate the distance to drop the potatoes can be made by nailing a piece of heavy sheet iron on the frame back of the roller so that an inch or two projects ahead, then nail some spikes, at the required distance apart for planting, in the roller, leaving about an inch out to strike sheet iron clapper.



Outline of Practical Potato Planter.

Detailed drawing of potato planter from sketch made by Edward C. Hawley. Planter should be three feet wide and six feet long; the roller about 12 inches in diameter; the plow about three feet long; the hopper amply large enough to hold a pail and a half of cut potatoes—about two cubic feet.

To operate, the teamster must drive slowly, and very straight. After planting three or four rows the dropper begins to get the knack of it. It's a good plan to pick up three or four pieces of potato with one hand while you're dropping with the other.

Any farmer who expects to plant one or more acres of potatoes every year should make a planter like this; one day's use of it will more than pay for it. On a small farm where it would be putting too much money into equipment to buy a manufactured one it is just the thing, and it will "fill the bill" perfectly on a large potato farm if for any reason the farmer cannot afford to buy a factory made planter.

Proper Maturing of Avocados

By Prof. Ira J. Condit at Pasadena Meeting of California Avocado Association

THE history of fruit marketing in California abounds with accounts of the sales or attempted sales of early season fruits in order to benefit from high prices. This is the time of the year when we read in the press of the fancy prices paid in Chicago, Boston, or New York for the first box of cherries from Vacaville, apricots from Redbank, or figs from Coachella. The saying that "most people eat with their eyes" is true with regard to a number of California fruits, but we must all admit that however attractive early apricots, peaches, or cherries may appear to the eye, their flavor and quality are as a rule decidedly disappointing to the taste. California Navel oranges may be picked when green, sweated to produce color, and sold at fancy prices in the Eastern market, but the consumer's appetite for more is to say the least, certainly not stimulated. The marketing of olives for ripe pickles reached such an unsatisfactory state recently that a maturity standard for this fruit has been established. The marketing of immature avocados in California has been practiced for several years, and it seems at times unfair to censure the grower who handed over the fruit to the purchaser at 50 cents, 75 cents or $1 each rather than leave it on the tree to suffer possible injury or total loss from wind, frost, or theft. In the discussion of this subject therefore it seems best to treat it under the following headings:

The need of a maturity standard for the avocado.

Maturity standards for other fruits.

The possibility of finding such a standard for the avocado and of enforcing it.

Is there a need of a maturity standard for the avocado? According to the opinions expressed by experienced growers it would seem that there is. Some of these expressions are as follows:

"My personal opinion is that any one offering immature avocados, while knowing them to be such, should be censured in the highest terms. It seems to me that, in the inception of the avocado industry, when not one person in 1000 has ever tasted the fruit, a special safeguard should be thrown around the quality of those offered for sale."

While we will all agree that a half or three-fourths grown avocado will soften and become edible even though not very palatable, we must admit that the same avocado would be incomparably more satisfactory if allowed to reach a more mature state on the tree. Note I say a "more mature state"; if left on the tree too long the flavor and quality is very likely to be impaired. An increase of from 26 to 28 per cent in fat content has been accompanied with a much poorer quality of fruit.

Analysis of the fruit at Berkeley certainly show that the oil increases with the ripening but the correlation between the percentage of oil and the

Continued on Page 213.

Agricultural News Notes of the Pacific Coast

Northern California

The Los Mollnos farm bureau will meet August 25.

Arbuckie, Colusa County, is harvesting its almonds.

California's rice crop will be worth $33,000,000 this year.

Callfornia's auto vehlcles have increased 68,359 during the past year.

The Solano County farm bureau wants a market director, chiefly to manage stock sales.

The Wyandotte farm center of Butte County is mapping out a campaign against cltrus blast.

Cloverdale, Sonoma County, recently shipped 1500 head of sheep and 51 head of cattle on one day.

The Napa County fair will be held at Napa October 2-5. Nathan F. Coombs is secretary-treasurer.

Farm Adviser Jones of Eldorado County is securing lime for members of the farm bureau at $4.00 a ton.

Contra Costa County will hold a fair at Martlnez this fall. Clark Farnum has been selected secretary-manager.

The University Farm at Davis will exhibit at the coming state fair a calf for which the Unlversity refused $3000.

Tehama County farm bureau meetings: Richfield, August 18; Corning, 20; Los Molinos, 25; directors meeting, 22.

Veterinarians are busy in the Willows section of Glenn County vaccinating cattle, hogs and sheep against anthrax.

The women of the Sacramento County farm bureau are talking of getting a permanent home demonstration agent.

Glenn County's farm bureau meetings: Larkin, 22; directors meeting, 23; Elk Creek, 27, 2 p. m.; Grapevine, 27, 8 p. m.

The farmers of Del Norte County have organized and will affiliate with the organizations of the Humboldt County farm bureau.

The first delivery of almonds from the Durham district of Butte County was made to the warehouse of the exchange at Chico, August 6.

There will be meetings of the Glenn County farm bureau at Larkin, August 23; directors meeting, 27; Elk Creek, 27, 2:00 p. m.; Grape Vine, 27, 8:00 p. m.

A thousand tons of ice are used daily at the Roseville plant of the Southern Pacific, icing California fruits and vegetables on the way East.

Members of the Butte County farm bureau have voted to hold a citrus day in the near future, possibly at the time of the horticultural convention at Oroville.

Commissioner Brosius and Adviser Jarvis of Sacramento County piloted a party of pear growers through some of the representative pear growing districts of the delta section of Sacramento County.

Rice growers may obtain permits to shoot the ducks which are destroying their rice fields. Permits are given on the same terms as last year, that is, that the ducks may not be sold. The permits are issued by Pres. J. H. Stephens and C. H. Merry of the California Rice Growers' Association.

Central California

Watsonville has begun its apple shipping season.

Watsonville shipped 83 carloads of apricots this season.

The Walnut Grove section will ship 650 carloads of fruit, principally Bartlett pears.

Workers in the Lodi Cannery are dissatisfied with wages and working conditions.

Fruit shippers in the Lodi district have suffered from car shortage for some time.

At the recent farm bureau hog auction at Fresno 35 hogs averaged $21.30 per hundred pounds.

The prices on all varieties of beans are coming up, but of course few are left in growers' hands.

Santa Cruz County farm bureau has sold to members over a ton of poisoned barley for squirrels.

Hanford, Kings County, will hold Pork Day, October 15. Fifteen carloads of hogs will be auctioned.

The California Automobile Association has begun a campaign to preserve the redwood groves of the state.

At the Hanford hog auction of the farm bureau marketing association 275 hogs were sold in one lot at $20.75 per hundred.

Citrus growers of the Richvale district, Tulare County, will deliver their fruit to the new packing house to be erected at Terra Bella.

Shipment of Tokay grapes has begun from the Lodi section of San Joaquin County. The first shipment was made to New York City.

The Lodi district of San Joaquin County will have an average crop of tomatoes. Most of the near-by counties expect only about a half crop.

The Terra Bella Citrus Association has been organized with a capital of $25,000. It will build a packing house in time for next season's pack.

A conference will be held in Tulare September 5-6 to consider plans for conserving water supply from all sources feeding irrigation districts of the San Joaquin Valley.

One irrigator at Clovis who took irrigation water from a ditch and away from the rightful owners was fined $100, and in inability to pay the fine was committed to jail.

County horticultural commissioners of Tulare, Fresno and Kings Counties at a recent meeting at Sacramento decided on a rigid campaign of inspection on all shipping grapes.

Kern County is in the midst of a campaign for extension of irrigation. A plan is now contemplated to bring 400,000 acres of land near Delano, McFarland and Richgrove under the water.

Arrests and fines because of fruit packs not coming up to legal standard are becoming so common in various counties that we are perfectly safe in predicting material increase in quality of California fruits shipped out of the state.

The Poplar farm bureau center has a pig club of 16 members that will conduct a litter contest. Each member has purchased a pure bred gilt. Twelve Poland-Chinas, three Durocs and one Chester White were purchased. H. C. Carr of Porterville is the club leader.

Southern California

Elsinore cannery began on tomatoes August 5.

Beaumont will have 100 carloads of apples to market.

Lima beans are still advancing, now selling around $11.75.

Rialto grapefruit growers report sales in New York at $9.05.

Hemet recently made large shipment of canned apricots to Norway.

Downey, Los Angeles County, will hold its community fair August 28-29.

The Ventura County farm bureau is making plans for a fair to be held in October.

The cannery at Fallbrook, San Diego County, began on tomatoes, August 2.

Horticultural Commissioner Ryan of Los Angeles County will soon start a squirrel drive.

Southern California's output of walnuts will be 25 per cent greater than any preceding year.

Imperial Valley cotton growers are making plans to secure a sufficient number of pickers.

Brawley, Imperial County, has 500 acres in cotton. Most of it is of the short staple variety.

Congressman Osborne of Los Angeles is working for a two cent duty on imported beans.

Lemon growers of La Verne have formed a lemon association to cooperate with the Exchange.

The San Dimas marmalade factory is putting on more help every week. The cull packing house is also busy.

Rialto, San Bernardino County, reports citrus pack practically ended for the season. It has less than 100 cars yet to go.

Work on the new date packing house at Indio, Riverside County, is progressing. It will be ready for the fall pack.

Horticultural Commissioner Kellogg of Santa Barbara County reports successful dusting campaign against walnut aphis.

There will be a deciduous pruning demonstration at Owensmouth August 28 at the regular time of the farm bureau meeting.

The value of cooperative marketing was discussed by C. C. Teague, Santa Paula, at a meeting of Orange County growers at Santa Ana, August 13.

The last meeting of bean growers was held at San Luis Obispo, Saturday, August 9, to discuss some means of stopping importation from Japan.

Little Rock, Los Angeles County, celebrated Pear Day August 2. Little Rock will this year ship out 100 carloads of pears. Near-by districts in the Antelope Valley will add another 50 carloads.

Commissioner Waite of Imperial County reports that estimates for next year's planting of cantaloupes run as high as 25,000 acres. This year's planting was 14,088. Some plantings on sandy soil were seriously injured by root knot nematode.

The fight between Los Angeles County supervisors and the Rindge estate over the county highway through the Malibu ranch toward Ventura County is continued through attorneys asking that the board be enjoined from condemnation proceedings. This fight is of years standing.

The Coast and General

There is a big apple crop in the Northwest this year.

Dry farming sections of Arizona report crop prospects excellent.

The Southwestern Washington Fair will open at Chehalis, August 25.

Arizona, Idaho, Nevada and Utah have had welcome rains this month.

Texas watermelon growers have suffered seriously from car shortage.

The Wenatchee Valley of Washington will harvest over 9000 carloads of apples.

The wheat harvest is nearly completed in the Walla Walla district of Washington.

Rains in Arizona have increased the water supply in the reservoir back of the Roosevelt dam.

Fruit growers of the Sunnydale district near Seattle hope to have a cannery in operation next year.

The Yakima Valley of Washington expects to market over 7000 carloads of the best apples ever sent out.

Dairymen of Skagit County, Washington are organizing to affiliate with the state association in marketing.

Apple growers in the Wenatchee district of Washington are fearing a box shortage. Boxes are now selling at 20 to 22 cents.

Valuation of taxable property in the state of Arizona has increased $21,000,000 since the last assessment figures were made known in 1918.

The making of peanut meal is now a feature of manufacturing in Charleston, South Carolina. The meal is used to feed cattle, hogs and horses.

Berry growers at Puyallup, Washington, are paying 65 cents a crate for picking Cuthbert blackberries and it is sometimes hard to find pickers.

Recent heavy rainfall in the Salt River Valley of Arizona has caused a too rank growth of cotton plants on heavy soils, but little shedding is reported.

A plan for federating all the farm organizations of Washington was discussed at a meeting of representatives of farm organizations held at Yakima on August 4.

The Hood River Valley of Oregon will have a smaller crop of apples than was anticipated. It will amount to only about 2000 cars, including cider and cull apples.

Fruit growers of the Hood River Valley, Oregon, are promoting a campaign to have better cows on all fruit ranches. Their slogan is "Get rid of the I. W. W. cows."

Charles P. Mullen, president of the Arizona Cattle Growers' Association and a prominent cattle man of the Southwest, was chosen president of the United Stockmen's Association at a conference held at Salt Lake City.

Milk producers supplying Spokane distributors demanded an increase from $3.08 to $3.55 per hundred pounds. At the same time the distributors increased the price of milk to consumers from 14 to 15 cents a quart.

The Willamette Valley Mint Growers' Association, Oregon, has pooled crops of members this year. They hope to get from $8.00 to $10 per pound of oil. There are 300 acres of mint owned by members of the association.

Preserving Fruits For Exhibition

THE Ventura County farm bureau is sending out some information which will be of interest to Cultivator readers. Many have wondered how the beautiful glass jar exhibits of fruit in chambers of commerce expositions were prepared. Here are instructions. But a little word of warning—experience and good judgment are as much a factor in the securing of satisfactory results as in cooking; there is something needed beside the recipe.

Where it is desired to keep fresh fruit and vegetables for exhibit purposes, they are sometimes covered with a thin transparent water proof layer, which prevents evaporation of the moisture inside. A successful casing for this purpose can be made by mixing, while heated, one part of tallow, two parts beeswax and two parts paraffin oil. Apply in liquid state with brush or cloth or by immersing the sample in the liquid.

When coating pumpkins, squashes and other products with rough, thick rinds, add one-half ounce of gum arabic to the quart of mixture. A preparation known as parawax is satisfactory when there is only a small surface to cover. Two or three coatings of the above mixture may be necessary, depending upon the amount of handling and exposure.

Where it is desired to preserve some especially fine specimens of fruit and where it is not desired to use them for food after exhibition, they may be preserved in various kinds of antiseptic fluids.

Select the finest specimens of fruit, both as to form and size. Handle them carefully to avoid all bruising, and place them in bottles, arranging them so as to show them to the best advantage. Fill each bottle to the neck with fruit, then pour on the fluid recommended, filling the bottles to within one-half inch of the stopper, so as to entirely cover the fruit; then place the stopper in the bottle and run a little melted beeswax or paraffin over the joint to make it air tight. Tie the stopper down with a strong piece of cotton, and attach to each bottle a label containing the following particulars: Name of the variety of fruit, name and address of grower. Write also in each case in one corner of the label the fluid which has been used. Wrap the bottles in paper to exclude the light and preserve in a cellar or other cool place until required for exhibit. Strawberries and raspberries should be cut from the plants or bushes with a pair of scissors, leaving a short piece of stem attached to each.

Formalin

For red currants, red or black cherries, red or black gooseberries, red or black grapes, dark colored plums, strawberries.

Formalin (Formaldehyde) one pound (16 ounces); water, 21 quarts; alcohol, five pints.

Allow the mixture to stand, and should there be any sediment, pour off the clear liquid and filter the remainder through filter paper.

This two per cent solution of formalin, or formaldehyde, has been found very useful for preserving strawberries, so as to give them a natural appearance.

In each case where this fluid is used, mark "F" on one corner of the label.

Boric Acid

For red apples, blackberries, black currants, red raspberries, black raspberries.

A solution of boric acid in the proportion of two per cent.

Dissolve one pound of boric (boracic) acid in 22 quarts of water, agitate until dissolved, then add five pints of alcohol. If the fluid is not clear, allow it to stand and settle, when the clear upper portion may be poured off and the remainder filtered.

In each case where this fluid is used, mark "B" on one corner of label.

Zinc Chloride

For green or russet apples, russet pears.

A solution of zinc chloride in the proportion of 3 per cent.

Dissolve one pound of zinc chloride in seven quarts of water, agitate until dissolved, then add one and two-thirds pints alcohol. Allow the mixture to stand until settled; then pour off the clear liquid and filter the remainder.

In each case where this fluid is used, mark "Z" on one corner of label.

Sulphurous Acid

For white or yellow apples, apricots, white cherries, white currants, green or yellow grapes, nectarines, peaches, green or yellow plums, quinces, white raspberries, green or yellow pears.

Sulphurous acid, one pint; water, eight pints; alcohol, one pint.

Allow the mixture to stand, and should there be any sediment, pour off the clear liquid and filter the remainder.

In each case where this fluid is used, mark "S" on one corner of label.

ORANGE OUTLOOK

The orange outlook, according to United State bureau of crop estimates:

Prospects for a big orange crop have gone glimmering in the heavy "June drop" which this year continued well into July and hit the Valencias harder than in either of the past two years. Temperatures were high right up to and including July 25 and irrigating water none too plentiful, which were doubtless the principal causes of the prolonged period of dropping.

While not able to personally visit the citrus districts during the month, reports from growers were numerous enough and sufficiently well scattered over the five big counties to supply the best of information concerning conditions. For the state the condition is about 65 per cent of a normal or practically the same as one year ago. Navels were reported at 61 and Valencias 75. August 1, 1918 Navels were 56 and Valencias 82. Such a condition warrants a forecast of 14,500,000 boxes of oranges divided about as follows: Los Angeles, 5,000,000; Orange, 2,000,000; Riverside, 1,500,000; San Bernardino, 3,500,000; Tulare, 2,000,000; Northern California, 150,000; San Diego and Ventura, 250,000 boxes.

Shipments of the 1918 crop show that the growers were too pessimistic in reporting the August 1 condition and possibly may have erred in the same direction this year although it is hardly likely that the same error would be made in underestimating the crop two years in succession and immediately following last year's experience.

There seems to be no question of a smaller crop of Valencias this year although there is some new bearing acreage.

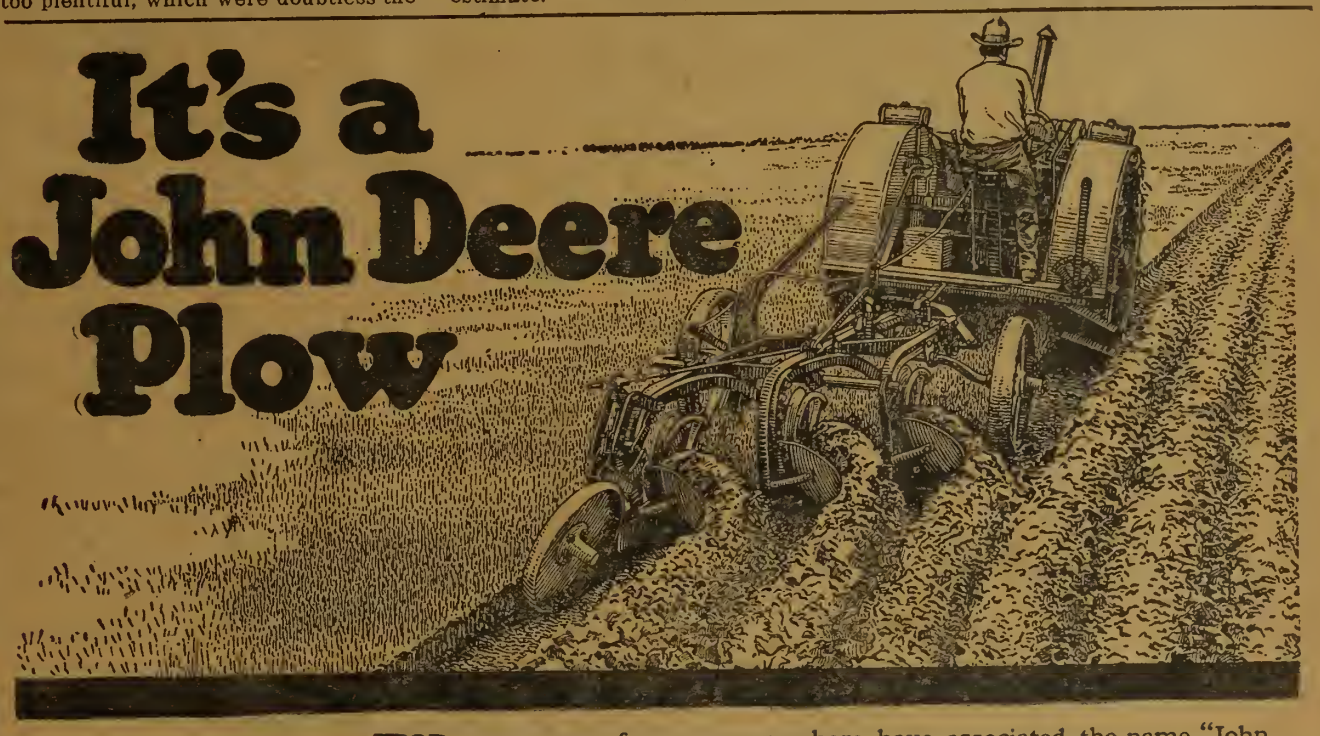
The reader should bear in mind this is only a forecast of production from the reported condition and in no wise must be taken as even a preliminary estimate.

CROSS POLLINATION

By Leonard Coates

This is always an interesting subject, made more so by the tests made by members of the Davis Farm staff of the college of agriculture. Every grower knows that some varieties bear better than others in some seasons and that some varieties in particular have established a record for regularity in bearing, while others are generally known as shy bearers. We all like to know why, and the microscope is called into use so that after a careful series of examinations and tests, certain varieties are declared to be self-sterile to their own pollen. But there are many orchards in California of these supposed self-sterile varieties, such as Bartlett pear, Satsuma plum, Burbank plum, Wickson plum, etc., which bear abundantly every year without any apparent cross-pollination. I owned an interest in a large pear orchard in Napa County 28 years ago, half Bartlett, half Winter Nelis. Neither bore although of sufficient age and full of blossom, until, in a fit of desperation the trees were very heavily pruned, decapitated as it were, while prior to that, a thinning out system was adopted. Next year they bore well and did so ever after. No reason has ever been given. In another orchard in Napa I planted 250 Satsuma plum trees in a block by themselves; they always bore well. In our present location near Morganhill we have over 1000 Bartlett pears which have borne well every year since they were old enough, and with no chance of cross-pollination. And

It's a John Deere Plow



FOR many years farmers everywhere have associated the name "John Deere Plow" with special plow quality—with better and longer plow service. Getting this quality is especially important when you buy a tractor plow. A tractor plow does work on a big scale—the quality of the work counts in proportion. A tractor plow must stand heavy strains—its ability to keep on doing good work year after year counts strongly in making plow profits. Remember, you get this special quality when you buy a

JOHN DEERE TRACTOR PLOW

Don't Forget

Good plowing is what you are after when you operate your tractor plowing outfit, and good plowing depends upon the plow. That's why it pays—always—to get the best plow you can buy. No matter what standard tractor you buy and no matter what type of soil you have to contend with, you can get a John Deere Plow, suited to your tractor and your soil, and thus make sure of good plowing year after year.

Sizes

Two-Bottom
Three-Bottom
Four-Bottom

Equipped With Genuine John Deere Bottoms—The kind that have an established world-wide reputation for long wear, good scouring and thorough seed-bed making. You can get the shape and type suited to your soil.

Holds to Its Work at Uniform Depth—It is *locked into the ground* at plowing depth through the action of the power lift. The land wheel is set back, balancing the weight of the plow over all three wheels, just as on your sulky or gang plow. Makes plow run steady and *assures plowing at uniform depth* in uneven ground.

Quick Detachable Shares—Strong and close-fitting. Loosen one nut to remove the share. Tighten the same nut and the share is on tight. *It stays tight.*

Extra Strong Construction—Extra heavy beams of special John Deere steel. We guarantee them not to bend or break. Heavy beam braces, long, lapped and securely joined to beam with heavy bolts and lock washers.

High and Level Power Lift—Lifting mechanism is simple, strong and positive. Parts move only when plow is being lifted or lowered—practically no wear.

Three Sizes—Two-bottom, three-bottom and four-bottom. One of the sizes suits *your* tractor. And, remember, the adjustable hitch adapts the plow for use with any standard tractor.

Farmers Everywhere are making sure of continued good plow service behind their tractor by getting John Deere Tractor Plows. Your John Deere dealer is ready to furnish you with one. We will be glad to send you a folder describing the John Deere Tractor Plow. Ask for Folder TP-24. Write today for full information.

John Deere Plow Co. San Francisco, Cal. Portland, Oregon

GET QUALITY AND SERVICE — JOHN DEERE DEALERS GIVE BOTH

The Demand For a Better Pea and Bean Thresher Has Been Met by the WADE

Old style threshers are not equal to the task of cleaning Western brown peas and beans, with their tough vines and luxuriant growth.

New Wade Features

A stronger Blower of new design and larger capacity with an improved Damper that controls the draft; a larger cleaning surface with the air currents concentrated instead of blowing broadcast through the machine; briefly describe the major improvements in the new WADE.

Wade Thoroughness Throughout

A Thresher that will stand up under abuse, built a lot better than seems necessary, and finished to the last detail, with a sacking attachment and capacity that is unusual, makes the WADE complete.

Write for Full Details

Booklets fully describing this wonderful machine, with illustrations showing its new features as compared with the old method and prices that are no higher than on the ordinary machine, will be gladly mailed without obligation. Write today.

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SINCE 1865

339 Hawthorne Ave., Portland, Ore.

Largest and Oldest Independent Implement Dealers on the Pacific Coast

When writing advertisers, mention The Cultivator.

so with the great Sacramento Valley pear orchards. Does self-fertility or its opposite self-sterility indicate the fertility or otherwise of the seed or fruit proper? And can what we call the fruit or really the pulpy covering to the fruit perfect itself even if its bloom were "self-sterile"? If so, the contradiction, or the mystery, ceases to exist; if not ——?

SPRAY FOR TOMATO LEAF BLIGHT

Spraying improves color and solidity of tomatoes, reduces rot and sunscald, and increases the yield of ripe fruit 39 per cent, and of both green and ripe fruit 55 per cent.

A small knapsack compressed-air sprayer may be used in this work. Such sprayers are light, easy to operate, and produce a fine misty spray. Several different kinds, varying somewhat in shape and construction, but built on the compressed-air principle, are now offered for sale.

A good spray formula is 5-5-3-50 Bordeaux soap mixture, composed of 5 pounds copper sulphate, 5 pounds stone lime, 3 pounds resin fish oil soap, and 50 gallons of water.

To reduce the work of preparing spray mixtures the following stock solutions were made: Five pounds of copper sulphate (blue stone) were dissolved by suspending it in a wooden vessel containing 5 gallons of water. Copper sulphate corrodes iron and tin. Five pounds of stone lime (quicklime) were slaked in another vessel by slowly adding water at first and later increasing the volume to five gallons. Three pounds of resin fish oil soap were diluted in a third vessel by stirring it in hot water until thin and increasing the volume to 5 gallons by adding water of ordinary temperature.

The semi-annual conference of the National Board of Farm Organizations will be held on September 16-17, 1919, at the new home of the board in Washington, D. C. Delegates from the great farm organizations of the United States, including grange masters, farmer union presidents, officers of grain, livestock, cotton, and the great milk producers' associations, have attended past conferences of the board.

TRACTOR DEMONSTRATION

The Traction Engine and Implement Dealers' Association of Southern California, encouraged by the increasing interest of the rancher in the tractor and power farming machinery, is making plans for the fourth annual demonstration on a scale more extensive than in any previous year. According to the management the coming meet, which will be held on the Rancho La Brea at Crescent and Melrose avenue, September 16 to 21, inclusive, will exceed in number of tractors and accessories displayed, and in attendance, that of any previous year.

This will be the largest working exhibit of power farming machinery yet shown, and in addition to the extensive line of tractors will include a display under a tent 100 feet by 350 feet of trucks, trailers, casings, solid tires, magnetos, lubricating oils and in fact practically every known accessory on the market essential to the tractor, truck and automobile. The original purpose of the association to emphasize the educational features of these annual demonstrations has been strictly adhered to, and to this fact is due the widespread interest in them shown by the rancher, orchardist and grower. The assembling on one field of every type of tractor, and power farming machinery manufactured and the display of the extensive and varied line of accessories affords an exceptional opportunity for the prospective user of these modern aids for the more economical development of the land.

Among the exhibitors will be the B. Hayman Company which will enter a full line of Oliver Chilled Plow Works implements, a complete line of Emerson, Brantingham, the E. W. Ross feed cutters, Planet, Jr., line Forkner cultivators and a new line of Roderick Lean disc harrows.

The International Harvester Company has listed the 10-20 Titan tractor, the 8-16 and 15-30 International, and a most complete general line of International and P. & O. Implements.

E. P. Bosbyshell Company will exhibit two sizes of Heider tractors, full line of Rock Island plows, W. W. alfalfa grinding mill, Clark Cutaway Harrows, Sandwich Hay Press, Knapp disc harrows.

William L. Hughson Company will exhibit Fordson tractors, special line of Roderick Lean harrows, also Amsco drills.

F. T. Briles Company will exhibit the Bates Steel Mule 15-20 Bernice chisel and subsoiler. Schmiesers land levelers. F. T. B. disc harrows.

Wm. Gregory & Sons has listed the Trundaar tractor.

Motor Equipment will display and demonstrate the Beeman tractor with a complete line of implements for same.

The immense accessory tent will be full of interest to the farmer and housewife, the list of exhibits including many time and labor saving devices.

Admission will be free, ample free parking space will be provided, and an excellent restaurant will serve meals at all hours.

AVOCADO REPORT

The California Avocada Association has a bunch of live members and they are making an exceedingly live subject, that of growing avocados in California. The association is just out with its report for 1918-19, a book of nearly a hundred pages, beautifully illustrated and well printed. One of the illustrations is a portrait of Judge Chas. Silent, one of the pioneers of the industry. Other illustration are of

Cover Crop with Germain's MELILOTUS INDICA

99 35/100 % PURE

Lowest germination 90 20/100 %

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Are especially Grown for Planters desiring the Best. If better trees could be grown we would grow them. May we have your order?
The R. M. Teague Citrus Nurseries
San Dimas, California
Founded in 1880

fruits and orchard scenes, many of them in Mexico. This book contains the addresses delivered at the third and fourth annual meetings with notes and other items of greatest interest to the avocado grower.

PRINCIPLE OF CONTROL OF SCALE INSECTS

By Thos. O. McClure

There are many species of scale and these species vary greatly, besides the habits of a single species will vary, due to climatic and other reasons.

In some districts a species normally has distinct broods at regular intervals; in other districts this same species might be found to have a more or less continuous emergence or what would be termed overlapping broods.

The life cycle of the scale, from the emergence of the young to its natural death, is usually about 12 months.

Control the Young

In the control of scale the first thing to be remembered is that it is the young and not the old scale that is to be controlled. When the young first emerge they are so small that they are not noticed unless particularly sought for, and even then they may not be seen unless a magnifying glass is used.

Life Cycle

Some scale insects are hatched from eggs and some are born alive, but no matter which the case may be, they continue to grow in size and toughness until they reach maturity. Up to a certain period they have the power of locomotion and crawl about until they find a suitable place to attach themselves. Soon after they become permanently attached they lose the power of locomotion and there spend the rest of their life. The evolution which takes place thereafter varies according to the species. Some species, such as the black, brown, apricot and purple, lay a full quota of eggs (from 400 to 750 or more), while others such as the San Jose, oleander and red produce living young.

These eggs hatch out in due time and start the cycle of life over again. The old shell, which is most in evidence and often mistaken for the active insect, is either a harmless shell containing only the abandoned egg shells, or if it is before hatching time, will contain the eggs. If the eggs are still unhatched the shell may be carefully removed and the eggs dumped into the hand or onto a piece of paper for examination under a magnifying glass. As the scale becomes older it also becomes tougher until it reaches a point where it is practically immune to any control measures and therefore impractical to try to control.

To Check the Spread

It is very evident then that control measures should be applied as soon as possible after the emergence is complete. It frequently happens, however, that because of a heavy infestation or to check the spread of a new infestation it is not advisable to wait until the emergence is fully compete. This commonly occurs on citrus trees. In cases where the emergence continues over a considerable period the insects first hatched or born start to work on the tree and if no control measure is applied until the emergence is complete they will have done considerable damage. In order to check the depredations under these conditions it is often advisable and profitable to apply a control when the emergence is about 50 per cent complete and then again when the emergence is complete.

How to Tell

To determine the condition of the scale and when to apply a control, simply remove some of the parents and estimate the number of eggs still unhatched or the condition of the parent body if it is a species that gives birth to the living young.

Greatest Emergence

The greatest emergence of the young scale, no matter what the species, is usually between the first of June and the first of September. Exceptions must be made for overlapping broods due to climatic or other unusual conditions.

POISONING FROM ARSENATES

The question is often brought up as to the possibilities of poisoning from eating apples which have been sprayed to protect from codlin moth, or other fruits or vegetables sprayed with an arsenate or other insect poison.

Scientific people have given thorough examination to fruits and vegetable so treated, and in one case where apples were examined and every particle of poison removed it was found that it would require the eating of something like a half a bushel of apples, skins and all, in order to secure sufficient to injure the health of a human being. In this case the spraying was done something like two weeks before the time of testing the fruit. Many spray formulas containing these poisons are accompanied by warning that this spraying should not be done within two or three weeks of time of eating or marketing. Still there are cases where there has been injury, though in some of these more thorough examination of the conditions show a cause other than the spray applied to the food.

We now have a letter from Mrs. Robert Morse of Fallbrook who says that she was poisoned by eating two small apples which had been sprayed with arsenic solution and adds that she did not eat the peeling. She feels that her poisoning has caused a sickness which has lasted for two years and that warning should be given to all fruit growers to use greatest care and never spray matured fruit.

It is advertising that makes a big business out of a small one.

THE ALMOND SEASON

Almond harvesting has begun. The crop, according to government estimators, will be 30 per cent greater than last year; the Exchange estimate is a little higher. Last year's crop was 5100 tons.

The Exchange now has a membership of nearly 3000. It will make prices about the first of September. The estimated crop under its control has already been contracted at whatever price will be named at that time.

As you wander to and fro,
Smile, smile, smile.
Spread good cheer where'er you go,
Smile, smile, smile!
Keep your heart all free from guile,
Scatter sunshine all the while,
Be an oil-cup, not a file—
Smile, smile, smile!

—"The Crescent."

FORD OWNERS! TRY FOR-DO 10 DAYS FREE

EASIER TO PUT ON THAN NEW PLUGS

Send No Money

We want every Ford owner to try this wonderful new invention 10 days free, at our risk. Just fill out the coupon below, mail it today and we will send you "For-do" complete, postpaid, ready to use without a cent of pay in advance. When you receive it, put it on your car and watch results. See how much easier it makes your engine start, how much smoother your car will run; how much better it will pull, and how much more mileage you will get from the same gasoline.

More than 50,000 "For-dos" have been put on Ford cars the last 3 months. Get one to try 10 days free on your Ford. Send the coupon today.

"FOR-DO"

—Works wonders on Ford cars—
—Gives your Ford more power, more pep, more speed—
—Gives you 4 to 6 miles more per gallon—
—Enables you to locate engine trouble instantly—
—Doubles the life and service of your plugs—
—Saves you many times its cost on repair bills alone.

After 10 days' trial you wouldn't be without "For-dos" on your car at any price. But we don't ask you to take our word for this. We prove before you pay, that "For-do" will do just what we claim or you don't keep it. We take all the risk.

Saves Half on Spark Plugs
Makes Old Plugs Work Like New

To prove it, make this test: Pick out any 4 old cracked or worn out plugs you have thrown away and try them again with "For-do;" see how it will make them spark like new. Oil, carbon or grease have no effect on plugs when "For-do" is used. "For-do" is easily attached to any Ford in 3 minutes. No changes necessary in car or engine, no holes to bore—no bother at all. A child can put it on. Can't possibly harm engine, coil or plugs.

Indianapolis, Indiana,
March 26, 1919
G. E. Colby Co., Maywood, Ill.
Dear Sirs:
I bought one of your "For-dos" several weeks ago and it's the best buy I ever made for my Ford. I now use my old discarded spark plugs and save gas. Please write me your offer and price to agents. I can sell some of them.
Very truly yours,
A. L. HECKMAN,
608 N. LaSalle St. Indianapolis, Ind.

Send No Money Just This Coupon

Just write your name and address on the coupon—tear off and mail today. We will send you "For-do" complete, post-paid, ready to attach. Use it 10 days free. At the end of this trial, if you find it does everything we claim, and you want to keep it, send only $3.00. If you are not pleased, just say so—mail it back, and no charge will be made. We take all the risk. Send the coupon today.

G. E. COLBY CO., Inc. 28 No. 8th Ave. MAYWOOD, ILL.

10 Days Free Trial Coupon

G. E. COLBY CO., Inc., 28 No. 8th Ave., Maywood, Illinois.

Please send me "For-do" on Free Trial in accordance with your offer. If I decide to keep it, I will send you $3 within 10 days. If not pleased, I will return it to you promptly and no charge is to be made for this trial.

Name .....

Town .....

Street or R. F. D. No. ..... State .....

The LAUSON Wins Again

at Delavan, Wisconsin

The LAUSON Transmission is fool-proof. Even an inexperienced operator cannot strip the gears. All gears are enclosed in a dust-proof case and operate in bath of oil.

James Murphy, Manager of 1600-acre Tilden Farms, ordered a LAUSON after watching the operation of 26 tractors in a competitive test.

The LAUSON FULL JEWEL TRACTOR did not make a stop for adjustment of any kind from the crack of the pistol to the finish of the Delavan Demonstration.

The reasons for this performance are evident in its construction—its full jewel movement with 24 roller and ball bearings, its dust-proof construction, its gears running in a bath of oil, and the practical agricultural experience incorporated in its design.

Full details on request.

Distributors for Oregon, California, Arizona and Nevada

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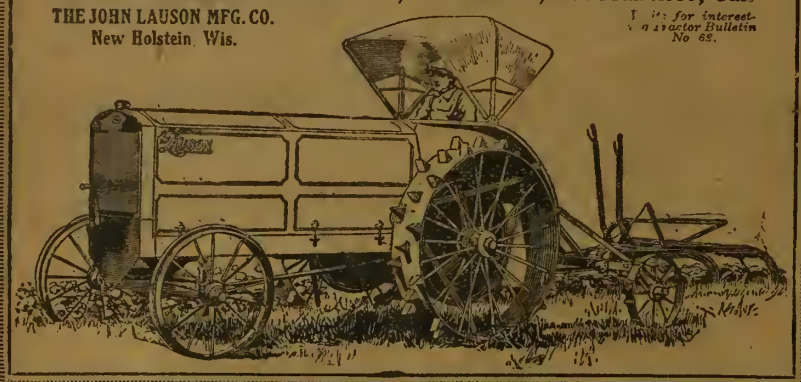
THE JOHN LAUSON MFG. CO.
New Holstein, Wis.

Ask for interesting Tractor Bulletin No 62.



The Engine That Does The Work!

Easy to Start

Every farmer likes to see his work done right and for the least money. You can have yours done in the same way by putting a

FULLER & JOHNSON

Model "K"

Throttling Governor Kerosene Engine

on your place. For years these engines have shown by actual service that they are real money savers and the most dependable engines on the market. Built in convenient sizes up to 25 H. P., both stationary and portable—every outfit is an up-to-date power plant We'll gladly tell you how you can use this wonderful engine on your farm.

Write today for big **Picture Catalog No. 22-A.** Sent FREE.

Fuller & Johnson Mfg. Co.
Builders of Farm Engines
82 Cliff St., Madison, Wisconsin

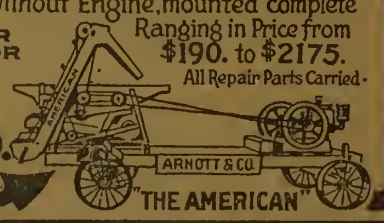
BEAN THRESHERS THE TWO STANDARDS

Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

Guaranteed by "The House of ARNOTT"
Ask The Grower Who Owns One
Write for Folder, Specifications, Prices Etc.

Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $190. to $2175.
All Repair Parts Carried.



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112-118 So. Los Angeles St. Los Angeles.

Hauser's Organic Fertilizers

Built for
California Conditions

Send for Booklet, "Fertilizer Efficiency." Tells You Why.

Hauser Packing Company
Los Angeles, Cal.

When writing advertisers, mention The Cultivator.

Pruning and Staking Tomatoes

By S. S. Rogers

The practice of pruning and staking tomato vines in California is one which has been carried on in a small way for a considerable period of years. In the states which have considerable rainfall during the growing period of the crop it is usually customary to stake up the vines. This is done primarily to keep the tomatoes from becoming spotted by the earth which is splashed up by the rain and to prevent rotting which is often caused by the tomatoes resting upon the damp soil.

In California where practically all of the tomatoes are grown in the absence of rain this custom is practiced under two conditions. When growing for the early market it has been found that the tomatoes will mature slightly earlier than when the vines are allowed to grow on the ground. It also adds to the efficiency of picking and under certain conditions a larger crop will be produced than when staking is not practiced. By staking it is possible to have the plants much closer together than it otherwise would be, and as the grower receives his highest price for the earliest tomatoes many more plants will be grown per acre where the vines are closer together. It is sometimes customary to stake tomatoes when growing on a small area and especially for the home garden.

There are several methods used for staking the crops, the most common one being to place two stakes about 14 feet apart and three and one half to four feet tall about every 12 to 18 feet in a row. Wires are then strung on the stakes, having the lower from one to two feet from the ground and the upper three and one-half to four feet from the ground. The end stakes should be braced securely as there will be considerable weight on the wires. As the vines grow they are trained to some extent along the wires but normally this entails little extra work.

Several experiments have been carried on upon pruning tomatoes in California, but so far as the writer has observed no material results have been shown. The pruning has been done at several different stages, starting when the plants have been in the fields a few weeks and pruning throughout the season. Under normal conditions it would seem inadvisable to prune.

How to Get Rid of Ants in the House

As long as household conditions are such as to attract ants, measures for getting rid of the insects will be of little value. The first step in freeing a house from these pests is, therefore, to clean up all food that may be scattered about and keep food supplies which may attract ants in ant-proof metal containers, or in ice boxes. Cake, bread, sugar, meat and similar substances are especially likely to attract the insects. The use of baits is not recommended because of the danger that these will serve merely to draw more insects into the house and thus actually to increase the nuisance. Where it can be safely used, however, a syrup poisoned with arsenate of soda has been found effective. The formula for this syrup is one pound of sugar dissolved in a quart of water, to which should be added 125 grains of arsenate of soda. This mixture is boiled and strained and on cooling is used to moisten sponges which are placed where they can be reached easily by the ants. The insects collect the syrup and convey it to their nests, so that the whole colony is ultimately poisoned. Although this method has been found effective, as has been said, it should be remembered that the arsenate of soda is poisonous to human beings and to animals as well as to ants, and that its use must be safeguarded with the greatest precautions. When the ants can be traced back to their nests and these are in accessible places, it is possible to destroy the colonies by injecting with an oil can or small syringe a little bisulphid of carbon, kerosene, or gasoline into the nests. All these substances, however, are inflammable and precautions must be taken, therefore, against the danger of fire. Though the common garden or lawn ants which build their little crater nests around houses are distinct species from the true house ants, they may find their way into the house. Their colonies may be destroyed by drenching the nests with boiling water or injecting a small quantity of kerosene or coal oil into them, or, where large areas are affected with a very strong soap wash prepared by dissolving any common laundry soap in water at the rate of one-half pound to one pound of soap to a gallon of water. Another method is to inject bisulphid of carbon into the nests, the quantity of the chemical depending upon the size of the nest. After the bisulphid of carbon has been injected, the entrance to the nest should be closed by the foot in order to retain the chemical, which will then penetrate slowly through the underground channel and kill the ants. Although its fumes are disagreeable, they are not poisonous to man and the higher animals.

Condition of California Field Crops

As reported by the federal bureau of crop estimates:

The condition of Indian corn is two points lower than we reported a month ago. The forecast given of 2,923,000 bushels is on the basis of the entire acreage being harvested for grain.

The average yield of wheat per acre is sixteen and a half bushels which is one and a half bushels better than last year. The increased acreage and the better yield per acre brings the total production up to 13,348,000 bushels, which is an increase over 1918 of 5,758,000 bushels—certainly a very substantial gain. The quality, too, is better than last year.

Oats show up better than was reported a month ago when it appeared that the harvest would yield 5,712,000 bushels, and our forecast is for a slight increase in production over that of last year.

Total production of barley shows a falling off from last year's crop of very nearly three millions bushels, this by reason of decreased acreage.

In the Delta region Irish potatoes are looking well but in other parts of the state owing to lack of moisture they have declined in condition with the result that the forecast is 180,000 bushels less than a month ago.

Sweet potatoes have suffered somewhat from shortage of water and the condition of the vines is eight points lower than July 1 and the forecast is for 77,000 bushels less than our forecast made a month ago.

The condition of the rice crop has not changed since our last report and our forecast based on the same acreage is the same as made July 1. The outlook now is for a production of over eight and one-half million bushels.

There is about the same acreage of tame hay as last year, but less of wild hay. The condition of the crop, taken as a whole (alfalfa included) is not as good as on July 1, our estimate being 182,000 tons less than at that date. The estimated crop at that time was 4,530,480 tons.

As would be expected at this season of the year the condition of pasture is not as good as reported July 1.

Hops are looking well. All indications point to a larger production than last year.

Cucumbers and melons may be fed by pouring liquid manure into holes near the plants.

INVESTIGATING COTTON IN ARIZONA

Dr. T. H. Kearney and W. G. Wells, of the United States department of agriculture, bureau of plant industry, have been making a tour of the Salt River Valley of Arizona to study the Pima long staple cotton as grown by the valley farmers. They were accompanied by S. H. Hastings, superintendent of the government experiment station at Sacaton. Dr. Kearney was very largely instrumental in the development of long staple cotton as grown in America. It was under his direction that the cotton has been grown from the first plantings of Egyptian seed nearly 20 years ago. Mr. Wells for the past five years has been engaged in selecting seed plots of the best fields of Pima cotton. His work has prevented the deterioration of the Pima cotton and is resulting rather in a constant improvement. Mr. Hastings is doing some valuable work in determining the proper distance for spacing the cotton plants. They were accompanied by a considerable number of cotton growers who were thus enabled to profit by their knowledge and experience.

YEARBOOK OF 1918

The history of American agriculture is well depicted in the Yearbooks of the department of agriculture. Since 1862 these volumes have been appearing and giving a mass of statistics as to farm crops and farm animals. In addition the books have contained reports of the secretary and of the various divisions or bureaus, as well as a series of articles touching upon various agricultural practices and problems.

The last Yearbook is rather later than usual in appearing, having just been received. Amongst the formal letters written by specialists there are: "Black Stem Rust and the Barberry," "Cattle Loans and Their Value to Investors," "Better Poultry Through Breeding Associations," "The Old and the New in Corn Culture," "Drainage Movement," "Rabbit Growing," "Dairying," "Rye," "Home Mixing of Fertilizers," "Effects of War on Seed Industry," "Electric Light and Power from Small Streams," "Live Stock Reconstruction," "How Weevils Got Into Beans," and dozens of other helpful short articles. Their shortness is remarkable when compared with some of the former reports which have aimed to contain full information on each topic touched. Then about a third of the book is given up to statistics of crops. The book is invaluable and every farmer should secure it. When ordered from the government printing office it costs one dollar, but a hint to Cultivator readers is to write to the congressman of your district or to one of the senators, and it will probably be sent without cost.

RICE GROWERS MAY SHOOT DUCKS

Rice growers will have some relief from depredations of wild ducks. President Stephens of the California Rice Growers' Association has received wire from the biological survey at Washington authorizing him to issue permits to kill ducks in rice fields to rice field owners, their immediate families and bona fide employes. This permission was not given until a month later last year after strenouus work by the rice growers.

The permits must be issued with the same stipulation which went with their issuance last year. The ducks can not be sold, but in case of a surplus they may be shipped to hospitals, orphanages and other charitable institutions.

1918 COTTON CROP WORTH $2,067,000,000

The 1918 cotton crop, lint and seed, was worth $2,067,000,000 to the producers. This is about three times the value of the cotton crop of 1914 and is twice the value of the crop of 1913, which had the highest value of record. The computation has just been made, at the close of the cotton year, by the United States department of agriculture, bureau of crop estimates, based on average monthly prices received by growers and on monthly marketings.

ANTELOPE VALLEY FAIR

"Antelope Valley will hold its second annual fair at Lancaster, Septembr 17-20. The management writes:

"A large display of products is assured at this time and outside competition for the prizes on blooded stock will probably be very keen. In 1917 most of the prizes on hogs and cattle were won by local exhibitors but this year they will have to step high for their honors as entries from outside breeders are coming in to the secretary in great numbers.

"A new idea in building will be carried out on the grounds, and probably the main feature will be the "Alfalfa Palace" which will be a structure 50 feet by 100 feet constructed of baled Antelope Valley alfalfa hay. In this building will be concessions and a large dance floor.

"Those intending to visit the fair would do well to make hotel reservations early and the Fair Association advises all who can to bring their auto camping equipment. A large camping ground has been secured where there is plenty of shade and artesian water.

"Come to the Antelope Valley Fair!"

SHORT CROP OF BEANS

All beans will be a short crop this year, Limas showing the greatest reduction in acreage and yield. The bureau of crop estimates says:

The condition of Lima beans on August 1 was only 47 per cent of a normal, a decrease of 12 points since July 1 and on a decreased acreage promises a total production of not over 700,000 sacks compared to 1,545,000 sacks in 1918. Orange County where the irrigation of beans is but little practiced shows very poor condition. Ventura will probably produce about two thirds of the crop.

Beans other than Limas are considerably better in the Sacramento and San Joaquin Valleys than in Southern California where lack of soil moisture at planting time has resulted in a rather spotted and poor condition. On August 1, the condition was about 73 per cent of a normal compared to 82 on July 1. With more than 30 per cent decrease in acreage this poor condition warrants a forecast of only 5,353,000 bushels for all beans including Limas which is only 62.4 per cent of the total production in 1918.

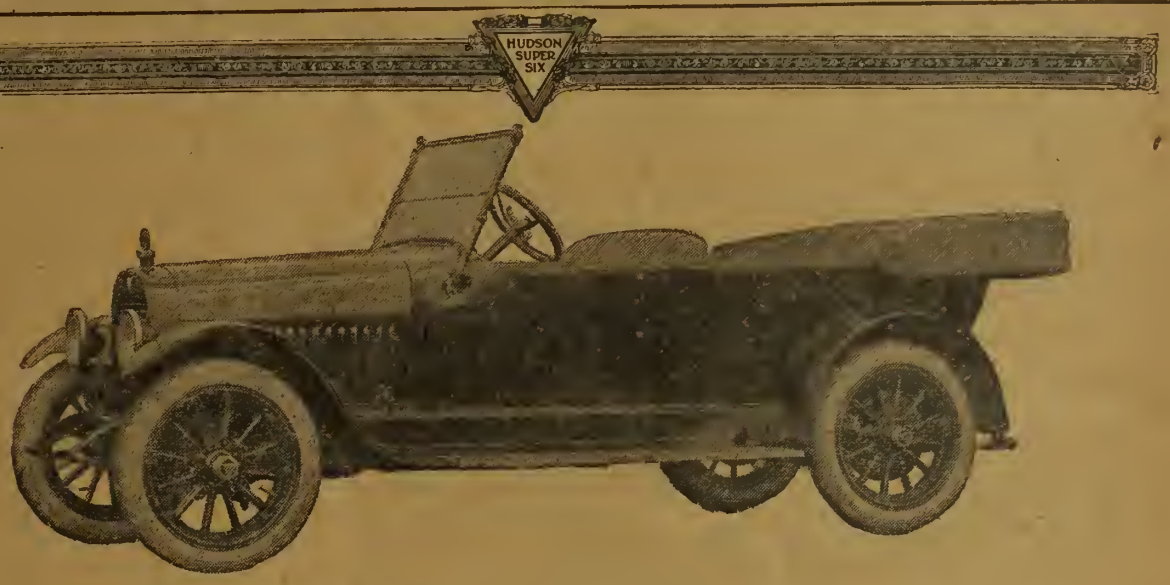
PLANT IRIS NOW

Iris should be divided and set in new locations now. The tubers send out their feeding roots during the fall. In later transplanting these roots are destroyed and a new set must be produced. Because iris are so hardy they will live if moved at any time, but for full bloom next spring, which is what we want them for, they should be planted now.

SLOW MUSIC

Have you ever been stopped by a gent
on a bike? I have!
Who asks for your name, address and
the like, I have!
Have you ever been told to drive to the
pound
Where your auto is chained to a pole in
the ground?
Have you cussed and abused every copper
around? I have!

Have you ever been told by the Cop, "It's
too bad?"? I have!
"As far as I go, you are innocent, lad!"
Some salve!
Have you ever been told by the Judge
when you plead
To make a deposit before you are freed,
Have you ever resolved, NEVERMORE,
you would speed?
I have, NOW!



60,000 Earlier Hudsons Foretold This Super-Six

Qualities That Men Had Predicted Would Make It the Unrivalled Car Have Now Been Realized

Everyone knows Hudson Super-Six history. It is written in the official records of some of the greatest endurance and speed tests known. It is told in nearly every locality by those who know how performance reveals quality.

But its greatest fame lies in the appreciation that thousands of owners hold for it.

You have heard Hudson owners predict its ultimate achievements. They have praised their cars and yet always they have said that a greater Super-Six was inevitable.

Hudson Evolution Came Naturally

Let the reader review the past four years of motor history. The Super-Six was a distinct step ahead in motor designing. It added 72% to power without increased weight or complications.

Its principle was new. Vibration had been minimized. Performance had been increased.

That first Super-Six revealed a development not possible to any other type. It foretold the Hudson we now offer.

Each Year Marked Some Improvement

New Hudson models are not mere changes in body design. Such attractiveness is not overlooked. The main effort has been to increase endurance, to free it from the faults common to all cars.

Easier starting, more reliability of performance, freedom from mechanical attention, a safer, more comfortable and more economical car has been the aim.

Each added quality has been proved in a thousand ways. The speedway, road racing, mountain climbing, trans-continental touring at express speed, did their part. Spectacular records were established, but long after details of the world's fastest mile for a stock chassis, or the double run from San Francisco to New York and return, had been forgotten by the public, Hudson engineers continued to profit by the lessons learned in those tests. Subsequent models showed the result.

Such a car would have been impossible without that experience. We did not enter racing to win prizes but to learn how to build a better car.

Sales Lead All Fine Cars

Like the constant champion it proved to be on the race track, Hudson sales exceed those of any other fine car.

More Hudsons are built now than ever before. A month's output now is as great as was the first four month's production of the first Super-Six.

Sales demand, though has always been ahead of the supply. That shows how motordom regards the Super-Six.

When will you make it your choice?

(1086) **Hudson Motor Car Company** **Detroit, Michigan**

BALING HAY

The department of agriculture is issuing Farmers Bulletin 1049, "Baling Hay," in which types of presses, compresses, condition of hay for baling, operatiug the press, and other points are given. This bulletin aims to help the hay grower solve some of the problems that arise In connection with baling hay; to decide whether to buy a press or depend on custom balers, to select the type of press best suited to his needs if he buys, and to settle to best advantage questions in farm practice that determine efficiency In the setting up and operation of a hay press.

Is $29.60 Additional Profit a Year Per Cow of interest to you?

Is an Additional Daily Gain of Approximately Five-tenths Pounds in Fattening Hogs of interest to you?

Is there a Lot of Roughage now on your Farm Being Wasted Just Because It Is Not Palatable?

You can make this additional profit; you can get this increased pork production, and you can turn what is now waste into profit by using that great Conservation Food,

PURE HAWAIIAN CANE

MOLASSES

Write us at once and let us tell you how.

W. H. YOUNG COMPANY

Holbrook Bldg. SAN FRANCISCO

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Since 1876

WAGONS AND AGRICULTURAL IMPLEMENTS

118-120 N. LOS ANGELES ST.

LOS ANGELES, CAL.

Oliver Plows. Roderick Lean Disc Harrows
Forkner Tillers Planet Jr. Cultivators
Studebaker Wagons

Perfect Farm Machinery

Strong Show of Live Stock at Sacramento

By R. P. Royce

ADVANCE information indicates that the 1919 California State Fair to be held at Sacramento, August 30 to September 8 will register distinct progress over any previous fair.

In no department is registered greater advancement over former years than in the live stock division. The growth of the pure bred live stock industry in this state during the past year has in many respects been phenomenal, and the extension of the industry is reflected in this year's entries made by new exhibitors.

The show of dairy cattle at the California state fair has come to be regarded as the most important held in the West. This year the show promises to reach a higher point than ever. It is perhaps true that during certain years each of the breeds has been represented in greater numbers than will be seen this year, but the statement can be ventured that at no other fair has there been a better balanced exhibit of the four leading breeds.

Preliminary entries indicate that there will be over 100 Holsteins in the show, 89 Guernseys, 86 Jerseys and 65 Ayrshires. And among the entries in each breed are a gratifying number of breeders who are making their initial show.

The show of beef cattle will be up to the standard of former years. The interest in pure bred beef cattle is tremenduous, and in some respects the year just closing has seen a wider expansion of the business than can be claimed by any other branch. Many new herds have been established and just as soon as these new herds get under way the annual show at Sacramento will put California at the top. At least two Shorthorn herds will make their first exhibit at Sacramento this year and one new Hereford herd will be on hand.

The exhibit of milking Shorthorns will be one of the features of the live stock department. Several strong herds will have entries.

The swine show promises to touch the high point of the fair's history. All the leading breeds, save one, will be found in the pens. Secretary Paine states that accommodations for swine will be taxed to the limit but that all will be taken care of.

Twelve of the leading Berkshire herds of California and Nevada have entered 150 head. The Poland-China division shows the heaviest entry list of any breed, over 300 head having been entered to date. The Poland-China breeders have made many notable additions to their herds and it is expected that the keenest sort of competition will be staged. About 30 herds will compete. Crowding close on the heels of the Poland men, 23 exponents of the Duroc-Jersey will be out with over 200 entries, and if every breeder makes good his claim the Duroc show will take high rank.

While numerically it is not possible for the Chester White breeders to make as large exhibit as the breeds just mentioned, a fine showing is forecasted.

The sheep show at Sacramento has never been developed to anything touching the importance that the sheep industry is entitled to. California is a great sheep state and all breeders should make it their business to show. This year's exhibit will be decidedly stronger than the 1918 show.

Visitors at this year's fair can be assured of a real draft horse show. All breeds will be seen and the quality promises to overtop any former show. Several new stables have entered and it is rumored that a few sensations are to be uncovered. The show of heavy horses will be a rebuff to those who figure the horse about to be relegated to the scrap heap.

In line with the heavy horse division the show of light horses promises a substantial increase.

FALFADALE FARM DUROCS

B. H. Wilkinson has just returned from a buying tour in Middle West Duroc circles. He bought the one boar that he went to see, Great Orion Sensation Jr. This fellow is an underyear pig, but he has developed size, smoothness and symmetry of conformation that will surprise the eye of the expert. It is no secret that Wilkinson had to put down $2000 to bring this young hog to California, but knowing that his sire Great Orion Sensation is the most talked of hog of the day, and believing that he has secured his very best son, there are no regrets as the price paid. Among others Mr. Wilkinson also selected a junior yearling sow out of same dam as Great Orion Sensation, Jr. These will be seen in the Falfadale show herd at the Southern California fairs. The Falfadale herd is rich in the blood of Giant Orion, Grand Golden Model and the Defenders and Pathfinders. Visitors at the ranch will find much of interest in the strings of young boars and gilts, and bred sows.

John M. Bernstein and W. L. Haag & Son

announce the

Banner Sale of Big Type Poland-Chinas

Wednesday September 17, 1919 Hanford, Calif.

In this sale the breeders will have the opportunity so long sought, that of securing strictly *Big Type* sows bred to strictly *Big Type* boars. Boars whose fame has preceeded them and whose blood is now demanded by the foremost Poland-China breeders.

The Yankee, Jr.
is a magnificient son of THE YANKEE, William Bros., "King of the Breed" boar of which Col. H. S. Duncan says; The Yankee is, in my opinion, age considered, the nearest my ideal I have seen in twenty-five years."

Sows bred to these two remarkable young boars will add prestige to the herd of every Poland-China breeder and should meet with approval by every one interested in

BIG TYPE POLAND-CHINAS

Young Jumbo, the senior Haag sire, and whose gilts, sold open, topped the last two Hanford sales, and President, the boar who put John Bernstein to the front in Polands, will assist The Yankee, Jr. and Lendorris Liberty Bond in making this the

BANNER SALE OF THE YEAR

Lendorris Liberty Bond
a son of that phenomenal sire Liberty Bond and out of Hercules Lady 4th, full sister to Mary Pickford, sold for $1950 in the last Glover sale. $2000 was refused for Hercules Lady 4th and a price of $20,000 placed on Liberty Bond.
Lendorris Liberty Bond tipped the scales at 315 lbs when seven months of age and not fat.

Write either breeder for catalog and further particulars.

This offering doubly immuned. H. M. Bernstein, Auctioneer

John M. Bernstein Hanford, Calif. **W. L. Haag & Son**

DR. HESS DIP and DISINFECTANT

A Dip that is standardized, of uniform strength and **GUARANTEED.** One gallon makes 70 gallons of dipping solution.

For Scab, Ticks and Skin Troubles

Dr. Hess Dip and Disinfectant cleans and makes the skin healthy. It is more than a Dip—it is also a Disinfectant. Use it freely about stables, hog pens and poultry houses to destroy disease germs and maintain good health conditions. Also for home use, in garbage cans, sinks, cesspools. Sold by 28,000 dealers on a money-back guarantee.

Dr. HESS & CLARK
Ashland Ohio

"Quality" Feeds

Nothing better. Made of the pure grains and meals. No filler, mill wastes or substitutes. Every sack tagged with guarantee of analysis and materials.

18-5 LAYING MASH, with Buttermilk. 18 per cent Protein, 5 per cent fat. High protein mash at a reasonable price

Quick-fat
Complete Hog Feed
with Buttermilk.

It makes 'em grow fast.

At your dealers or direct from the factory.

I. S. Chapman & Co., Inc.
Chapman Bldg., San Bernardino, Calif.

The Leading Live Stock Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

Cattle Ranges

ARE YOU INTERESTED?

in knowing facts about Central British Columbia Cattle Ranges and mixed farming, improved and non-improved, large and small? Write your requirements. resources.

J. H. BROWNLEE, Canadian Land Surveyor, Peoples Savings Bank Bldg.
Phone Main 2335J. Sacramento

Brighton Farm Herds

Registered Shorthorns
and
Berkshires---Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

WILL INVESTIGATE "SOFT PORK"

The problem of soft pork is one of the most important now confronting the hog growers of the United States. That a more definite knowledge of this question might be available congress has appropriated $20,000 to be used by the United States department of agriculture for a study of this question. It is the intention of the department to make a study regarding the effect of feeding both peanuts and soy beans to hogs. Possibility of hardening hogs fed on these feeds will be looked into to determine the maximum amount that may be fed in conjunction with other feeds and still produce hard pork. The department hopes by close study, covering a large number of hogs and several years' time, to determine some facts and solve some problems that are now facing the American farmer, because of the reduced price paid at the central markets for hogs supposed to be soft. Many of the agricultural experiment stations will cooperate closely with the department in these studies.

CAREFUL HANDLING WILL REDUCE HOG LOSS

Hot weather occupies a leading position in the hogs' calendar of horrors. During the season when the sun is at its best, hogs suffer unless protective precautions in the way of plenty of shade and a sanitary wallow are provided. Particularly in the case of shipping hogs by rail is mortallity heavy during the season when the mercury is rising.

When it is necessary to ship fat hogs to market at this time of year, such precautions as icing the cars. shipping at night as far as possible on special stock trains, and exerting every effort to expedite the movement of the live stock to the central market so that the animals suffer only a minimum of shrinkage in weight and discomfort during their railroad journey, should be practiced.

It is advisable to equip each car which is within about one day's trip of its destination with approximately 500 pounds of ice suspended at even intervals in burlap sacks by means of stout rope from the ceiling of the car. The motion of the car wil cause these sacks to swing to and fro so that the hogs are continuously showered with cold water during their market trip, until the supply of ice is exhausted. In case it is impossible to secure an abundance of ice, the stockman should bed his car with three or four inches of sand, which should be well wetted before the train starts and, if possible, it should be again moistened in transit.

The heat discomfort of hogs on the farm may be alleviated by locating the hog quarters amid plenty of shade and providing a substantial, permanent hog wallow made of concrete of a size adequate for the requirements of the herd. Arrangement should be made for draining the wallow at frequent intervals and adding fresh water to maintain it in a sanitary condition. If the wallow is constructed in an unsheltered position, a simple sunshade may be made of straw or boughs laid over a framework built about four feet above the wallow.

One advantage of the warm weather season is that, ordinarily, it provides an abundance of green feed and pasture crops for the hogs to harvest in the self-serve way. Every hog raiser should make maximum use of all available green feeds in the summer ration, as such materials are not only nutritious and fattening during the high temperature season, but they also are inexpensive material for the making of profitable pork. Furthermore, the porkers gain necessary exercise in rustling the green feed.

In the annual recording contest conducted by the American Hampshire Record Association, which begins January 1 and closes July 20, 42,894 pedigrees were registered. Iowa ranked first with 9532 and California was 13th with 580. California breeders represented in the published list were: Tom M. Bodger, Gardena, 16; Conejo Ranch, Newbury Park, two; L. A. Denker, Saugus, 58; Dr. F. Farrow, Redlands, nine; F. V. Gordon, Perris, 14; Chas. E. Shattuck, Los Angeles, 30; I. F. Stone, Ethanac, two; Francis T. Underhill, Santa Barbara, 129; total 580.

FILLS THE SILO — MAKES ALFALFA MEAL — CUTS DRY FEED

The ACME Cutter

PRODUCES SILAGE OF THE FINEST QUALITY.

It is convenient to operate. Its compact, rigid steel frame and 3-bearing cutter shaft practically eliminate vibration. This construction is found in no other cutter and makes the Acme the light-running power-saving machine it is.

The Acme is absolutely reliable and safe—the most durable feed cutter and silo filler made.

COMPARE THE ACME WITH OTHER CUTTERS. Send for our Acme Catalog. Study it. Your own good judgment will convince you that the best cutter to own and use is the Acme.

DE LAVAL DAIRY SUPPLY CO.
61 Beale St., San Francisco

INSURANCE AGAINST ACCIDENT

THE TRADE MARK MONEY MAKER REG U.S. PAT OFF Safe SILAGE CUTTER

—will enable you to put up your silage without accident to man or machine. The PATENTED SAFETY YOKE reverses the feed rollers automatically when the hands get too close and protects the operator; the PATENTED CUSHION DRIVE absorbs the shocks of operation on gears, traveling apron and rolls, and protects the machine.

We Can Ship Your INDIANA SILO immediately on receipt of your rush order.

Ask for the Free Book on SILOS

Written for Pacific coast conditions.

Simply and Strongly Made

The cutting and blowing is all done by one semi-steel disc to which the straight, easily sharpened and adjusted knives are attached. The shearing cut of the MONEY-MAKER is fast and positive; it makes silage that packs tight and close. Ample fan capacity for the highest silo. Light draft; easy to move.

Send for catalogue and prices now and make money with your MONEY-MAKER this season. Shipment made immediately.

ADDRESS DEPT. C

CHAS. K. SPAULDING LOGGING CO.
SALEM, OREGON

The Yankee, Jr.

Represents years of successful breeding big type Poland-Chinas. The Yankee Jr. is typical of his eminent sire. Several of his sons have gone to the leading eastern herds. California breeders can secure this blood in my big type bred sow sale September 17th.

JOHN BERNSTEIN Hanford, Calif.

Lendorris Ranch

Offers to discriminating buyers of big type Poland-Chinas animals of quality and breeding. Two such splendid sires as Young Jumbo and Lendorris Liberty Bond account in part for the popularity of our big type Poland-Chinas.

W. L. Haag & Son Hanford, Calif.
Bred Sow Sale Sept. 17, 1919

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

Matchless Big Bob

is matchless in more ways than one. Big Boned, High Backed, plenty of length and imparts these high qualities to his get. Mated with our Big Type sows his get are now in demand by breeders and pork producers. Write us for particulars.

Watch for his get in Poland-China Sale at Lodi, Sept. 19th

LAKESIDE FARM
Geo. V. Beckman & Sons, Owners
LODI, CALIF.

Have You Heard of the Great GOLDEN STATE KING?

Sire of size and quality Poland-Chinas, The high backed, deep sided, good footed, straight legged and right up on their toes, two good ends, good color and fine coated, long and tall, the kind that grow large, easy feeding and prolific, the fashionable kind.
Every one who sees them says they are great.
See them at the fair and you will say the same.
Some of them will sell at the breeders sale at Lodi, September 19, 1919.

W. A. Young Lodi, Calif.

Blue Valley Model

Our junior herd boar comes from a long line of strictly big type breeding. Individually he is all we could ask. We sell big type Poland-Chinas that give satisfaction. Write

Poland China Ranch H. B. Peake, Mgr.
San Bernardino, Calif.

Big Type Poland-Chinas

that are strictly big type. Big type sires—big type dams produce for me real big type animals. Usually sold down close but frequently have an exceptionally good one for sale. It will pay to keep in touch with me.

Eugene Miner Lodi, Calif

FUTURE HERD SIRES

A better lot of young boars, future herd leaders, cannot be found. Sired by Golden State King and Big Bone Bob. Breeders who have seen my young Poland-China boars are unanimous in pronouncing them excellent prospects. They are high backed, big boned and have plenty of stretch. Write me for description.

J. F. Lehman Lodi, Calif.

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

STOCK COMMENTS

By A. L. Spellmeyer

Every one bas seen a dog chase its own tail. The railroad men are asking for a raise of wages to meet increasing food costs. Food cost has increased greatly in order to run the railroads, pay higher wages, employ more men, etc., under government management. Where will the end be?

It has not been long since when we shipped a steer or a cow from Arizona to California for under $100 per car, or about $3 to $4 per head, including all expense. Having just completed a trainload shipment into California the advances figured are recent. Hardly an agent can give the rate or the tariff. Diversion charges are made necessary in many cases, feed charges are almost extortionate, handling is often rough and death loss results. Rates advanced 25 per cent to start with; war tax and other charges mount it up.

To ship the kind of cattle which formerly cost in freight and expense $4 per head now costs about $7.

Usually a steer is shipped several times during its career; as yearling to the steer ranges, and generally from the steer range to the feeder and thence from the feeder to the slaughter pens. The ordinary steer has about $10 of his value due to freight charges, and considering meal and feed often twice that. Then the products are shipped and cost more money. It is a certain conclusion that the raise in railroad rates has been the cause of 25 per cent to 35 per cent of the raise in food products. To be just to the railroads they don't waste the time they used to formerly fooling around loading, etc., but start, and when they start they travel. The men are usually pleasant and the agents obliging.

Beef is now 10.50, going up, with 15 cent winter prospects, but—during the past 90 days beef has dropped in California from 14 cents live weight to 9 cents for steers, or about 5 cents. On a 1200 pound steer this means $60. It means a great loss to cattle feeders.

These steers cost on an average $35 to $40 as yearlings. The steer man ran them two years and received from the cattle feeder about $95 for them. The cattle feeder spent $35 to $50 making them fat and they cost a total of probably $140, or over 11 cents. To sell them at nine cents means a definite loss of $25 or more per head. There has been no lowering in the cost to the consumer, although the decline has been 50 per cent more than the producer received for the yearling originally.

Now the tendency is for higher prices. It couldn't be any other way Of the 30 feeders who finish the 60,000 beef steers in this part of the Southwest not a third intend to feed again this year without definite price guarantees from the packers. This can only mean two things, either there will be a shortage of winter beef or the packers must feed cattle for themselves on a large scale as they have been doing in a smaller way.

SACRAMENTO-YOLO COW TESTING ASSOCIATION

The roll of honor of the Sacramento-Yolo Cow Testing Association for July shows 59 cows giving fat production for the month of over 50 pounds. The highest record cow is a Holstein belonging to F. W. Kiesel which made 71.1 pounds fat. This cow also held the record for greatest production of fat in one day, 2.52 pounds. The second highest record was held by a Holstein owned by J. Herzog, 70.3 pounds. Mr. Kiesel had 19 animals that tested above the 50 pound mark; Mr. Herzog had five. The record for daily production in milk went to a Holstein owned by Mr. Kiesel, which gave 70.7 pounds.

The cow giving the highest testing milk, 6.9, was a grade Jersey belonging to A. Krull. Mr. Krull also had the second highest test cow, 6.7, closely followed by a grade Jersey belonging to J. N. Dimmick, which gave a test of 6.5.

Two other cows showed butter fat test over 6 per cent, a grade Holstein owned by A. Pylman, 6.3, and a grade Jersey owned by A. Krull, 6.0. There were 26 other cows whose butter fat test came above 4 per cent. It is an interesting fact that of the 31 cows showing butter fat tests of over 4 per cent 29 were grades, but of the 59 giving total monthly fat productions of over 50 pounds 31 were registered animals and 28 grades.

CALIFORNIA DAIRYMEN TO GO EAST

Arrangements are being made for a special delegation of California dairymen to attend the National Dairy Show to be heid in Chicago, October 6 to 12.

Educational exhibits will be shown, featuring the necessity of dairy products in the maintenance of health and development of men, women and children. After viewing these exhibits one cannot fail to get a new vision as to the importance of milk and its products in their relation to the development and progress of a nation The latest equipment for farms, barns and creameries will be on display. Labor saving devices and new methods and means of handling all lines of business in connection with the dairy industry will be in evidence.

As to arrangements for attending communicate with Sam H. Greene, secretary California Dairy Council, 268 Market Street, San Francisco. California should send a large delegation to Chicago to represent her second largest industry in the state.

SAN FERNANDO DUROCS

San Fernando Valley has rapidly forged to the forefront as a Duroc breeding center. Some of the more pretentious breeding herds of today are the Ireland Ranch herd at Owensmouth, with the noted grand champion boar Cherry Volunteer 2nd at its head, Hewitt Brothers' herd at Van Nuys, the coming boar Top Sensation 1st in service; Elliott-Brant Rancho herd. Owensmouth, with the 630 pounds 16 months May Rose King, son of King Orion, doing service; W. Chas. Swett Ranch near Van Nuys; J. C. Craig, Owensmouth; L. R. Hitchcock, Van Nuys; also L. Leest, J. L. Stevenson, D. H. Pores, and C. M. Nance, all of Van Nuys. These last named herds are founded on the blood of the noted junior champion boar Orion King Gano.

A strong local breeders' association has been formed and a combination bred sow sale is arranged for a January date.

KLAMATH RIVER COW TESTING ASSOCIATION

Clarence V. Castle of the University Farm, Davis, sends report of the Klamath River Cow Testing Association, showing for the month of June 30 cows in the honor list, that is, with records of 50 pounds or better of butter fat. The honor cow with the record of 74.3 pounds of fat is from the herd of C. P. McBeth. In the same dairy were four other cows with better than 50. Other dairies on the honor roll were those of Sophie Blake, Paul Bravo, G. B. von Alvensleben, J. H. Weber, Victor Macfarlane, P. F. Peini, Rissighini and Marosoli, J. R. McMillan, Sero Del Ponte, V. M. Del Ponte and A. W. Green. The official tester for the association is Percy Helgested. The secretary is E. L. Lockwood.

WOOL BREAKS MONTHLY RECORD

The total amount of wool consumed during June was 55,000,000 pounds, grease equivalent, which exceeds that of any other month this year and is more than twice the amount consumed in February, according to the monthly wool consumption report just issued by the bureau of markets. June consumption represents an increase of six per cent over the amount used in May and 22 per cent over the amount used in April. Monthly consumption of wool bas increased steadily since February, which is said to indicate continued activity in the textile industry.

Total amounts of wool used during June, 1919, by condition, in pounds were: grease, 40,332,664; scoured 6,064,243; pulled, 2,452,985.

FIRST TB ELECTION ORDERED

Tho first election in the United States to decide whether or not a county should eradicate tuberculosis from its herds of cattle has been ordered to be held in Clay County, Mi-

Warranted to Give Satisfaction

Gombault's

Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of **Caustic Balsam** sold is warranted to give satisfaction. Price $1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

JERSEYS

Jersey Bull
For Sale
A fine straight one, bred right, priced right
S. F. Williams
Chico, Cal.
Member Orland Jersey Cattle Club

Venadera Herd
Offering four daughters of the great bull Altama Interest, 7 to 10 months old. All from Register of Merit dams.
Guy. H. Miller
R. 1, Modesto, Cal.

All My Records
Are made under ordinary dairy conditions
The Farmers Cow is
The Jersey
Young Bulls For Sale
C. D. Hayworth
Modesto Cal.

Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
Modesto - Cal.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
El Monte, Cal.

Duroc-Jersey Pigs
from both
Eastern and Western Registered Sows of Best Blood Lines. Sired by LEADING BOARS
Ranch: Van Nuys, Calif.
W. Chas. Swett, 7256 Franklin Ave., Hollywood Calif. Phone Holly 4115

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

sissippi, on September 2. The election was ordered by the county board of supervisors after a petition asking for it had been presented by a group of citizens.

The results of this election will have much more than local interest, because the election may be the forerunner of hundreds or thousands of others in other sections of the country.

DIRTY MILKING MACHINES UNSAFE

"Unless they are kept in a clean and sanitary condition they are a menace to the quality of the milk drawn by them," says R. M. Washburn of the dairy division, University Farm, St. Paul. "To keep them safe they not only require thorough cleaning in warm, soapy water, with suitable brushes to reach into tubes and crevices, but they must be kept when not in use in some disinfecting solution. Yet to get results it is not necessary to buy expensive germicides; old fashioned chloride of lime will serve every purpose. This is made as follows:

Stock Solution

"Dissolve a 12-ounce can of chloride of lime (calcium hypochlorite) in three quarts of water; let settle, pour off the clear liquid and put it in a jug or dark glass bottle and keep tightly corked.

Working Solution

"Add one pint of stock solution to 100 gallons of water or one-half pint to 50 gallons, or smaller amounts in proportion. This should be kept 'alive' by the addition daily of stock solution at the rate of about one ounce to each 25 gallons of the working solution.

How to Use

"The teat cups and tubes should be plunged entirely into the solution and all pockets of air in the tubes emptied so that the water may come into actual contact with the walls of the rubber.

"To sterilize milk bottles, pails and cans, the same working solution may be employed and will be found generally more effective than the hot water method commonly used.

"The milking machine is a great help or a great hindrance to quality. It all depends on how it is handled."

SUNFLOWER SILAGE

Sunflowers have recently been tried out for silage. Mr. Ince of the North Dakota agricultural college states that it has a number of advantages which should make its successful employment in this way of great value. Namely, it is a plant which can be grown in northern latitudes and it is capable of yielding a large amount of succulent material for feeding purposes. Montana has led the way in a careful scientific investigation of the possibilities of this crop and the trials seem to indicate that sunflower silage is a palatable feeding stuff of excellent quality. In the summer of 1918 some sunflowers were cut and placed in a layer between corn in one of the silos at the North Dakota experiment station. The analyses show that the sunflower silage was considerably richer in protein than corn silage and nearly equal in the other nutrients. This is but one trial. The results of other trials are needed before any grand conclusion can be arrived at. A. J. McFadden of Neche, North Dakota, filled one silo with sunflowers last fall and fed it to beef cattle. He states that it is just as good as corn silage and the cattle like it.

HOW WE GET NEWS

The "n" comes from the chilly north;
The "e" from the east, they tell me;
The "w" comes from the golden west;
And the "s" from the south, you see.
So news that spreads from mouth to mouth
Comes from the north, east, west and south.—A. F. Caldwell.

Twenty years ago gasoline sold for eight cents a gallon.

And the butcher, when you bought a fifteen cent sirloin, threw in a piece of liver and some suet and tossed the dog a bone.

AYRSHIRES

AT PUBLIC AUCTION

The Preston School of Industry, Ione, California, will disperse its entire herd of registered Ayrshire cattle at public sale

Tuesday, September 16, 1919
State Fair Grounds
Sacramento, California

The herd was founded upon animals secured from some of the best known herds in the United States and Canada, and the original animals and the increase have been well cared for and handled in the School herd. The offering will contain approximately

60 Registered Ayrshire Cows, Heifers and Bulls

This will be a rare opportunity for the buyer wanting a few registered females or a good bull.

See the Exhibit of these Ayshires at the State Fair

Auctioneer:
Col. Ben A. Rhoades
Los Angeles, Calif.

Management
Californie Breeders Sales and Pedigree Co.
J. M. Henderson, Pres. C. L. Hughes, Sales Manager
Sacramento, Calif.

Worth Investigating

Our recent purchases of some of the best bred Duroc-Jerseys from the leading eastern herds enable us to offer animals of true Duroc type, quality and breeding. When you think of Duroc-Jerseys, think of

The Key Herd of the Pacific Coast

Just now we have a few sows and gilts, bred to an outstanding boar that will afford you a profitable investment at the price we are asking. Young pigs of both sexes. A few service boars. We will be pleased to send you full particulars,

H. P. Slocum and Son
Willows, California

WHAT DO YOU WANT?

We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.

George Junior Republic Chino, Calif.
also Breeders of Holsteins

Duroc Jerseys In San Diego County

GREAT MODEL---The Most Popular Sire in the West

Winsor Ranch, Bonita, Calif. Address R. K. Walker

BERKSHIRES

are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser.
High class stock for sale at all times.

Geo. A. Stingle El Monte, Calif.

Save Your Hogs

Raise Your Hogs and Cattle at a Profit
Assist Nature by Feeding
Economy Stock Powder
A general conditioner, a worm expeller and a disease preventive.
Send for FREE SAMPLE and our BOOK on LIVE STOCK.
ECONOMY HOG & CATTLE POWDER CO.
Hearst Bldg. San Francisco, Cal.

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

Rancho De Los Cuevitas

Breeders of D. S. Polled and Horned Herefords. Bulls, one to two years old; heifers, one to three years old; one to a carload for sale.
Herd headed by Variation 17th 447159 (3238), a Mossom Boyd bull that weighs more than 2200 pounds.
JOHN B. BOWMAN, McINTOSH, N. M.

65 Registered Holsteins at Public Auction

Stockton, California

Thursday, September 18, 1919

From the well known, highly bred herds of

Henderson Company — Sacramento, Cal.

Bonita Stock Farm — Lodi, Cal.

The females in the sale are a richly bred lot, including a substantial number of A. R. O. cows and heifers and daughters of good record cows, and among them are a number of granddaughters and great-granddaughters of Pontiac Korndyke, King of the Pontiacs, King Segis, and other great bulls of the breed.

Except a very few unbred heifers, every female in the sale is either fresh or well along with calf

These cows and heifers are bred to such great bulls as King of the Black and Whites, who has the largest list of A. R. O. daughters of any bull on the Pacific Coast, King Pontiac Segis Inka, a richly bred son of King of the Pontiacs, King Lillian Walker Segis, son of King of the Black and Whites, Supreme Glista Pietje, and others.

Bulls in the Sale

The offering will contain an excellent selection of young bulls, some ready for service, by such sires as King of the Black and Whites, King Pontiac Segis Inka, King Lillian Walker Segis, Supreme Glista Pietje, and others of excellent breeding. This sale will be one of the real opportunities of the season for breeders and dairymen to secure herd bulls.

Every animal positively guaranteed to be a breeder

No animal in this sale is tuberculin tested

The sale will be held at DARBY'S BARN, corner East Jefferson and Pilgrim Streets, Stockton, California, where the cattle will be on exhibition two days prior to sale. You are cordially invited to come and look them over before sale day.

Catalog free on request to management.

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneers:

Col. Ben. A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare

Don't You Forget That

Finderne Soldene Pontiac Valdessa

The Bull with the Backing

Is the Son of Finderne Soldene Hengerveld

Butter in 7 days 35.34 lbs. **Butter in 30 days 136.82**

World's Butter Record for a heifer with first calf.

That she is a sister to Finderne Holingen Fayne. Butter in 365 days at 3 years 1395 lbs. World's Record 3 year old.

That she is a sister to Finderne Mutual Fayne. Butter in 365 days at 27 months 12,001 lbs. World's Record 2 year old. (Will this record ever be excelled?)

That she is by a brother to Segis Fayne Johanna. Butter in seven days 50.68 lbs. World's Record when made.

That the average seven day butter record of five daughters of her sire, all under 4 years, is 36.43 lbs.

That her sire has three daughters whose average butter record for one year is 1223.66 lbs.

That his dam and his sires' two nearest dams average butter for seven days is 41.06 lbs. Average for 30 days is 157.53 lbs.

That his dam and his sires' two nearest dams were All World's Record cows.

That his sire is King Valdessa, whose two nearest dams were both World's Record cows. Their butter average for seven days is 43.03 lbs. Their butter average for 30 days is 167.9 lbs.

That the names of ten World's Record cows and seven bulls that have each sired one or more World's Record cows appear in his pedigree.

That we have his sons and daughters for sale. One to a car load. Also cows and heifers bred to him. 225 head in the herd to select from.

CAN YOU BEAT IT?

Geo. A. Smith & Son *Corcoran, Cal.*

WHERE TO BUY YOUR

herd bull. We can be of material assistance to you in solving this question.

Sir Veeman Korndyke Pontiac

Our senior herd sire is a son of Sir Vecman Hengerveld, the sire of more 30 pound cows than any living sire. Five other sires bred for production. A good sire will increase your milk production. We have increased ours 100 per cent the past two years. We can sell you a young bull at a very reasonable price.

BURR FARM, Los Angeles, Calif.

Breeders of Registered Holsteins

Farm at E. 26th St. and Downey Road

Business Address, 8th St. and Towne Ave.

GOING FAST, SO ACT QUICKLY

Five young Holstein bulls have left Sunnyside Farm past month to head other herds. We have for sale a few select sons of Sir Veeman Korndyke Pontiac by Sir Veeman Hengerveld, the sire of more 30 pound cows than any other living sire. Full description and price on request.

R. F. Guerin Breeder of Holsteins Visalia, Calif.

The California Cultivator

Weekly—24 to 48 Pages One Dollar per Year

Live Stock News Notes

SALE CALENDAR

Ayrshire Cattle

September 16, Preston School of Industry, Sacramento.

Holstein Cattle

September 18, Henderson Company and Bonita Stock Farm Stockton.

October 8, Agee Brothers, Brawley.

Shorthorns

October 16, Dr. H. M. Eiberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

September 17, John M. Bernstein and W. L. Haag & Son, Hanford.

September 19. San Joaquin County Poland-China Breeders' Association, Lodi.

September 30, Dimmick Brothers and DeRaad, Hanford.

October 4. Marsh & McCracken, Modesto.

October 7, Bassett, Ross and Crawshaw, Hanford.

October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.

October 18, Trewhitt, Vaughan and Nehls, Hanford.

October 21, Tulare County Poland-China Breeders' Association, Tulare.

Harold W. Rice, a prominent Hereford breeder of the Hawaiian Islands, who is now in California, has recently purchased from the University of California two yearling Hereford bulls. He secured California Prime Donald 2d sired by Hopeful Prince 2d, reserve champion at the Panama-Pacific Exposition, and out of Miss Sophia, one of the best producing cows in the University herd. California Prime Donald 2d is a full brother to John A. Bunting's herd bull California Prime Donald, grand champion at the 1918 California state fair. Mr. Rice also selected another son of Hopeful Prince 2d. During the past year Hawaiian breeders have purchased a number of California Herefords.

Manager E. Lovell of the Blackhawk Ranch, Diablo, reports the sale of four young Shorthorn bulls to Harold W. Rice of the Hawaiian Islands. It is believed that this transaction represents the first sale of California Shorthorns to the Islands. The four bulls sold were: Blackhawk Radium, by Roan Radium, the Blackhawk bull, and out of a Victoria dam sired by Village Knight; Blackhawk Beau, by Roan Radium and out of a Clara dam; Blackhawk Beau 2d, by Roan Radium and out of a Violet dam and one sired by Princely Sultan and out of a Lady Belle dam. The Blackhawk Ranch is one of the newer Shorthorn herds established in this state and the owners, Messrs. Easton & Ward, are to be congratulated on the above sale.

Halford & Hassler, Poland-China breeders of Manning, Iowa, have sold their boar Mabel's Jumbo to H. W. Hey of Polo, Illinois, for the record price of $18,000. The sale was at public auction. Mabel's Jumbo was sired by Long Jumbo and his dam was Mabel Tecumseh.

William Wrigley, Jr., of chewing gun fame, recently purchased the Poland-China boar The Clansman from L. H. Glover of Kansas City, Missouri for $15,000. The Clansman was sired by Grand Big Orphan, by Grand Master, and he is out of the sow, Kramer's Kind.

George Waltmeyer, a well known Duroc-Jersey breeder of Iowa, has accepted a position with the Conejo Ranch, Newbury Park. Mr. Waltmeyer will be in charge of the hog department.

Harvey M. Berglund, Dixon, has sold a yearling Duroc boar to J. D. Rowe & Son, Davis; a spring boar to C. W. Scott of Winters and a young boar to E. Rohwer of Dixon. Mr. Berglund, it will be recalled, recently purchased the entire herd of Durocs owned by Fred M. Johnson of Napa.

Owen Duffy, business manager of the Napa state hospital, has recommended to the board of managers that the institution establish a herd of registered Herefords. The Napa Holsteins have made an enviable record, and it is to be expected that the venture in beef cattle will be equally successful. In the event that a Hereford herd is established a precedent will be set for other state institutions, for, with the exception of the University, none of the various institutions have attempted to develop herds of pure bred beef cattle.

It is impossible to forecast the results of any public sale with a degree of accuracy, but there is every indication that one of the most successful Poland-China sales in the West this fall will be the one to be held by Haag & Bernstein at Hanford, September 17. Few boars have created more interest, or promise to be greater factors in the promotion of Poland-Chinas in this state, than The Yankee, Jr., a son of The Yankee, in the herd of John Bernstein; and Lendorris Liberty Bond, a son of the famous Liberty Bond, in the herd of W. L. Haag & Son. Recent Eastern sales indicate that there is a very strong demand for the blood of the sires of the two boars referred to. Many of the leading herds in the Middle West have sons of Liberty Bond and The Yankee at their head. The sows in the sale, that are bred to the two boars featured, represent all that is popular in big type breeding and will no doubt be appreciated by the breeders of this state.

A recent addition to the large herd of Poland-Chinas maintained at Lakeside Stock Farm, owned by Beckman & Sons, Lodi, is a junior yearling gilt by Bob's Equal and bred to Liberty Bond. It will be remembered that in a recent sale sows bred to Liberty Bond sold for an average of $823. Sherwood Beckman who has the management of the herd, writes that this new addition to the herd is extremely long, smooth, with a good back and especially good on her feet. He adds they will have a full show herd at Sacramento.

Duroc breeders will regret to learn that Donald H. Graham of Lancaster will be unable to show his Durocs at the state fair owing to circumstances over which he had no control. Mr. Graham has one of the top boars in this state and breeders were anxious to see him at Sacramento. The herd will be shown at the Los Angeles Live Stock Show.

Due to a number of unavoidable reasons the show of Mills' Berkshire Farm will not be out at Sacramento this year. Following a change of herdsmen it was decided not to attempt to fit a herd. It is possible however that the herd may be represented at the later shows.

R. J. Yates, who breeds Poland-Chinas on his ranch near Orland, has finally decided to show at the state fair. He does not expect to have out a full herd but will exhibit in the younger classes.

Frank E. Collier of Elsinore has at the head of his herd of Shorthorns the pure Scotch bull Orange Flash from the well known Diblee herd at Santa Barbara. Along with F. L. Hall of Perris Mr. Collier has made some recent purchases from a breeding herd in Arizona.

Secretary W. W. Van Pelt of the Southern California fair at Riverside is distributing the premium list for the seventh annual fair and live stock show which includes the dates October 7-11. Prospects are reported A-One for a big show in all departments.

Ord L. Leachman

AUCTIONEER

Sacramento

(1004 5th Street)

My services are available to all who plan to sell live stock, farm equipment or real estate, and who want the high dollar. Pure bred live stock sales a specialty. Terms reasonable. Write or wire for dates.

California Breeders

have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales

CALIFORNIA BREEDERS SALES & PEDIGREE CO.,

C. L. HUGHES, Sales Mgr. Sacramento, Cal.

NOW IS THE TIME!

When your summer crops begin to ripen then is the time for a silo. A safe, sure and profitable means of preserving the full value of your summer's work. Much of the food value is lost when fed in the old manner. Take corn, for instance—the stalk is worthless when it becomes dry and 50 per cent of the blades and husks are lost in handling. Save the entire plant by putting it in a silo. Your stock will eat it to the last ounce. More nutrition, more milk, more profits.

Let a "SIMPLEX" take care of your stock. Don't eat up your profits by paying the usual "out of sight" winter prices for dry grain and mill feed. Fill a "Simplex" now and your feed worries are over. The

SIMPLEX SILO

is indestructible. Staves are of Douglas Fir and one piece—the height of the silo. This is a distinctive feature. No weak end-joints to leak and cause trouble. Hoops are made of new steel. Doors are of the two-way hinged type, air-tight and will not sag. The "Simplex" is fitted with the Crisell Tangent Top, which automatically keeps the Top in a true circle under all conditions.

Heavy galvanized cables are attached to top and are crossed diagonally to foundation anchor bolts imbedded in the foundation. This forms the SIMPLEX WINDPROOF INTERLOCKING ANCHORING SYSTEM.

Fill Your Own Silo

The PAPEC ENSILAGE CUTTER has a one-piece solid semi-steel frame. No wood or bothersome rivets to cause trouble. The Papec has six fans instead of the usual three or four. They are attached to the cutting wheel and "throw and blow" a steady stream of ensilage. Papec cutters require less power to operate and will elevate to the top of the highest silo, operating at their low speed of 600 to 700 revolutions per minute.

The Papec is a money-saver and a money maker. We guarantee it to do better work at a lower upkeep cost and operating expense than any other.

The "Simplex" Silo and the Papec Cutter are two money makers. They are permanent investments and will yield big returns each year. Send for our descriptive folders.

See Our Exhibit at California State Fair, Sacramento

Mail This Coupon Today

SANTA FE LUMBER COMPANY,
18 California St., San Francisco, Cal.

Please send me folder describing Simplex Silos; also information about Papec Ensilage Cutters.

Name .....

Address .....

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Small — Light Weight

Guaranteed oil burner under all conditions.
Oil cooled—no evaporation—no freezing.
Low speed heavy duty motor.
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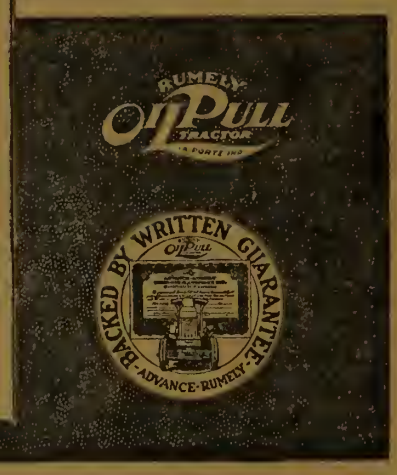

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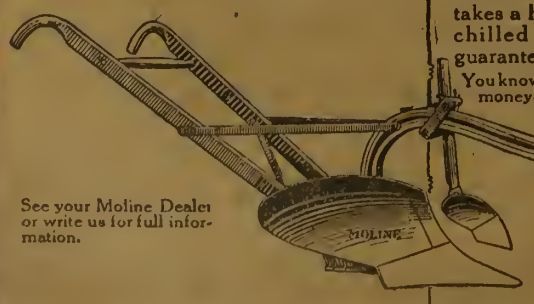
We will replace, free of charge, f. o. b. factory or branch house, on receipt of broken parts, any Moline Chilled Moldboard, or Moline Malleable Frog, broken in actual field use.

We can do this because Moline Moldboards have a soft, tough, greyback, which resists shocks and strains, yet the face of the Moldboard is glass hard and takes a high polish. No other chilled plows have such a guarantee.

You know this guarantee will save you money—insist on getting the better guaranteed Moline Chilled Plows.



See your Moline Dealer or write us for full information.

Moline Plow Co.
Moline, Ill.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Slobbers

My young rabbits have what I am told is slobbers. I can find no cankers in their mouths but they seem to slobber a clear secretion which causes tiny sores under their necks and on their front paws. They just seem to waste away and die. One man told me to put salt in their mouths. I have tried that and also mouth washes and have washed the necks. One mother got it, but I saved her. Have been able to save only a few of the younger ones. I have comfortable pens under a big oak tree. They have plenty of sunshine but shade during the heat of the day. They have a great variety of feed, always barley or alfalfa hay, a moderate amount of fresh greens, corn, weeds, vegetable tops, string beans, etc. I do not give them too much so it does not spoil in the pens. Until recently I did not give them salt. Now I have ground cattle salt in the pens but only a few eat it. The trouble seems to be spreading and I am afraid I may lose some of the big rabbits. Am sure some good rabbit articles would be of interest to your readers for many are raising them now.

Slobbers is a disease caused usually either by injudicious feeding or weakly constitution. Well grown youngsters from vigorous mothers seldom are troubled. One cause of sickness may be inbreeding. The most effective cure, once the disease appears, is one tablespoon each of powdered ginger and chlorate of potash added to eight ounces of water. This is well shaken. Give teaspoon doses twice daily for a week and feed on bread soaked in milk, crushed oats, or hay. Do not feed roots of any kind nor any green succulent feed.

Walnut Tree Overfertilized

Will large English walnut tree be likely to suffer if chicken park is built around it? The leaves on tree shrivel up just as though it had too much strong manure. It seems rather that it would help the tree.—Subscriber, Long Beach.

It might be that after several years of parking a large number of chickens around a walnut tree it might suffer from overfertilization. However, with an abundance of water and thorough working of the soil with the admission of air we believe such parking can only be beneficial. A tree on such enriched land makes rapid growth and consequent heavy demands for water. This may be the reason for the apparent suffering of the tree at the present time, lack of irrigation and cultivation.

Wire Worms

The last two seasons our potatoes have not been fit for use. As soon as they are out of the ground something seems to eat the vine, as it turns yellow and the growth becomes stunted. The last crop was bothered too with a worm in the ground that ate the potatoes. There were so many of these worms that the potatoes are almost unfit for use. If you can give me any information as to way of treating these potatoes or vines I will greatly appreciate it. Also is there any difference in planting potatoes in the same spot for two succeeding years?—Subscriber, Oxnard.

This question was submitted to D. F. Reichard and he answers that presumably the Oxnard subscriber is having an experience with wire worms which are very difficult to eradicate. The only suggestion with wire worm infested land is to plant other crop or let land lie fallow until the worms have starved out.

Melons Dying

A Buena Park subscriber brings melon vines which wilt and die so far as can be seen without any reason They were submitted to Prof. Fawcett of the State University and he suggests that it is possibly due to fusarium wilt.

Dried Rabbit and Chicken

Can you give any information regarding drying of the meat of rabbits and chickens, that is, something similar to dried beef?—Subscriber, Los Angeles.

This question was referred to Arthur W. Christie, University of California, and he replies:

"After the rabbit or chicken is cut into pieces and cleaned it should be soaked over night in a weak brine. Then remove and smoke for 24 to 36 hours. Then dry over a stove, in the sun, or in an evaporator. If dried in the sun it is desirable to sprinkle the meat with a little pepper to repel flies. A small smoke box can be made out of a barrel or dry goods box. Corn cobs are the best substitute for hardwood fuel. Soft wood should never be used."

Fumigation Marks

A subscriber at Santa Barbara sends lemons seriously marked with large reddish brown spots with chocolate colored margins, while around the spot the partially colored fruit shows a deeper green. No information is given as to former treatment of fruit or tree, but our guess is that these trees have been fumigated and these spots are indications that weather conditions were not favorable and a strong dosage of gas has been the cause of the spots. Plainly they are the result neither of work of fungus or insects.

In sending specimens for determination of trouble subscribers should give full particulars of past treatment of tree and fruit.

To Acquire Water Right

I have 40 acres of land in Tehama County, the nearest part being 300 feet from the Sacramento River. I am writing for information concerning a government right to use water from this river for irrigating purposes. I will need about 800 gallons per minute. What will the cost be for such a right? How shall I go about it. Please give me all the information you can?—Subscriber, Huntington Beach.

This question was referred to W. A. Johnstone of the State Water Commission and he writes:

"Replying to the inquiry of your subscriber about how to proceed to acquire a right to the use of water from the Sacramento River for the use of his 40 acre tract: It will be necessary for him to proceed in the same way as for the use of any other water which may be appropriated. He must file an application with the state water commission, forms for which may be had on application, setting out briefly the amount, use, etc. A statutory filing fee of $5 must accompany the application, with a map showing the location of point of division ditch or pipe line, etc. In the case mentioned the principal obstacle to be surmounted is the acquisition of a right of way over the intervening 30 foot strip of land between his land and the river, and a pump site. Such a right of way is a legal necessity and as all of the land there is in private ownership it is a matter of negotiation with the owner.

"In 1911 the legislature passed an act purporting to give to an individual irrigator, on the grounds of public necessity and convenience, the right to condemn a right of way for irrigation ditches and pipe lines. The act was sustained by the lower courts but was declared unconstitutional in the appellate court in what is known as the Gravelly Ford case. An effort was made to reenact this law during the last legislature, but it failed probably because of misunderstanding of its purpose. The bill was approved by the members of the state water commission, and it is to be hoped that such a measure will later become a part of our law."

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Judgment

B obtains a judgment against A. A lives on property which is supposed to belong to him, the record title of which is in C to whom it is assessed. A, however, pays taxes on the personal property which is mortgaged. Can B levy execution on any part of the crops in payment of his claim? A is married and has a family living on the property.—Subscriber, Chowchilla.

If you have proof that the property belongs to the judgment debtor, execution may be levied upon this property, at which time the party who claims the property as his will undoubtedly put in a third party claim to the sheriff, and if you wish to persist in your execution sale, you will then be required to put up a bond to the sheriff in double the value of the property, and sale may be made; it is then for the party claiming ownership to bring action on the bond, and in that way the title of the property will be determined. Another method would be to bring suit upon your judgment against the judgment debtor and the party appearing to own the property, and have it determined in such suit that the property of the judgment debtor and his interest therein be made subject to the judgment.

License for Street Stand

May I place a stand for the sale of honey or other products on a public place in a city or county? Do I have to buy a license therefor, and what will the license be? — Subscriber, Owensmouth.

There is no provision against the establishment of such stands other than that certain cities may require you to take out a license therefor. As the amount of these licenses, their term and period, vary with every locality, you should ascertain from the city authorities what the rule is in the particular locality.

Wife Refuses to Move

My health has compelled me to leave the northern part of the state for Southern California. My wife wishes to stay. What can I do?—Subscriber, Walnut Creek.

It is probably impossible to force your wife to come with you; but, as the husband is considered, in law at least, to be the head of the house, he is entitled to choose any reasonable place or mode of living, and if the wife does not conform thereto, it is desertion; in case you provide such a reasonable place and the wife does not come with you on your request, she would not be entitled to receive any further support from you. It is probable that in divorce proceedings thereafter to be commenced by you, or in proceedings for the respective custody of the children, that you could procure an order requiring the children to be placed in your custody in your new place of residence, but there is no rule whereby you can cause the law to move the wife.

Community Property

According to the terms of the new community property law, can a husband or wife will their share of community property to children by former marriage without the consent of the other?—Subscriber, Watsonville.

Either husband or wife may dispose of his or her half of the community property without the consent of the other in favor of the other spouse or lineal descendants of the testator, that is to say, the husband could will property to his children by a former marriage, the wife could will property to her children by a former marriage without the other's consent.

Attention is called to the general review of recent legislation along this line in an article in this issue.

COMMUNITY PROPERTY LAW

In view of the discussion now going on with reference to the so-called community property law, which appears to be in a muddle, the following brief statement, which introduces an extended article in California Taxpayers' Journal, is of interest. It sets forth the points clearly, in nut-shell style:

"The club women of California desired at the 1919 legislature to have laws enacted giving the wife the ownership of one-half of all community property and giving her the right to dispose of the same by will; also giving the husband or wife of an insane person power to sell community property when necessary. They succeeded in having four bills passed to accomplish these results.

"Senate Bill 680 gave the desired relief to the spouse of an insane person and was approved by the governor and is now the law.

"Assembly Bill 698 gave the wife an equal ownership with her husband in the community property, and Assembly Bill 697 provided the procedure by which it might be determined by the court whether or not the wife left a will. Both of these bills were vetoed by the governor. Thus the attempt to give the wife ownership of one-half of the community property failed, and her rights are no greater than they were before.

"Senate Bill 471 provided the method by which the wife might dispose of her half of the community property by will. The governor signed this bill, but it was delayed by a referendum petition and must be voted upon by the people at the general election in 1920. This bill does not appear to be effective because the wife cannot dispose of property which she does not possess, but a discussion of the construction to be placed upon a statute is necessarily one to he maintained by members of the bar."

"NEUROPE" STAMPS

On the day the peace treaty was signed President Wilson said that the treaty "liberates great peoples who have never before been able to find the way to liberty." These great peoples have organized political governments during the period of reconstruction, and these governments are being called collectively "Neurope" by collectors. These new nations have thus far issued more than 700 varieties of stamps, some of which are already worth several hundred dollars each for the reason that they were in circulation only a brief time and because also only limited quantities of them were printed pending the appearance of definitive or permanent labels. Generally speaking, these New Europe stamps fall within the "war stamp" classification, as the war was responsible for their appearance.—Boys' Life.

The University of Arizona is issuing through its agricultural experiment station Bulletin 87, "Insect Pests of Interest to Arizona Cotton Growers". It is written by A. W. Morrill, former entomologist for the state. The bulletin has a wealth of ilustrations and full description of all the cotton pests of that section.

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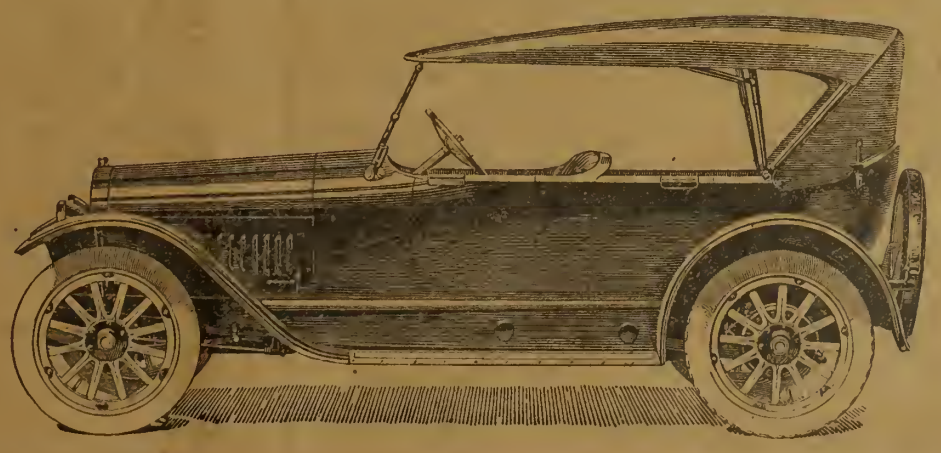

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Choice tracts $100 per acre.
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40 Acres, Good Soil; fine for berries, vegetables, poultry and cows; plenty of water and wood. H. Koenig, Fort Bragg, California.

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For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

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For Sale—Waterloo Boy tractor, just completely overhauled, engine rebored and guaranteed in perfect mechanical condition. Good reason for selling. Also small Bean thresher. P. J. Weisel, Santa Fe Springs, California.

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FOR SALE—REBUILT WINDMILLS, tanks, pumps, ranch tools, irrigating pipe.
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Do as much work as new at half price.
WINDMILLS 8, 10, 12, 16 ft. sizes.
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Have just purchased
160 head of registered Durham cattle
27 are of the Durham milking strain
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30 stallions and jacks
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For information write, wire, or phone our breeding and sales barns
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Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Nevada Guernsey Farm, Yountville, Napa Co., California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

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Giant Type Berkshires.
We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.
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GRAND NATIONAL CHAMPION
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Do you realize this is the only opportunity you have ever had on this Coast to secure the pigs of a Grand National Champion? Duke is breeding them long and thick. He is getting old and may die any time. You are started right if you get his pigs. A very good April boar pig sired by Duke and from a half sister of Rancons Rival 2nd, cholera immune, $35.00. Sandercock Land Co., in charge of Natomas Sales, 23 Montgomery Street, San Francisco, California.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Glantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

Billiken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

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Duroc-Jerseys at Ireland, home of Cherry Volunteer II and Ireland's Joe Orion. Ranch at Owensmouth, California, City Office, 1219 Brockman Building, Los Angeles, California.

A Few Poland-China Boars ready for light service by King's Big Bone Leader and President. Priced right. Full particulars on request. John M. Bernstein, Hanford, California.

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Pathfinder and King's Col. Stock, immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

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Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

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The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

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Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

A. R. Bardrick, breeder of Duroc-Jersey hogs. Stock for sale. Oceano, California.

El Profito 296867, a 900-lb. line bred Big Timm boar in service. Write. Viola L. Renwick, Santa Barbara, California.

Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

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Baby Chicks From My Carefully Selected, thoroughbred flock of S. C. White Leghorns. I am booking orders now for a limited number of first class chicks August and September delivery at $15.00 per 100. Make your arrangements early. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Poultry for Profit—A 226 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 116 N. Broadway, Los Angeles.

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S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Petaluma Hatchery — Established 1902. Can ship day old chicks to points reached in three days. Four varieties. Why not have the best? Free fall circular. L. W. Clark, Petaluma, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

For Sale — S. C. White Leghorn chicks, $12.00 per hundred. Book now for September. We ship by express C. O. D. Welty's Hatchery, Petaluma, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

Baby Chicks—Order fall chicks now from our large heavy laying S. C. White Leghorns. Tupman Poultry Farm, Ceres, California. Box 7 "C."

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Exchange 1 60-egg incubator new, for 2 young laying hens. No. 27 Shawmut, California.

Wanted—Pullets, any kind and age. Pay 40 cents pound. Pioneer Hatchery, 320 South Spring Street, Los Angeles.

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There are Advantages in Borrowing Money secured by real estate from a strong reliable and well managed company of long standing, organized to transact a mortgage business exclusively. You can deal direct with this company and no commission or brokerage is charged. Money is loaned at lowest current rates and you can keep it as long as wanted, provided the security remains good. You are under no obligations in borrowing here, as we always have money of our own to loan and are constantly seeking new and acceptable acquaintances. Borrowers are assured here of that security, safety and protection under all circumstances that only a well established company of large capital and surplus can offer. Loans are made from 3 to 5 years on ranches, orchards, business blocks, residences, etc. We would be pleased to have you call or write your needs. MORTGAGE GUARANTEE COMPANY, Mortgage Guarantee Bldg., 626 So. Spring St., Los Angeles. Tel. 10707. Fresno office, Room 20, First National Bank Bldg.

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A Large Assortment Used Motors and Gas Engines always on hand. Let us know your requirement. Your order—no matter how exacting—can be filled. One of the best Electrical Repair Shops on the Coast. At Your Service. For all around satisfaction take up your problem of equipments and repairs with Karl A. Hedberg, 131 Fremont Street, San Francisco, California.

Made of Redwood, Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 81 Washington Building, Los Angeles, California.

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If You Want to sell or exchange your property write me. John J. Black, 10 St., Chippewa Falls, Wisconsin.

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For Sale—You will be satisfied with my high grade New Zealand Reds, Pedigree and Utility Stock at reasonable prices. F. R. Caldwell, Broodmoor, San Leandro, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

Raise Rabbits for us. We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale — Rabbits. New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

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I Want Responsible and Experienced Fruit, alfalfa or grain irrigation farmers to work on crop share basis. Land is river bottom tule land, plenty of water, good living conditions and good markets. Will enter into one or two years contract with right men and might extend same into option of purchase. Party should have some implements, live stock, or money with which to buy them. Please state age, farming experience, from whom you have rented, amount of livestock and implements you own, financial condition, and size and age of family. State when your services will be available and amount of land you can handle. Address: Herman Janss, San Joaquin, California.

Attention — Ranch owner; poultryman, very successful, will join you establishing modern up-to-date poultry, turkey ranch, particularly TURKEYS. Special proven system. Will build, equip, stock, run same. Grain ranch essential. No interference with other crops. Separate department. Invest $1200 each. Best investment on ranch. Foothill ranchers save stamps. Highest testimonials and evidence furnished. Call or address C. T. Johnston, 831 S. Flower, Los Angeles.

Wanted—Party or parties to join me in dairy and hog business on my alfalfa ranch. $10,000 required. Or party with string of good cows and some cash. Will make attractive proposition. H. C. Hartley, Care City Engineer's Office, Los Angeles.

Wanted—Management of Farm by Californian, thoroughly familiar with fruit, alfalfa, grain and stock growing. An expert in irrigation. Address Lock Box 944, Fontana, San Bernardino County, California.

Wanted by married man, good dairy or alfalfa ranch in Marin or Sonoma Counties, on shares or would take position as foreman. Address R. 5, Box 131, Petaluma, California.

Wanted to Exchange — Improved ranch in Tulare County for stock ranch in Northern California. Will accept Liberty Bonds for part or all. Address 154 So. C St., Tulare, California.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Agents Wanted — Sell Automobile Tires and tubes on liberal commission. Address Arnott & Co., Dept. 10, Los Angeles.

Wanted to Hear From Owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Bees Wanted—In boxes or patent hives, also equipment. Address E. C. Rothchild, Rutherford, California.

Wanted—Pair of Pea-fowl, also young Pea-fowls. State age. E. Borchert, Anaheim, California.

Wanted—Position as foreman on ranch. J. R. Dickson, R. R. No. 2, Highland, California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Write for Circular and Prices of Seeds. Wanted Sudan, Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

PIGEONS

Paradise Strain of White King Pigeons. Young unmated birds $2.00 a pair; old mated birds $3.00 a pair. Paradise Valley Poultry Ranch, National City, California.

FERTILIZER

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101, Watsonville.

PHEASANTS

For Sale—Golden Pheasants in full plumage. E. Borchert, Garden Grove Road, Anaheim, California.

Elephant Grass

(Napier Fodder)

Canes for Fall Planting

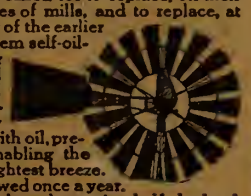
by simple method of sugar cane propagation. 1000 joints, $25. 500 joints, $15. 100 joints at $5, smallest order filled.

H. L. WAGNER

Descanso, San Diego Co., Calif.

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.



Write AERMOTOR CO., 2500 Twelfth St., Chicago

WINTER COVER CROP

Continued from Page 193

have actual running water during the frosty nights. This may not be possible with all, but it is possible to arrange to run the water often enough to keep the soil quite wet at this period.

There is a very great likelihood that another epidemic of mottle leaf will make its appearance in another year or two unless we have a wet winter the coming season. It has always been so, that the mottle leaf attacks have followed a series of dry winters. So we cannot afford to fail to do all that can be done to guard against this evil. The cover crop induces filling the soil up with moisture in winter and opens the soil up so that it takes in the water.

So far as we know there is nothing better for the winter cover crop than Melilotous Indica. It is hardy, free from insect enemies and diseases, keeps on coming up during the fall if it does not all get started with the first irrigation. We are told that the only rival it has is the purple vetch, but at present this is not on the market. For sandy soil which is liable to wind shifting this will be preferable to the clover. In the experiment station records this made the highest tonnage record of all, but we doubt if it will prove as hardy as the Melilotus clover. We gave up the Canada pea on account of lice and the difficulty of obtaining a stand, besides it was occasionally frost killed. The ordinary vetch was abandoned on account of the aphis. Fenugreek was good in some localities but not in all places. And so all along the line many plants have been tried, but the Melilotus clover remains the best of all.

MATURITY STANDARD FOR AVOCADOS

Continued from Page 197

best edible quality has not been determined.

According to J. M. Elliott who interviewed Rivers Brothers & Company, which purchased the bulk of the avocados blown from the trees last November, the fruits within three weeks or one month of maturity were not damaged at all and under proper conditions ripened normally. These proper conditions undoubtedly include a certain percentage of humidity as well as warmth, since dry air will cause the fruit to shrivel, dry up, and become leathery. Some persons have found that avocados ripen more uniformly and quickly if buried in bran or sawdust than in the open air.

* * *

Mr. Condit gave a summary of the maturity standards for other fruits, touching upon oranges, olives, grapes, cantaloupes, etc. He then added:

* * *

A satisfactory maturity standard for all avocados will be difficult to establish. Nature has endowed the Sharpless, Dickinson, Challenge, Spinks, and others with a fairly sure sign of maturity in the final change of color from green to purplish—or reddish—black. With those varieties which remain green throughout, the problem is more complex. An oil analysis will not suffice as such an analysis requires too much technical skill to be used widely and the individual fruits show too much variation in fat content as influenced by the long blooming period of the tree and the irregular setting of the fruit. Neither will size of fruit suffice as sizes also vary markedly on the same tree. It seems to me that the most logical basis for a workable standard is the normal date or season for maturity. Varieties have already been classified according to season, the Fuerte from January to May, the Sharpless from October to January, the Puebla from December to February, and so on. Why can not the committee on classification and registration of varieties be authorized by the directors to submit recommendations as to the earliest date at which the fruit of a commercial variety can be termed properly mature? The directors can then draw up an agreement according to which the members of the association promise not to pick and ship the fruit of any commercial variety before the maturity date specified for that variety. The containers for the fruit could then be plainly labeled, "Mature Avocados, Guaranteed by the California Avocado Association". It was some such arrangement as this, and not an iron clad contract, by which the Tulare County Protective Association secured excellent results in preventing the shipping of immature oranges. The members made it decidedly unpleasant for growers who did not make the agreement or who failed to live up to it when made. This whole subject however, of the proper maturity of avocados is one which needs thorough investigation, and it is to be hoped that such an investigation can be carried out by the association, the state experiment station, or by the United States department of agriculture.

Five Standard Automatic

Catalog No. 34

Subsoil and Chisel While the Ground is Dry

Killefer Quality

Killefer Efficiency

Subsoiling is coming to be recognized as the most successful method of opening the ground to receive the winter rainfall and conserve the moisture.

Ranchers who subsoiled last year, have reaped the benefits in increased crops over those who used the old methods. One rancher of Imperial Valley, reports a gain of from six sacks of grain per acre, to twenty-seven sacks; many others are reporting equal gains.

Our Automatic Subsoiler is a great improvement over the old style hand wheel and screw lift, as it eliminates all physical effort in raising it out of the ground. We also build the three standard subsoiler with the automatic lift.

Write for our booklet on Deep Tillage vs. Old Methods, which contains personal letters from those who have subsoiled or chiselled their land and have increased their yield from 100 to 150 per cent.

We will demonstrate our full line of Tractor Implements at the demonstration to be held at Los Angeles, September 13th to 20th.

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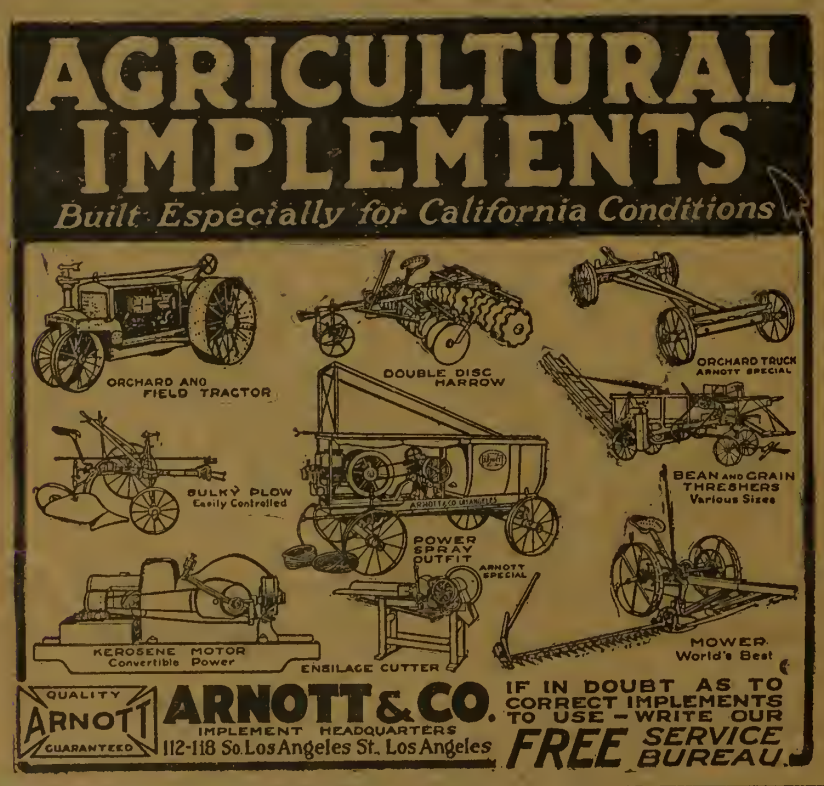
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100,000 FEET OF NEW AND SECOND-HAND PIPE AND CASING
PIPE—Practically all sizes from ⅛ to 15 inches.
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All pipe and casings have good threads and couplings on each joint.
RIVETED PIPE—4 to 12 inches, as good as new
We also carry valves and fittings.
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When Writing Advertisers, Mention The Cultivator.

Household Department

THE RICH POOR MAN

Oh, the landscape's mine,
And the air, like wine,
And the song of the birds in the trees,
And the grateful shade
In the nooks of the glade
And the swish of the winds in the trees.

And the sunlight's mine,
All His works divine
Are mine, to have and to hold.
Nor tempting wealth,
Or the miser's pelf
Can take—they're not to be sold.

Let men worry and fret
And struggle to get—
Let them barter their honor and deal,
And pine at the loss
Of a bit of their dross—
Let them envy their neighbor his weal.

I'll go on my way
To the end of the day;
I'll knock at the poor man's door;
He has what is mine,
Contentment divine—
Soul peace—why struggle for more?
—E. M. S.

ON THE EDGE OF THE WORLD

(Concluded.)

Miss Warren's head ached and a curious trembling made her hands clumsy. At the lunch hour she found she could not force herself to eat so she slipped off to the basement where Brunner was serving hot coffee in tiny gold banded cups to the restless tide of patrons. She and Brunner had loved each other for years but marriage, on his wages, was out of the question.

"Whose funeral?" he demanded at sight of her face. "Tired?" Cheer up, pal! It can't last always!"

His smile helped more than the hot drink. "Thank you, Tom!" she whispered back. "Yes, I'm tired clear to the soul. I don't see why people who have so much of life's good things, should be so fussy and hard to please, do you?"

"Hard to stand sometimes," he nodded. "But be a 'Little Cheerup.' Keep singing!"

Slipping unobtrusively back through the crowd, her heart lifted its silent prayer for courage. Tom's smile had helped but there was no outlook. She had come to the edge of the world and Fate meant to push her off. What did it matter for herself? She could fight along somehow, go to the poor-house if need be but there was mother! God must hear her cry for help.

Prayer died from her soul at the entrance to the lace curtained alcove where so many of her hours had been spent. Hate is not the atmosphere of prayer. Like a deadly miasma this new strange emotion suddenly enveloped her as through the lace she gazed at the new saleswoman, smiling, self confident, already successful.

In her brief withdrawal Mrs. Wood Levison had come up. Mrs. Levison was the customer who must be pleased. And she was pleased! Manda had effected a sale and Mrs. Levison was looking kindly upon the girl's fresh young loveliness.

"I see Mr. Harris has made a welcome change here," she was condescending to say, her words perfectly audible to the one who paused at the door. "The person formerly in charge was most uninviting, a constant exhibition of over-taxed vitality. You, my dear—what is your name?, I shall certainly call for you in the future."

Miss Warren's glance dropped to the floor unseeingly. Her face was gray, all the fine lines of her years springing into strong relief. Yes, she had reached the edge of the world, the end of the world and the solid ground!

Frailty and fading charm must give way to youth. It was Time's sentence. It did not matter except for Mother at home, drinking her tea, knitting socks for the soldier boys, secure behind her sea-wall.

At closing time she was not surprised when a "cash" stepped from the elevator and came to her. "Number Four," she whispered importantly, "Mr. Travers told me to say Mr. Harris would see you in his office at once, if you please. Gee!" her voice dropped sibilantly. "You don't suppose you are fired?"

Miss Warren grew whiter as the child trod upon nerves aching from long-sustained anxiety. What mattered a record of long and faithful service? She had ceased to be valuable to Harris and Son. When one ceases to be valuable, one steps aside.

At once she obeyed the august summons, two red spots glowing in her face's pallor. "You sent for me, sir?" she asked. "I am Number Four, Miss Warren, of the Suits Department."

Mr. Harris turned in his swivel chair and regarded her attentively. "Sit down, please," he said. "We will come to business. There has happened a slight irregularity. I meant to see you this morning. You are not strong, Miss Warren? Travers reports twice lately you have had to be relieved to go down to our hospital."

She bowed. It was hopelessly true.

Surprisingly gentle were the next words. "You have been with us a long time, Miss Warren. Twenty years, our books say. That is a long record of faithful service!"

He turned back to his desk with an abrupt movement, and continued speaking over his shoulder. "It is evident you are no longer able to give the service we require without throwing yourself on the breakers—which isn't good business for you or for us."

"In short—" It surprised her to hear her own voice filling the pause. "In short, you do not need me any longer?"

He tapped the desk pensively. "That is about it! You will be paid two weeks in advance, in lieu of warning. Though we feel our interests require fresher talent, more vigor, we certainly appreciate all you have done in the past. We have arrangedwhat we think a liberal life-annuity and hope the arrangement will be satisfactory, for this is to be our future policy. The provision frees the really big years of your life, a condition your faithful industry has well earned. May I wish you a full and gracious Thanksgiving, my friend?"

Not knowing how she answered, she came to on the street, holding tightly a paper he had offered her. She was at the rear door and Brunner was saying something which presently cleared into speech. "I'm so glad, Velverette! You'll get strong now. I've a better position in view. Maybe our star is coming up over the edge of——"

She fell to laughing and crying softly, hidden from view by his big, comforting bulk. "Coming up, not going over the edge!" she whispered. "Tom, O Tom! Now I know God's good world has no edge. It is gloriously round and always we may go on, under the protecting shadow of His hand. I am sorry that I doubted."—The Farmer's Wife.

SPECIAL LAUNDRY PROBLEMS

Colored Clothes

Colored clothing should not be soaked or boiled. The color should be set by soaking in a strong salt solution. Avoid boiling water, lye, soda, strong soap or stain-removing agents, except of the mildest kind. Hang in the shade and iron on the wrong side, when possible.

Lace

Very delicate lace should be washed in a bag made of cheesecloth or muslin. Shaking in a bottle of soap suds is also good. Pin into shape to dry.

Silk

Avoid rubbing and wringing silk, using a gentle squeezing motion. The water should be lukewarm, containing soap solution. Bleaches, acids and strong soap or washing powder should never be used. Iron china silk wet, pongee should be ironed on the wrong side when it is almost dry.

Woolens

Prepare a tub of lukewarm water containing enough soap solution to make a light suds.

Wash by squeezing or raising and lowering in water.

Repeat, using another tub of soapy water of exactly the same temperature as the first. Avoid twisting or rubbing.

When the article is clean rinse in at least two waters of the same temperature as the others, putting two tablespoons of glycerine in the last water to restore the lustre.

Squeeze as dry as possible.

If a sweater button the front and lay backside down on a table, covered with several layers of paper and an old sheet or cloth, in a warm room or

before an open window. Pat and pull into shape, smoothing flat with the hands; fold the arms across the front if necessary. When the front is fairly dry turn the sweater backside up for a day or so until dry.

COOLING SUMMER DRINKS

By Minnie Calista Childs

If anyone hands you a lemon, take it and thank them.

Lemon Orangeade

Six lemons, three oranges, one quart of water. Squeeze juice from lemons and oranges, add water and sweeten to taste.

Lemon Frost

Use same rule as for lemon orangeade, adding one cup of tea and one pint of water instead of one quart. Pour into glasses half filled with shaved ice.

Lemon Mint

Juice of six lemons, one dozen crushed mint leaves, one quart water, sweeten to taste. Heat to boiling point, strain into pitcher, cool and serve with chipped ice. Delicious.

Spiced Lemonade

Five good sized lemons, six cloves, one stick of cinnamon. Cook cloves and cinnamon in a cupful of water, let cool and add to the water, sweeten and serve ice cold.

For Summer Fruits

Half a cup of sweetened lemon juice adds to the flavor of one quart of sliced peaches or small fruits.

THE DELICIOUS QUINCE

Old Fashioned Quince Marmalade

Pare quinces and boil until tender in a small quantity of water. Take one bowl of sugar, one bowl of cooked quinces and cook four or five hours or until deep red in color. The next day put in earthern jar (no cover) and cook four or five hours more in oven.

Quince Preserves, Southern Style

Eight pounds of quince, eight pounds of white sugar. Pare the quinces, slice from the core and simmer in clear water until tender. Remove to dishes, laying each piece by itself. Put the cores and skins in the water and boil for 20 minutes. Strain the water through a jelly bag, and into two quarts of it put a pound of white sugar for each pound of quinces; simmer gently, and when the syrup is half done, begin to cook the quinces in it, putting in only part at a time, as in peach preserves, simmering for 15 minutes and removing to dishes while the rest cooks. Proceed thus until all of the fruit is perfectly transparent, then seal up in glass jars.

Quince Dessert

Cut a slice from the blossom and stem end of six quinces, put them into a dish with enough water to cover up to half the depth of the quinces. Cover with another dish and bake in a moderate oven until the fruit is quite soft, then lift them out and place them in a glass dish. Put half a heaping tablespoon of powdered gelatine into a saucepan, add two and a half cups of boiling water, the liquor from the dish in which the quinces were baked, half a cupful of sugar and one teaspoonful of coriander seeds. Stir over the fire till they boil, strain and cool, then poul over the quinces. When ready to serve put a teaspoonful of red currant jelly on the top of each quince. Decorate with whipped and sweetened cream, flavored with half a teaspoon of almond extract.

HOUSEHOLD QUERIES

Watermelon Preserves

Please can you publish in the question and answer column of your valuable paper a recipe for watermelon preserves.—Subscriber, San Fernando.

Peel skin from the rind and cut rind into strips about two inches long; cover with water and cook until tender. Boil together ten minutes four cups vinegar and eight pounds sugar; add four tablespoons each cinnamon sticks and whole cloves (tied in cloth) and simmer until syrupy, about two hours. Add cooked melon rind and simmer one hour. Fill jars and seal. If vinegar is strong, use half water or dilute according to taste.

CLUB YOUNGSTERS EXCEL IN SCHOOL

A boy or girl who belongs to one of the clubs organized by the department of agriculture and the state colleges gets better marks in school than one who doesn't. This is the testimony of the county superintendents in the counties in which clubs have been organized as brought out by a recent inquiry in the Southern states. In Monongalia County, West Virginia, for two years a complete record has been kept of 53 club members and of the same number of pupils of the same grade and age and from the same schools. The records show that the club members in their monthly examinations have averaged 15 per cent above those who do not belong to a club, 12 per cent in attention, and 23 per cent in attendance at high school after completing the eighth grade. At the annual spelling contest in the county all the winners were club boys and girls.

A four-year record in Comanche County, Texas, shows the scholarship of the club boys and girls to be 11 per cent above those who do not belong to a club. Of the 4000 boys and girls in rural schools in the county, not one expelled or suspended was a club member. The superintendents agree that club members are more active, have more inspiration to do better work and possess the desire to search for new things. Very few club members stop school in the lower grades, and those not of their own choice.

WINDOWS OF THE HOME

Henry Van Dyke calls the pictures on his walls the windows of his home. Through them he gets glimpses of the beauty which lies beyond the section of living space bounded by the stone walls of his city home. Through one such window he could see the ocean, and almost feel the cold spray and the strength of the salt air. Another window gave him a view of the mountains, with all of the uplift of a daily climb, in thought, to their summits.

The influence of such silent teachers in the home can hardly be estimated, but in nothing else is the average American home so poorly furnished. Good taste may be displayed in the choice of carpets and easy chairs. Wall paper may be selected in quiet restful tints, but the decorations may be family portraits framed in objectionable ornate mouldings, chromos, representations of Indians in gaudy war paint, or so-called oil paintings, purchased perhaps of some itinerant vendor and suggestive of nothing in the heavens above or the earth beneath.

DON'T FORGET THE BIRTHDAYS

Do not drop the habit of observing birthdays. The observance need not require much extra time or effort, but do let the day be a little different, the dinner a trifle festive, the honored member of the family placed, on a pedestal, so to speak. If you plan some little surprise for the children on their birthdays, let all but the honored one help toward that surprise, and when your own birthday draws near give them a free hand toward doing a little something unexpected for you, and let all of you work together to make Dad forget his cares for the holiday meal of his natal day.

USE GOOD RUBBERS IN CANNING

It is very important in canning that new, good, rubber rings be selected. Test them for elasticity by pulling. They should not break easily and should return to shape. When doubled between the fingers the rubber should not crack or even show little holes. When placed on the jar the ring should fit closely. Do not select rings by color, but by test. Do not use the same rubber twice. It is cheaper to buy new rubbers than to lose a jar of fruits or vegetables.

Grease stain on white clothes is easily removed by soaking the spot in ammonia, letting it dry, then washing in hot soapsuds.

Make generous use of those best bleaching agents; sunshine and green grass.

You Can Buy An "Inexpensive" Piano Without Buying a "Cheap" One

There is a big distinction between the words "cheap" and "inexpensive." Some folks like to get things "cheap"—only to find that in the end they proved to be the most expensive—because a little while afterwards they had to buy another that would really give service.
Now we do not sell "cheap" pianos, but we do carry a number of "inexpensive" instruments. The prices are within the reach of most every home. These Pianos will render many years of satisfactory service—they are good, substantial values and are worth every dollar asked. We gladly arrange convenient terms of payment.

We invite you to call at any of our stores—or write us asking for illustrated catalog and prices.

We are dealers in Steinway and other Pianos, Pianola and Duo Art Pianos, Aeolian Player Pianos, Player Rolls, etc.

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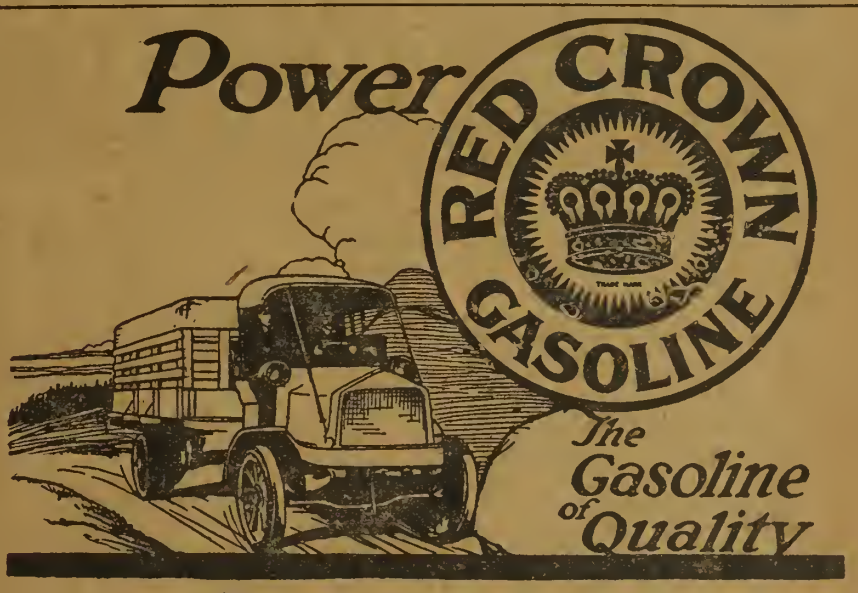

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MANUFACTURERS OF
Well Casing, Tanks, Riveted Water Pipe and Supplies
AMERICAN STEEL PIPE & TANK CO.
P.E. Building, Los Angeles, Cal. Branch at Fresno

CORRUGATED AND PLAIN TANKS

Los Angeles Markets

Los Angeles, August 20, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 56 lb.; prices to retail merchants in 1-lb. squares, 56@57.

Dairy Exchange prices last week on extras:

Aug.	13	14	15	16	18	19
'19 ...	57	56	56	56	56	56

CHEESE

Brokers' prices:

California fresh, lb., 35; price to retail merchants, 36@37.

EGGS

Fresh extras, Produce Exchange closing price 51½ dozen, price to retail merchants 54½ dozen; case count, Produce Exchange closing price, 50 dozen; price to retail merchants, 54 dozen; pullets, Produce Exchange closing price, 48 dozen; price to retail merchants 49.

Dairy Exchange prires last week on extras:

Aug.	13	14	15	16	18	19
'19 ...	53½	52	52	52	53	51½

POULTRY

Prices to producers: Hens, lt., 26; colored over 4 lbs., 36; broilers, 27; fryers, 25; roasters, 30; old roosters, 10; capons, 42; ducks, 27; ducklings, 27; geese, 25; turkeys, 34@40; squabs, 45; pigeons, doz., 1.00.

Belgian hares, live, 13.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 18.50; 150 to 225 ibs., 20.00.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.00; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 19, by Los Angeles wholesaiers from their sales to retailers, peddlers, hotels, rcstaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market steady. Stockton Burbanks, resorted, sacked per 100 ibs., 3.00@3.50. New stock, Stockton Burbanks, 3.00@3.40. Homegrown White Rose, 1.00@1.25 lug box; sacked per 100 lbs., No. 1 grade 3.00@3.40, No. 2 grade, 2.50@2.75.

Sweets, lb., 5@5½.

Onions: Demand and movement siow. Homegrown White Globes 90@1.00 per lug; 2.90@3.00 per cwt. Yellow varieties 2.50@2.85 per cwt., lugs 1.00@1.10; Garlic, ib., 40.

VEGETABLES

These are the actual prices obtained August 19, by Los Angeles wholesalers in their saies to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beets, doz., bunches, 40.

Beans: Kentucky Wonders, 3@3½ lb., practicaily no demand.

Carrots, doz., 30@35.

Cucumbers: Local lug, 20@25.

Celery: Local, best, 1.00@1.25 dozen bunches, smaller 75. Crates, best 4.50@5.00.

Corn: Roasting ears, 60@65 ler lug of 3 dozen.

Eggplant, best, lb., 4@5.

Parsley, doz., 15.

Peppers: Beli iug, 45@50; Chili 35@45.

Peas: Local, lb., 8@9.

Spinach, doz., 20.

Squash: Local summer, iug, 40@45.

Tomatoes: Lug, ripe, 30@40; shipping 45@55.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained August 19, by Los Angeles wholesalers in saies to retailers, peddiers, hoteis, restaurants, cafeterias, etc. Terms: Cash on the waik.

Apples: New crop, Alexanders, apple boxes 2.75@3.00; Gravenstein, buik, 5@6 lb.; packed, 2.65@3.25; Red Astrachans, bulk 4@5 ib. Crabappies, 2.00@2.25.

Blackberries: Cr. 30 baskets, 4.50@4.75.

Cantaloupes: No cariot arrivais. Demand and movement moderate, market firm. Saies direct to retailers: San Fernando and homegrowns, Tip Tops, standard crates 1.25@1.50; Green meats, standard crates 1.25@1.50; Honey Dew, standard crates 1.50@1.75; Paul Rose, standard crates 1.50@1.75.

Figs, per 10 lb. box 1.75@2.00.

Grapes: Saies direct to retaiiers: Local and northern: 30 lb. lugs, bulk Thompson Seedless 4@5; Tokays, mostly green stock, 8@9; Maiagas 6@7; Muscats 5@6; Rose of Peru 7@8 lb.

Loganberries: 4.50@5.00 per cr. of 30 baskets.

Nectarines, lb., 6@8.

Peaches: Demand and movement good, market firm. Saies to retaiiers: Homegrown and northern various varieties mostly 5@6 lb.

Pears: Demand and movement good, market firm. Saies direct to retaiier—Northern: Bartietts, standard boxes 3.50@3.75. Bulk, fancy 6@7 lb.; choice 4@5 ib.

Pineappies, ib., 15@16.

Piums: Demand and movement slow. Satsumas and Wicksons, 5½@6 lb. Burbanks 4@5 lb.; Hungarian, 7@8.

Raspberries: Cr. 30 boxes, 4.50@5.00.

Strawberries: Cr. local, 5.00@7.00, best 2.00@2.25; poorer, iow as 1.00.

Watermelons: Demand and movement slow, quaiity and condition generaiiy good. Local Chiieans and Klondikes, large 1½ ib., medium 1, small ½ ib.

Lemons: Fancy packed, 6.00@6.75; local pack, 4.00@4.50; loose, some tree ripe, 3.00@4.00.

Oranges: Valencias, medium fancy, 5.25@5.75; local pack, 3.00@4.00.

Grapefruit: Local fancy, 3.50@7.00 bx.; poorer, 2.50 up.

HONEY

Supplies very light. Estimated the season is haif over. Demand and movement good, market firm, little change in prices. Carloads f. o. b. usual terms: White Orange Blossom, mostiy 20; White Sage 20; Extra Light Amber Sage 18½@19; Light Amber Sage 17½; Light Amber Alfaifa 15@16 ib. Beeswax: l. c. l. saies mostiy 40 lb.

HAY

Quotations by Nichois - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots, handling and commission must be added to obtain retail prices:

Tame Oat	19.00@20.00
Barley	16.00@21.00
Alfalfa	18.00@22.00
Wheat or Barley straw	9.00@11.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	27.00@28.00
Standard dairy	24.00@26.00
Standard alfalfa	21.00@23.00
Stock alfalfa	19.00@25.00

GRAIN AND FEEDS

Price local grain exchange, August 19:

Milo maize, 2.90@2.91¼.

Feterita, 3.20.

Barley, 3.13¾.

Corn, Yellow, 3.65@3.75; White, 3.60@3.65.

Wheat, 4.60@4.80.

Egyptian Corn, 3.30.

San Francisco Markets

San Francisco, August 19, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	56
Prime Firsts	55
Firsts	54

Prices extras last week and year ago:

Aug.	12	13	14	15	16	18
'19 ...	56	56	56	56	56½	56
'18 ...	52	52	51½	51	52½	..

Rcts. week ending August 18, 3504 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	34@36
Cal. Y. A. fy.	38
Ore. Triplets	37
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	57
Extra Pullets	53½

Prices extras last week and year ago:

Aug.	12	13	14	15	16	18
'19 ...	59½	58	56	56	57	56
'18 ...	52	53	54½	54½	55½	..

Rcts. wk. ending August 18, 930,376 dozen.

POULTRY

Hens, W. Leghorns, 28@30; colored, 36@38; roosters, young, 35@36; old, 19@21; broilers, 30@33; fryers, 33@34; squabs, 2.50@4.00 dozen; ducks, 25@27; geese, 23@25; broiler turkeys, 40@47.

Belgian hares, live, 13@15; Jackrabbits, doz., 1.50@3.00.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do. thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.

Calves: Light weight, 12½@13; medium, 11½@12, heavy, 10@11

Lambs: Yearlings, 10; milk, 13.

Sheep: Wethers, 8½@9; ewes, 6½@7.

Hogs: Hard, grain-fed, 100 to 150 lbs., 19¼; do, 150 to 250 lbs., 19¾; do, 250 to 300 lbs., 19¼; do, 300 to 400 lbs., 18¾.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; canner cows, 4@5; good bulls, 5@6½; calves, 9@10.

POTATOES

Potatoes: Per 100 lbs.: River, choice 2.00@2.25; fancy 2.25@2.50; sweet, lb., 6@8; garnets, 2.00@2.25.

Stockton: Demand moderate, market firm, carloads f. o. b, usual terms, white varieties 2.50.

ONIONS

Onions: Onions, fancy, 2.25; choice, 2.00; Garlic, 21@22½.

VEGETABLES

Wholesale selling price:

Beans: String, 3@4; Wax, 3½@4; Pole, 3@4; Limas, 6@8; Italian, 5@6.

Cabbage, doz., 40@55.

Celery, cr., 35@45.

Cucumbers: Large box, 50@75.

Corn, doz., 15@30.

Eggplant, southern, fy., 50@65.

Lettuce, doz., 25@35.

Okra, green, lb., 6@8

Peppers, Bell, lb., 75@1.00; Chili, 7@11.

Peas, lb., 6½@7.

Radish, 7@9 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.25@1.50.

Spinach, 75@1.25.

Squash: Summer, cr., 50@75; Italian, 50@1.00 bx.

Tomatoes: Sacramento River 75@1.00; Bay, 1.25@2.00 bx.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 6.00@6.50; choice, 5.00@5.50; standards, 3.50@4.00; lemonettes, 3.50@4.00; grapefruit, fancy, 3.00@5.00; choice, 2.50@3.50; oranges, 4.25@5.50.

FRESH FRUITS

Wholesale selling price:

Apples: New crab, 75@1.25 for 20-lb. box; Gravensteins, 2.50@3.00 bx.; yellow transparent, 3.00@3.25; Alexanders, 2.00@2.25 bx.

Apricots: 1.25@1.50; loose, lb., 7@8; 130@160 ton.

Bananas, 7@7½.

Blackberries: Ch., 7.00@8.00.

Cantaloupes: Supplies liberal. Demand and movement moderate, market firm. Sales direct to retailers. Turlock district: Green meats, standards 45s, best 1.50@1.75, few 2.00; poorer, soft stock, low as 1.00; Honey Dews in standard crates, 75@1.25.

Turlock: Warm, clear. Haulings light. Quality fair, condition generally good, some over ripe stock. Carloads f. o. b. cash track — too few sales to establish a market. Wagonloads cash to growers—demand good, ripes and Eastern shipments; standards 85@1.00, mostly 90; ponies 45@50, mostly 45; flats, 35@40, mostly 35; Honey Dews, demand active, market stronger, quality generally good, many over ripe stock, 13.00@16.00, mostly 15.00 per ton.

Figs, 1.50@1.75 bx.; Brunswick, 1.00@1.50.

Grapes: Thompson Seedless, 75@1.25; bx.; Malaga, 1.00@1.25; Los Angeles lug. Fontainbleus, 1.00@1.25 cr.; Rose Peru, 75@1.25.

Loganberries, ch., 8.00@12.00.

Huckleberries, lb., 17½@20.

Nectarines, lb., 6@8.

Peaches: Supplies moderate, demand and movement slightly improving. Market steady. Sales to retailers: Strawberry Frees, bx. 90@1.15. Elbertas, bx. 75@1.00

Pears: Good stock supplies light. Demand and movement good, market steady. Sales direct to retailers: Bartletts, standard boxes, few quality and condition good, green stock, 3.00@3.25 ripes, some soft, 1.00@1.75, mostly 1.50.

Plums: Cherry, 85@1.00, Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00@1.25.

Pineapples, doz., 2.00@5.00.

Raspberries: Ch., 14.00@17.00.

Strawberries: Ch., 10.00@12.00.

Watermelons, lb., 1c.

DRIED FRUITS

The California Prune and Apricot Growers, Inc., announce prices:

Apricots, Sunsweet Quality: Choice 25, extra choice 26, fancy 27, extra fancy 29, Fancy Moorparks 29, extra fancy Moorparks 32. Growers Brand Quality: Choice 24½, extra choice 25½, fancy 26½. First Quality: Standards 19, slabs 21.

Prunes, basis price: 20-30s (flat lb.) 22, 30-40s (basis) 16, 40-50s (basis) 14, 50-60s (basis) 12, 60-70s (basis) 11½, 70-80s (basis) 11, 80-90s (basis) 11, 90-100s 11, 100-120s (flat lb.) 8½, 120s and up (flat lb.) 7½. Growers' Brand ⅛ cent under these prices.

Peach prices for the 1919 crop were announced at Fresno, July 16, by the California Peach Growers Inc. The price list agreed upon by the directors and an-

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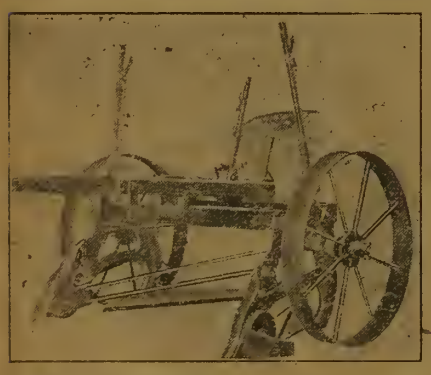

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CARL G. JORN

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nounced by General Salesmanager Sturtevant, follows:

Effective this date and until further notice, our prices f. o. b. our California factories, on 1919 crop dried peaches for the domestic and foreign trade: September, October, November shipment, sellers' option; guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾; Muirs, 15.
Choice yellows, 15¼; Muirs, 15½.
Fancy yellows, 16½; Muirs, 17½.
Extra fancy yellows, 17¾; Muirs, 18¾.
Slabs yellows, 14½.
For "practically peeled" add 1½ cents per pound (any grade).
Prices above are all bulk basis.
For packing in: 50-pound or 25 kilos boxes add 1 cent per pound.
25-pound or 12½ kilos boxes, add 1¼ cents per pound.
10-pound boxes, add 2 cents per pound.
Blue ribbon peaches packed five-pound cartons, 12 per case, 12.00 per case.
Blue ribbon peaches packed two-pound cartons, 24 per case, 10.00 per case.
Bakers' special, "practically peeled," 16¾ per pound, bulk basis.
Figs: Wh. stand., 16; ch., 18½; ex. ch., 20; fy., 22½.
Apples: Ch. (in 50's), 21; ex. ch., (in 50's), 21½; fy., (in 50's), 23.
Pears: 1919 crop, stand., 20; ch., 22½; ex. ch., 23½; fy., 26.

NUTS

Almonds: The Exchange will make prices about September 10.
Prices named by outside buyers:
Nonpareil, 36, IXL 33, Ne Plus Ultra 32½, Peerless 29, Drake 26, Golden State 25, Languedoc 25, Hard Shell 20.

HOPS

Contracts for 1919 crop, 50@52½ lb.; 1918 crop, 50@55.

BEANS

Shippers quotations f. o. b. California: Bayo 6.50@6.75, Blackeye 5.75@6.00, Cranberry 7.00@7.50, Fava nominal, Garbanzo 11.25@12.00, Lima (f. o. b. So. Cal.) 12.00, Lima Henderson Bush 10.50@11.00, Pink 6.75@7.00, Red Kidney 11.50@12.00, Red Mexican 5.75@6.25, Tepary 3.00@3.50, White, large 7.50@7.75, White, small 7.75@8.00.

HONEY

Offerings light. Demand moderate and improving, market firm. Prices paid to producers. Extracted: Alfalfa Light Amber 14@16; White 16@18; Sage Light Amber 15@17; White 18@20; White Orange 18@20.

GRAIN AND FEEDS

Oats: Red feed, 2.95@3.05; black, 2.75@3.00 per cental.
Corn: California yellow, 3.65@3.75 cwt., Egyptian 3.40@3.50; Milo maize, 3.20@3.25; Red 3.12½@3.17½.
Rye, 1.15@3.30.
Barley: Feed, 3.00@3.05.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.16	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of August 16, Scott, Magner & Miller says:
Receipts past week 2818 tons. Most of this hay arrived from the bay and river sections by boat, arrivals by rail being lighter than they have been for years at this season.
Cars have been very difficult to obtain in most sections and box cars are practically unobtainable, gondola equipment being about all that is offered by the company. This, as we stated last week, causes a very unsatisfactory condition of affairs as such equipment cannot be used where tunnels have to be traversed, and many points that are in the market for hay cannot be served. Demand from country districts has been very good although much dissatisfaction exists among buyers at delay of shipments owing to the car situation. Yet as a whole the market can be summed up as good at prevailing prices.
Hay has been moved from the tracks and boats here fairly well and although not as rapidly as the preceding week yet with good despatch. No demand for straw, with large offerings.
We quote today wholesale prices in carload lots for old hay as appear from dealers' transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5-wire bales)	17.50@19.00
No. 1 Wheat or Wheat and Oat hay	15.00@18.00
No. 2 Wheat or Wheat and Oat hay	12.00@15.00
Choice Tame Oat hay	15.00@18.00
Other Tame Oat hay	12.00@15.00
Wild Oat hay	10.00@14.00
Barley hay	12.00@16.00
Alfalfa hay	17.00@22.00
Stock hay	9.00@12.00
No. 1 Barley straw, bale	50@80

Citrus Markets

Los Angeles, August 20, 1919.
Valencias are getting well cleaned up though the market has been somewhat affected by large receipts of Eastern grown summer fruits. Fear of a general strike has delayed some shipments.
Lemons are in good demand but going forward in limited quantities. Prices generally satisfactory.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California: Oranges, 30,554 cars, lemons, 8706, total 39,260. To same date last season; oranges, 12,997, lemons 5004, total 18,001. Central California this season; oranges 4427, lemons 354, total 4781. To same date last season; oranges, 2539, lemons 115, total 2654. Northern California; oranges, 244, lemons 2, total 246. Last year same date; oranges, 203.

AT THE AUCTIONS

August 13

New York: 19 or. Val. 2.95-7.65.
Pittsburg: 9 or., 1 lem. Val. 2.15-5.20, lem. 60-5.50.
St. Louis: 3 or., 3 lem. Val. 2.60-4.70, lem. 2.50-4.75.
Boston: 13 or. Val. 3.60-5.95.

August 14

New York: Val. 3.15-7.20.
Boston: 7 or. Val. 2.15-5.70, grapefruit 4.05-5.90.
Philadelphia: 7 or., 1 lem. Val. 3.10-5.80, lem. 1.90-5.15.
St. Louis: 1 or., 2 lem. Val. 3.65-4.45, lem. 2.35-5.25.

August 15

New York: 15 or., 1 grapefruit, 1 mixed. Val. 2.90-7.70, grapefruit 2.95-5.50.
Cleveland: 2 or., 1 lem. Val. 1.55-3.95, lem. 3.60-4.10.
Boston: 6 cars. Val. 3.45-6.10.
Cincinnati: 2 or., 1 lem. Val. 3.70-4.05, lem. 3.70-4.95.
Philadelphia: 3 or. Higher. Val. 3.00-4.90.
St. Louis: 1 or., 2 lem. Val. 3.65-4.40, lem. 3.50-5.25.

August 18

New York: 37 or., 1 lem. Val. 3.00-7.65, grapefruit 3.45, lem. 4.75-5.50.
Philadelphia: 10 or. Val. 1.90-6.00.
Boston: 12 or., 1 lem. Val. 2.80-6.35, Sweets, 2.05-2.45, grapefruit 5.65-6.20, lem. 7.25.
St. Louis: 4 or., 3 lem. Val. 3.45-4.35, lem. 2.25-4.25.
Cincinnati: 1 or., 1 lem. Val. 2.15-3.30, lem. 5.55-5.90.

August 19

New York: 25 or. and grapefruit. Val. 2.65-6.45, grapefruit 2.10-3.00.
Philadelphia: 8 or. Val. 2.55-5.95.
Pittsburg: 3 or., 1 lem. Val. 3.60-6.05. lem. 2.50-3.30.
Boston: 9 or., 1 lem. Val. 2.45-5.15, lem. 5.95.
St. Louis: 1 or., 1 lem. Val. 3.05-4.10, lem. 2.75-3.05.

MARKET NOTES

Prune and apricot growers of the Santa Clara Valley have been looking into the question of insurance of their crops against weather damage. As yet the rates offered by insurance companies are too high to be practicable.
Standards under which beans will be bought and sold have been established by the California Bean Dealers' Association. This for Choice Recleaned and No. 1 Recleaned; lower grades on sample or description.
Foreign demand for dried fruits has slowed up, partly because most of the supply is contracted for and partly because of the great decline in foreign exchange.
Prices on almonds will be announced by the California Almond Growers' Exchange about September 10. Meantime price made by outside factors on Nonparells has already been advanced one cent, basis price now standing at 36 cents.
Walnut prices are usually made by the Exchange some time around the first of October.
Cantaloupe shipments from Central California were reduced last week, due to temporary car shortage. Complications of diseases have produced very short yields this season.
There is a large increase in celery plantings in Sacramento County.
Estimates are that approximately 2500 cars of onions are still available in the state, of which 1000 cars will go into storage. This would leave 1500 cars to move, or, at the present rate of movement, eight weeks' supply. Unless Eastern crops prove larger than now estimated this means increasing prices.
California expects to market nearly 3000 cars of watermelons.

SYSTEMS OF FEEDING POULTRY

There are two systems in use for the feeding of fowls, in one of which all the feed is given dry and in the other one or more of the daily feeds consists of a moistened mash. For convenience they may be termed the "dry feed" and the "mash" systems, although in the dry feed systems a dry mash is often fed. Dry feeding is used by many where it is not convenient to make and feed a moistened mash. The greatest advantages to be derived from the dry system are the saving of labor and the lessened danger of bowel trouble resulting from sloppy or soured mashes.

WEATHER REPORT

San Francisco, California, August 16, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	.02	.16	64	48
Red Bluff	.00	.00	.00	106	54
Sacramento	.00	.00	.00	100	52
San Francisco	.00	.01	.01	69	50
San Jose	.00	.00	.02	92	46
Fresno	.00	.00	.00	106	50
San Luis Obispo	.00	.00	.03	90	50
Los Angeles	.00	.00	.00	88	56
San Diego	.00	.00	.00	76	62

TiziT TiziT

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Owners of adjacent groves have fumigated for the past five years. Their groves are suffering from Black Scale as any one can see. One of them who has been watching the effects of Tizit on his neighbors' groves called the attention of the Inspector to the condition of his trees as compared with trees sprayed with Tizit.

The proof of the effectiveness of Tizit is on every hand. Being open minded and unbiased, the Inspector gave full credit to Tizit Spray and it was upon the inspector's recommendation and the conclusive evidence of what Tizit had accomplished in cleaning up the other groves, that this grower began using Tizit.

Growers who are not satisfied with results obtained by other methods of scale eradication cannot but see the uniformly beneficial effects of Tizit, which by the way is lower in price than any other scale eradicator—and we justly claim much more efficient.
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Summer Feeding

By Jean A. Koethen

THE longer I work with chickens the more am I impressed by the fact that the hen, in her tastes and idiosyncrasies, in her needs and desires, is not essentially different from the rest of us. We like to breathe pure air at night (if we are educated up to it). So does the hen. Shade in hot weather, protection in cold, immunity from the annoyance of insect pests of whatever sort, room to exercise and do the thing we like to do, whether it be to scratch in leaves and straw, wallow in the dust or rush around the country in a noisy, puffing buzz-wagon, are requirements common to all of us two-leggers, feathered or not. In summer we like to let up a little on the heavy work of the year, to adopt a lighter ration and so prepare the system for the strain of continued and often excessive heat. Instead of ham and fried potatoes for breakfast, we ask for melon and a dish of peaches; at dinner salad is more palatable than roast. Not only do we prefer fruits and vegetables, but we are actually unable to digest food that would be easily cared for in cold weather.

The case of the hen is identical. She is helpless, to be sure, and must take what is given her, unless she is so fortunate as to be on range, but she wants greens just as much as we want fruit and salad, and if she is kept on the heavy winter laying ration without some adjustment to her needs she suffers sooner or later. The liver refuses to do its work, elimination is stopped, and some day the hen either drops off the roost, dead, or develops the purple comb and sluggish motion which indicate liver trouble.

Even more imperative is it that the male bird should have a change of diet during the summer. A laying hen may keep in condition in spite of a too heavy ration, because she is laying. The male bird has no other use for extra protein, and stores it up in fat. Economy demands that the number of males kept through the summer be reduced to those that are absolutely needed as breeders, but the few that are kept should be put as soon as they are out of the breeding pen upon a summer ration.

My attention has been called to this need of the male for special feeding by a letter from an Oildale subscriber. She writes:

"I have a very finely bred Barred Rock cockerel that is sick. The first I noticed was a weakness in the knees, and next day he could not stand at all. Now he prefers lying on his side or at least he kicks himself over that way, I suppose in trying to get up. His comb is a good red, although I notice the points are dark, almost black. He eats some, but not much, and does not drink much water. He is also molting. I took him away from all the hens in May, gave him a good clean yard with scratching pen, shade and dripping fresh water. He has had mill screenings to eat, consisting of about two-thirds wheat and one-third corn, oats and barley, then once a day a mash of bran and rolled barley with a mixture of meat scrap, bone meal, linseed meal and charcoal in it. I admit I am short of green stuff, but I gave him all I could get, and he has grit a plenty—I notice the droppings are rather green and watery. Today I see I have a hen that seems to be going the same way."

The description of this bird's condition corresponds quite closely with Dr. Kaupp's description of a bird affected with fatty degeneration of the liver. He says they "show varied symptoms, but ordinarily they are dull, eat little, and the comb turns dark to black. They gradually become thin in flesh and finally die. Usually the bird will live from two or three weeks to three months after the symptoms first appear. On autopsy all organs as a rule appear normal except the liver, which is smaller than normal, unless fatty infiltration is also present. It appears slightly yellowish and when cut through with a knife the blade of the instrument will have a greasy appearance, due to the fat that adheres to it." Of the cause of this condition, Dr. Kaupp says:

"Overfed hens, or those closely housed and not forced to work, or fed too heavily on carbohydrates (starchy feeds) store up much of the surplus nutrition in the liver as well as in other portions of the abdomen In the liver, in which excessive fat is stored up there is after a while an encroachment upon the protoplasm to such an extent that the cells cannot properly functionate, and then death of the bird may occur."

No Corn for Heavy Hens

In our climate Leghorns may be given some corn in winter, but hens of the heavy breeds should have very little, if any. In summer corn should not be fed to any breed. This is because corn is the most heating of all grains, and the fat which is not required for maintaining bodily heat must inevitably be stored up somewhere. It will be noticed that corn had been a part of the ration of this Barred Rock rooster as long as he would eat, though the Rock puts on fat more rapidly than most breeds. The proportion of meat and vegetable meals is not given, but from the fact that both meat scrap and linseed meal have been used, as well as bone meal, one is forced to conclude that the cockerel has had too much protein as well as too much fat. All the greens he could consume might have balanced the ration, but as he has had so little he could hardly escape clogging of the liver. The fact that one hen is beginning to exhibit the same symptoms shows the whole flock has been fed too heavily.

The first thing to do when liver disease is suspected is give the whole flock a dosing with Epsom salts. This helps to carry off the waste matter which is clogging the system. If there is already fatty degeneration, Dr. Kaupp says treatment is of little use, though podophyllin in one grain doses may be given every three days with some hope of relief. Where the disease has not advanced so far half a teaspoonful of Epsom salts to each hen, mixed in a small quantity of moist mash, may help to delay further development. More important than medicine is the addition of bulk to the mash. In summer it is always wise to double or treble the amount of bran in the mash, because bran is both bulky and laxative. In such a case as this it is a good plan to fill the hoppers with plain bran instead of the laying mash for a week or two, and then add meat scrap gradually, beginning with a very small amount.

Scarcity of green feed is a common trouble this summer. I know of no better substitute than sprouted oats or barley. Either grain soaked from 12 to 24 hours, then turned into a box where it can drain, covered with burlap, set in a shady place and kept moist, will begin to sprout in from three to five days. It is best fed as soon as the white sprouts begin to show, or at the latest as soon as the green is seen. A flock of heavy hens could get through the summer with no other grain than sprouted barley and find itself in excellent condition in the fall. There might be fewer eggs than when the heavy laying ration was kept before them and again there might be quite as many.

Bran with a little bone meal added (95 per cent bran and 5 per cent bone meal) is recommended by Professor Dougherty for pullets that are developing too rapidly through the summer. This maintenance mash is given in place of the laying mash wheu the pullets are from four and one-half to five and one-half months old and delays egg production while it builds up the body. Professor Dougherty claims that pullets fed in this way for six weeks will lay through the fall without molting though they are hatched in January or February.

It works all day—every day

The Mill Wheel turns as long as there is water in the chute. You *must* know that your tractor will "go" as long as there is fuel in the tank.

12 H. P. on Draw Bar

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is known for its dependable service. A steady stream of power flows from its mighty motor through all spur gear direct to the draw bar. Light tractor weight combined with great traction power; high wheels that roll easier and increase the amount of surface "grip"; center draft on all loads, preventing loss of power from side pull. The combination of all these—with a dozen other Huber features—makes the Light Four the last word in tractor dependability—and fuel economy, too.

Weight 5,000 pounds; pulls three 14" bottom plows; 12 h. p. delivered to the drawbar; 25 h. p. at the belt; Waukesha, four-cylinder motor; Perfex Radiator; Hyatt Roller Bearings; burns gasoline, kerosene or distillate; center draft; two speeds, 2½ and 4 miles per hour.

Write for "The Tractor in the Making", an interesting story of the development of the tractor as reflected in the successive models of the Huber for more than twenty years.

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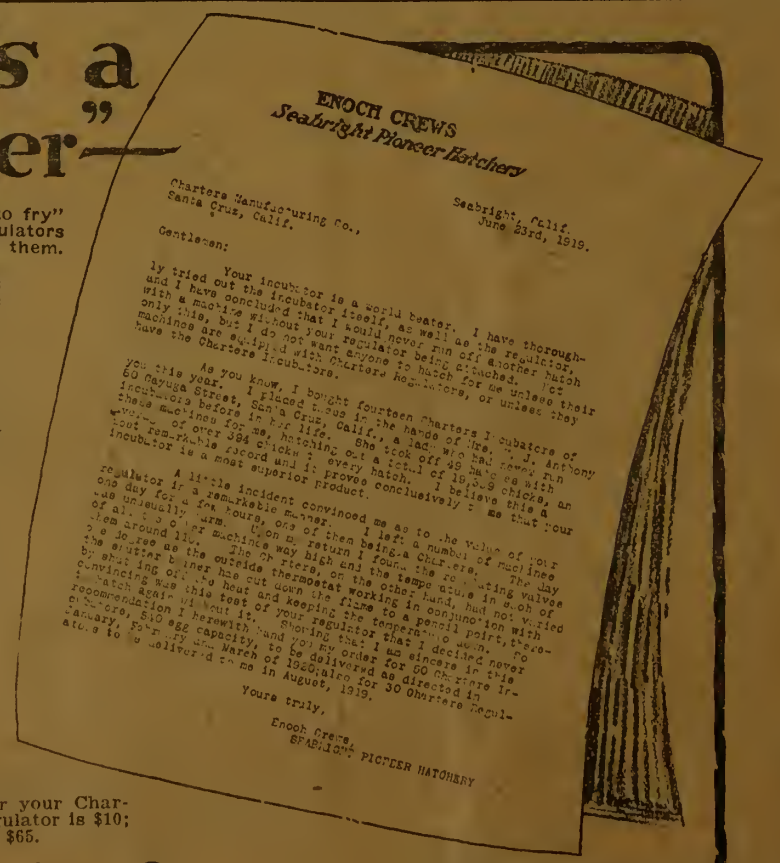
1012-14 So. Los Angeles St. Los Angeles, Cal.

Some territory still open for live dealers

he says "it's a world beater"—

and the man who wrote this had no "fish to fry"—only eggs to hatch—and Charters Regulators and Incubators have helped him hatch them.

It will be worth your while to read the letter, reproduced here. Mr. Crews knows a lot about incubation—and his experience is worth hearing about.



ENOCH CREWS
Seabright Pioneer Hatchery

Seabright, Calif.
June 23rd, 1919.

Charters Manufacturing Co.,
Santa Cruz, Calif.

Gentlemen:

Your incubator is a world beater. I have thoroughly tried out the incubator itself, as well as the regulator, and I have concluded that I would never run off another hatch with a machine without your regulator being attached. Not only this, but I do not want anyone to hatch for me unless their machines are equipped with Charters Regulators, or unless they have the Charters incubators.

As you know, I bought fourteen Charters Incubators of you this year. I placed them as follows: One in the hands of Mrs. J. Anthony 60 Cayuga Street, Santa Cruz, Calif., a lady who had never run these machines before in her life. She took off 49 chicks, an every hatch. I believe this a wonderful record and it proves conclusively to me that your incubator is a most superior product.

A little incident convinced me as to the value of your regulator in a remarkable manner. I left a number of machines one day for a few hours, one of them being a Charters. The day was unusually warm. Upon my return I found the regulating valves of all the machines way high and the other machines in a pedal position, therefore allowing the outside thermostat working in conjunction with them around 110°. The Charters machine had not varied the slightest bit and keeping the flame to a pedal point, thereby shutting off the heat and keeping the temperature down. convincing me that your regulator is to be depended upon. recommendation I herewith hand you my order for 60 Charters Incubators, $10 egg capacity, to be delivered as directed in January, February and March of 1920. Also for 30 Charters Regulators to be delivered to me in August, 1919.

Yours truly,

Enoch Crews,
SEABRIGHT PIONEER HATCHERY

Charters Incubator

(equipped complete with Charters Regulators)

Dozens of other poultry raisers—with from one to over one hundred machines—have attached Charters Regulators, and had the same experience.

How the Regulator Works

It's the two thermostats that do the trick—actually anticipating any change of temperature, and automatically adjusting the size of the lamp flame to meet the new condition, and keeping the egg chamber the same, no matter what the weather. The outside atmosphere may vary 70 degrees, yet the egg chamber will change less than half a degree. With the Charters'—you will not need an incubator-cellar.

The big fuel tank—a unique feature of the Charters Regulator—holds a supply that will keep the lamp running from two to three weeks without refilling. This means only one refill and trimming during the entire hatch.

Write today for catalog—or, better, order your Charters now, in time for the fall hatch. The regulator is $10; the Incubator, with Regulator attached, is $65.

Charters Manufacturing Co.

1334 Soquel Ave.
SANTA CRUZ, CALIF.

Skilful Culling Pays Big Dividends

By J. E. Dougherty

EVERY poultry raiser fully understands that intelligent culling of the unprofitable layers will increase the average productiveness of the flock and increase the profits. But are you putting that knowledge into practice? Are you reaping the financial benefits of intelligent culling?

Culling Pointers

Between July 1 and October 1 is one of the best times to cull laying flocks. The sooner the better. Culling slacker hens saves feed.

A good layer should be active, be a good rustler, have a well developed comb for that particular breed, measure three fingers, two and one-half inches, or more from rear end of keel bone to ends of pubic or lay bones, have pubic bones that are fairly straight and rather thin for the age of the fowl, have pubic bones that are about the thickness of two fingers apart during laying season, have a rather full but soft and flexible abdomen and large, dilated vent during laying period, have pale beak and shanks at end of laying season, be of good size for the breed and well proportioned, molt late in fall.

A hen must have a healthy vigorous body to be able to lay heavily. Fowls with weak constitutions cannot stand up under the strain of heavy egg production.

A well developed comb of good color, short strong beak, blocky head, bright eye, well proportioned body and clean cut action are indications of a vigorous fowl.

The size of the comb, in relation to the normal size of comb for that breed, is correlated with a hen's egg laying ability so that the size of the comb is one indication of ability to lay. The larger the comb the better layer a hen should be, other points being equal. Abnormally large combs, however, are not desirable.

The better the layer the later she should molt. The molting of a fowl before September 1 is one indication of a rather poor layer.

Pubic bones should be thin, fairly straight, somewhat flexible in a pullet, but will tend to get thicker on ends and more rigid as hen gets older. Those hens, the ends of whose pubic bones thicken very slowly and so remain relatively thin from year to year should be better layers than hens whose pubic bones thicken rapidly on the ends, other points being equal. Therefore the relative straightness of the pubic bones and the relative thinness of the ends of these bones are valuable indications of egg laying capacity.

The distance between rear end of keel bone and ends of pubic bones is a measurement of abdominal capacity. Hens measuring less than the thickness of three fingers (two and one-half inches) between these points are usually culls as shown by other indications. Laying hens need good sized abdomens in which to manufacture a good yield of eggs per year.

During laying period, the distance between pubic bones increases to the thickness of two fingers or better to allow of free passage of egg. When laying stops, ends of public bones may come closer together again.

In laying period abdomen becomes fuller and vent more dilated due to stretching of the abdominal tissues to allow for the increase in size of the egg organs while actively functioning. The abdomen should, however, remain flexible to the touch. The accumulation of excess fat in abdomen crowds egg organs, interferes with and checks production and is indicated by abdomen losing its flexibility and becoming hard to the touch.

A hen in good laying condition should be in good flesh but not overfat as shown by a hard abdomen and a too plump breast.

In yellow shanked varieties like Leghorn, Ancona, Plymouth Rock, Rhode Island Red and Wyandotte, good layers "lay out" the yellow color in beak, earlobes, vent and shanks as laying season goes on so that the comparative shades of yellow of these parts in different fowls after July 1 is an excellent indication of the egg laying performance of these fowls. Pale shanks and beaks after July 1 indicate good layers whereas bright yellow shanks and beaks indicate culls.

The amount of yellow corn, kind and abundance of green stuff, etc., fed may affect rate of "laying out" of yellow color in different flocks because such feeds contain considerable yellow pigment. For this reason color comparisons should be made of individuals in same flock and fed in same way and not between birds in different flocks and fed differently.

For full details on yellow color as an indicator of egg laying ability send for a copy of California experiment station Circular 197 if you do not now have a copy.

The more different indications that are used in culling poor layers and selecting extra good layers the more accurate the work will be. Experience should soon enable one to cull laying flocks with surprising accuracy.

Are you getting that experience? Remember that skilful culling pays big dividends.

Farm bureau meetings in Santa Cruz County; Happy Valley, August 22; Soquel, 27.

RHODE ISLAND WHITES

Volume I. No. 1 of the Rhode Island White Bulletin is now issued by the club of which M. E. Bemis of Phoenix, Arizona, is the secretary. The first number gives itself principally to the answer to the question, "What are Rhode Island Whites?" The club makes a fine showing for this breed.

Poultry Queries

Conducted by J. A. Koethen

Chicks Dying

Can you tell me what is wrong with my young incubator chicks that seem to be all right until they are about six weeks old when they droop their wings, lose appetite and then die—Subscriber, Long Beach.

Your chickens may be the victims of red mites which hide in every coop that is not frequently disinfected with strong insecticide, or they may have coccidiosis, a digestive trouble which kills many chicks which are not properly fed and brooded, and sometimes gets into well cared for flocks. If the droppings are loose and bloody, you can safely conclude that coccidiosis is in the flock. If the droppings seem normal, go for your coops. The only cure for coccidiosis is sour milk or buttermilk kept before the chicks constantly. In order to get them to drink as much of this as they should have, it is necessary to cut down their ration, keeping the mash away from them most of the day, and giving only a little grain till there is improvement. Whether there are bloody droppings or not, your coops and houses should be washed out frequently with the hose, and painted or sprayed with some cresol preparation or crude carbolic acid and kerosene, using one part carbolic acid to eight or ten of kerosene. A neighbor of mine, who has a splendid flock of show birds came to me one morning last May in great distress over her chickens. They were all, old and young, standing around with drooping wings, and several had died. Other flocks she knew of were affected the same way. What mysterious disease was attacking them? I took one look at her drooping birds and said, "Put them in a temporary shelter somewhere and don't let them go back into the coops till you have cleaned and washed them and painted them with kerosene and carbolic acid," She took my advice, which is more than some people do, I fear, and in a short time the birds were over their mysterious attack.

The Motor Truck a Farmer Would Build

IF FARMERS pooled their ideas for building a practical motor truck that would best serve their everyday hauling needs, it would offer nothing not now found in the International Motor Trucks.

The reason is plain. The International is the result of a thorough knowledge of farm conditions. This Company knows country roads. Ample provision has been made to withstand the strain and stress of highways that place an unusual tax on parts subject to wear. Only the best materials are used, after thorough test. The truck is simple and durable.

International Motor Trucks

will do the work expected of them at a cost farmers can afford. They give a service that is reliable, prompt and economical in the severest test of all—**steady performance in actual daily use.** They have ample power for any emergency and can be depended upon to keep going every day in the year.

Farmers everywhere find an International Motor Truck a source of profit from the outset. It saves time, labor and distance. Markets are brought to the door and better prices are possible for farm produce, which retains all its freshness. The item of return loads is an important one from the standpoints of both business and convenience.

There are four sizes of International Motor Trucks —1,500, 2,000, 3,000 and 4,000 pounds capacity, with bodies suitable for every kind of hauling.

We have a dealer, a branch house, or a service station somewhere near you, where the line can be seen, or we will send full information promptly if you will write us.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines

Binders Push Binders
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Orchard Harrows Cultivators

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Haying Machines

Mowers Side Delivery Rakes
Comb. Side Rakes & Tedders
Tedders Loaders (All types)
Baling Presses Rakes
Sweep Rakes Stackers
Comb. Sweep Rakes & Stackers
Bunchers

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Ensilage Cutters Corn Shellers
Huskers and Shredders
Hay Presses Stone Burr Mills
Threshers Feed Grinders
Cream Separators

Power Machines

Kerosene Engines
Gasoline Engines
Kerosene Tractors
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Motor Cultivators

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Dairy Equipment

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Motor Trucks Gasoline Engines

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International Harvester Company of America
(Incorporated)
CHICAGO U S A

At the Fair

The thousands of cars parked at every big fair plainly indicate their important place in rural life.

They have become as necessary as telephones—*almost* as indispensable as binders, plows or harrows.

And because the dependable and economical operation of your car hinges so largely on tires, it pays to equip it with good tires.

—tires you *know* are good.

By the same token, it's good business to buy tires that are *exactly* suited to *your* car and *your* individual driving conditions.

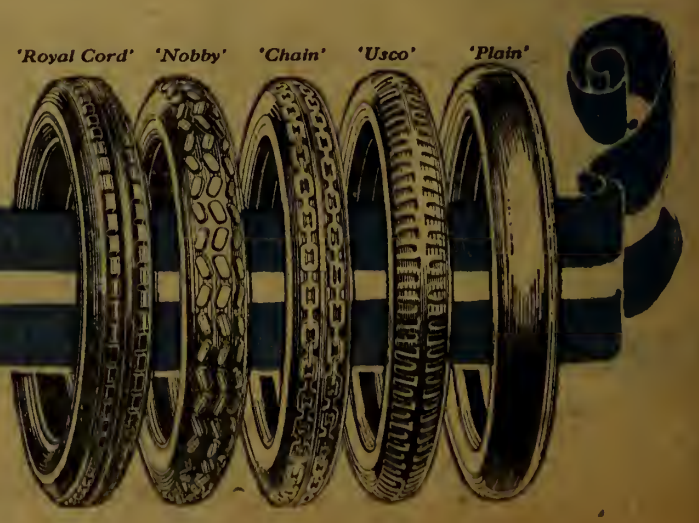
There are five types of United States Tires—one for every need.

They're all good—all recognized leaders in their respective classes. All are built to give the utmost in service—to last and last and keep on lasting.

All contain the great strength developed by the long experience and extensive manufacturing facilities of the largest rubber company in the world.

It makes no difference what your driving conditions may be, the nearest United States Tire Sales and Service Depot Dealer can supply you with good tires that will *exactly* meet your needs.

United States Tires are Good Tires



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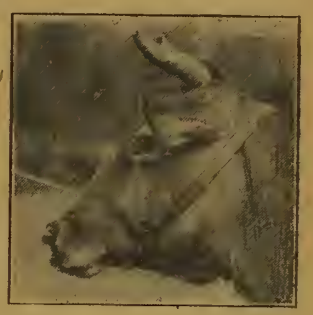
CALIFORNIA CULTIVATOR

and ***LIVESTOCK*** *and* ***DAIRY JOURNAL***

Los Angeles *An Illustrated Weekly for the Rural Home and Ranch* ***San Francisco***

Vol. LIII **August 30, 1919** **No. 9**



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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

Vol. LIII No. 9

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Leroy Andersen — W. S. Guilford

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The San Francisco office is Room 322 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Saturday, August 30, 1919

OUR ADVERTISERS RELIABLE
We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

This week's cover is a sort of composite picture of the best of California live stock, and a gratifying feature is that, with the exception of the two small upper corner pictures, all are of California herds, studs and flocks. They all suggest the growth of the pure bred live stock industry in this state and indicate the quality of live stock that will greet the thousands who visit the state fair.

LIVE STOCK PROGRESS

To those who believe that California is destined to be one of the great live stock states in the Union the past 12 months hold high satisfaction.

More real progress has been made in the past year than ever before. All breeds have set new marks and plans are being made now that indicate an even wider extension next year.

No fear need be felt that there is any indication of a boom or that the industry will expand too rapidly. The development in the past has not been in keeping with the actual needs of the state. California has been backward, and the present and future expansion will need to attain large portions to be up to the existing and certain continued demand. Enough has been accomplished by California breeders in competition with breeders in established live stock centers to indicate that California can produce live stock of a character and quality the equal of any.

Breeders can order their operations with the greatest confidence so long as they keep in mind the real essentials, which they seem disposed to do.

GREAT ASSET

The national forests, practically all west of the Rockies, net the federal government, from the sale of timber, pasture and water power, over $4,000,000 annually. As yet the returns from water power are much less than from timber or pasturage. This latter source will, however, materially increase its financial worth; pasturage may slightly with proper management; and the forests should be made to yield a greater amount of timber year by year. In fact, it is the effort of the federal government to so manage these national forests that the country's timber supply shall be maintained and even increased. Meantime there is a privilege in which all may be engaged, and that is "Watch our own smoke and prevent forest fires so far as possible."

TRUE COOPERATION

The California Walnut Growers' Association says: "A man's value to his community lies in his ability to think individually and to act collectively." Unfortunately, however, the ordinary producer who is just beginning to think of cooperation wants to reverse this plan. Lots of fellows have the idea that they are "surrendering their individuality" and giving up their own civic rights by the use of common sense in placing their business in the hands of a business manager.

May people of this type increase their value to the community by more individual thinking and more collective acting.

HOLSTEIN SCANDAL

The Holstein-Friesian Association has just made public a great scandal perpetrated by one Cole in an effort to make sensational seven day records. How extensive these fraudulent Cole records are is not known at this time. The case is most unfortunate as values on certain animals will be affected and the exposure may tend to discourage some breeders and cast reflection on the entire pure bred industry. On the other hand the expose can not but eventually be a good thing. No business is so dependent on the integrity of the individuals engaged as the pure bred live stock industry, and the very emphatic and right stand taken by the officers of the association is a forceful declaration that the business will be kept clean at all costs. Such a stand will establish confidence.

In the meantime Holstein breeders need feel no alarm over the case or lose faith in the value of tests. The breed is bigger than a few crooks, and official testing is a policy that will stand.

Steps should be taken to establish legal penalties for such frauds in keeping with the importance of the crime.

STATE FAIR

From a stripling exhibition of a few years ago the California state fair has attained proportions that entitle it to rank among the larger fairs of the country. While the growth in the past few years has been marked, there is little doubt but that the coming years will see continued development.

The state fair is the one big annual event by which to measure the development of the resources of California and is one of the most influential of the agencies employed toward education.

The one time fair built around horse races and a blatant midway has given way to a representative and educational exposition of all lines of activity.

The service the California state fair has rendered to the cause of agriculture and live stock advancement can in no way be estimated. Year after year it has been the means for establishing standards, practices and types. Year after year it has offered inspiration and encouragement to thousands.

California is a better state because of the state fair, and by holding to the traditions of the past and with eyes to the front and a determination to make each succeeding fair hold a larger part in the activities of the state the future greatness of California is assured.

READY FOR OPENING

Many of the exhibits at the coming state fair are already in place; the $300,000 building is just completed; the grounds are becoming more beautiful and better adapted to a thoroughly agricultural fair every year, the greatest of California's state fairs will be held within the next few days.

President Roeding and Secretary Paine, in fact, all the members of the board of directors, are on the job. At the close of the last fair Mr. Roeding took his stengrapher and went amongst the exhibitors and asked them to file their complaints, which were duly taken down and considered, and those complaints have formed the basis for the elimination of everything which lessens the effectiveness of the state fair for California's advancement. Chas. Paine has been on the job of managing the state fairs for a score of years. He knows the work and the needs of the exhibitors.

The Cultivator has a corps of contributors and camera men on the grounds, and its issue of September 13 will give items which will prove educational for those who are unable to get the greater advantage of being there in person.

THE STRIKE

Thousands of tons of fruits and other perishables are rotting in the freight yards of Los Angeles. This is due to a strike for higher wages, not on the part of the men of the steam railways, but on the part of the inter-urban lines of the Pacific Electric, and the steam railway people are striking "in sympathy." The strikers are having really an enjoyable time. The railway control is not worrying for the taxes paid by the people of the United States will be sufficient to cover the loss.

Meantime the fruit growers, the canners, the fruit handlers are suffering immediate loss and products which should add to the wealth of California will become fertilizer.

The time will come when somebody who is big enough will devise a scheme to prevent the awful waste of these strikes and we will all wonder why we were not sufficiently wise to formulate similar plans before.

* * *

We may add that because of the strike much of copy for articles and even copy for ads. (which breaks our hearts), all intended for this special number, is still on the road. This has been in part overcome by liberal use of telegraph service between here and Sacramento.

Los Angeles postal authorities are equal to the occasion and all outgoing mail is being handled. Mail to San Francisco and Northern California is sent via steamers and auto trucks are handling San Joaquin Valley, Central and Southern California points.

STANDARDIZE

Several county horticultural commissioners, acting as deputies of the state commission, are taking vigorous action in the enforcement of the fruit standardization law. This campaign has been so effective that it has resulted in the active support of the state finances by several violators of the law. Ten to 25 dollars seems to be the favorite amount of fine though it is rumored there will be a material increase for third and fourth offenses. In a recent issue of the weekly news letter from Director Hecke's office we note:

"A flagrant case was that of James S. Anderson of Scobel & Day, who was fined $20 for shipping pears already condemned as being infested with codling moth. Two Japs each forfeited $25 for deceptive packs, having "paraded" fine tempting tomatoes on top, when those on the bottom were worthless, except for making paste. In addition, the commissioner has compelled these Japs to repack 200 cases of tomatoes to comply with the law. Another flagrant case was that of a Greek vender, who contributed $25 for "slipping" the public codling moth worms concealed in pears. This particular offender had been warned several times on this same count."

If this good work continues it will increase California fruit's reputation or rather the reputation of the growers and packers. The quality of California's fruit has long been established; so also has been the fact that California fruit's quality is not always indicated by the top layer.

Let grower and shipper unite with the commissions in this good work and greater wealth will be ours.

The CALIFORNIA CULTIVATOR presents herewith its Annual State Fair issue, but owing to strike conditions in Southern California and no mail having reached this office from our San Francisco, Sacramento, New York or Chicago offices since Saturday, August 23, many columns of advertising scheduled for this issue had to be omitted. Therefore we apologize to those ordering space in this issue whose copy did not reach us in time. We regret also that owing to strike conditions a car of special paper which was ordered in plenty of time for this issue is tied up, making it necessary for us to draw on our reserve stock and to run only 72 pages, which, by the way, is the largest issue of a farm paper ever published in California.

The State Fair is a California institution, and it is with pride that the CALIFORNIA CULTIVATOR presents this issue. Material from all sections of the state is evidence of good faith shown the Cultivator by many firms and individuals who patronize our columns. The fidelity of the subscribers and the untiring efforts of our staff make it possible to issue the biggest and best farm paper in California.

CULTIVATOR PUBLISHING COMPANY
Frank H. Thomas, President.

The $300,000 Concrete and Steel Horticultural Building Just Completed on the State Fair Grounds at Sacramento.

Importance of Agricultural Expositions

By R. P. Royce

THE year 1919 can be set down as one of the most important in the history of live stock development in California. California is not the oldest state in the Union by any means; neither is it the youngest. In many ways this state stands at the undisputed top; in others only a few of the bottom rounds of the ladder have been scaled. From a live stock standpoint California has been a state of paradoxes. Favored with natural conditions not excelled anywhere for live stock production, ranked as one of the great live stock producing states, with thousands upon thousands of cattle and sheep ranging the hills and valley stretches, California, up to a comparatively recent time, bore the unique reputation of being the home of the best light horses and the poorest of all other classes of live stock. The tule-rooter hog and the Mexican steer claimed undisputed dominion over the best feed in the West, and only the fact that they ranged on abundant and nutritious feed enabled such renegades of the live stock world to show any sort of profit to the owners. But as time passed the old order changed, but only very slowly.

Naturally, the first class of live stock to be accorded any consideration, aside from the thoroughbred and standard-bred horses raised by the old time kings of the '49 days, was beef cattle. Here and there a few progressive range men started pure bred herds of beef cattle, Shorthorns almost exclusively; the names of Ashburner, Glide, Gibson, Murphy, Howard and Rush coming to mind more readily, with a few other cattlemen bringing out registered bulls for their own outfits. The work of those pioneers was uphill all the way, and the credit due them for blazing the trail will never be adequately recognized. But with such a start the progress made, if slow, was certain.

The next step in live stock development was in the dairy industry. Ordinarily marked improvement does not come until after beef cattle, sheep and hogs have held the field. Not so in California. About 30 years ago Frank Burke established a herd of Holsteins, and his work was followed up by the Mills' Estate, Pierce and Hotaling.

The dairy industry came in for considerable expansion, but neither the beef industry nor the dairy industry responded to development to anywhere near the extent justified by the natural conditions of the state. For years these two lines of animal husbandry just about held their own. Finally the dairy industry got under way. During the past ten years the progress made has been marvelous, and today California boasts of some of the top herds of America, and indeed the world. It has been conclusively proven that California can produce the superior of any dairy herd in the world, the world records held by California cows being the proof offered.

From time to time a few pure bred herds of hogs were started, but only a few, Elias Gallup down at Hanford, Murphy in Sacramento County, and Bassett being the pioneers.

The first big event from a live stock standpoint to shove industry ahead in this state was the Panama-Pacific International Exposition in 1915. Even the great plans for that show were interfered with, the foot and mouth epidemic cutting off the major portion of the Eastern exhibits. But the influence of the show was far reaching.

Following the exposition many new herds of swine were established, all herds coming in for a share.

Then one morning in December, 1916, the word came that two California bred and raised steers, shown by the University of California at the International Live Stock Exposition in Chicago, the world's greatest show, had won the two highest honors—grand champion and reserve grand champion. The influence of that exploit was tremendous. It was positive proof that California could produce the best in beef cattle as well as dairy cattle.

The following year California Berkshires made a clean sweep at the National Swine Show. Since that time events have happened fast.

During all the years of development the California state fair stood as one of the powerful factors for better agriculture and better live stock. Since 1854 this institution has served as a beacon light and a shrine for live stock breeders, and its influence on the live stock industry of California can in no way be estimated. Large credit must be given.

For a number of years it has been felt that there existed a real need for more big shows, shows that would feature live stock to an even greater extent than possible at Sacramento. It has long been the hope that some day events would so shape themselves that important shows would be held at San Francisco and Los Angeles. The supporters of the plan were firm in the belief that shows at both cities, as well as the state fair, would do more than any other factor to promote the development of enthusiasm for better live stock. Last year it appeared that the dream would become a reality. San Francisco and Los Angeles scheduled shows. Then came the flu, and the history of the two shows last year is well known. Los Angeles finally held hers, but San Francisco was forced to abandon the enterprise.

Such a misfortune overtaking an initial show might be expected to crush all enthusiasm, but not so in either city. Early this year plans were again started looking toward the rehabilitating of the unfortunate shows, and so determined were the promoters that every obstacle has been overcome, and nothing short of a recurrence of the flu will prevent the gates opening on time.

Three big shows in 1919! The culmination of years of planning and hope. What wonderful possibilities center about those shows! How will they affect the live stock development of this state? What inspiration will they hold out to all breeders and hundreds of men and women who will enter the business?

From the Oregon line to the Mexican border, from the Coast to the Sierras, there exists a quickened interest in better stock of all kinds. On all sides one can sense this interest, and it is certain that all that is needed to start a wide expansion of the industry is the inspiration these three fairs and live stock shows will provide.

During the past year more progress has been registered throughout the state than ever before. More men have made beginnings; several large herds have been started; more top animals have been produced and sold; more high class breeding animals have been brought to this state; more public sales have been held; more new records have been established than ever before. With all this enthusiasm sound to the core, because better live stock is sound, the year 1919 will occupy a large place in the future annals of our live stock affairs. After years of slow progress, the opening wedge has been started. The pure bred live stock industry of California is off to a flying start. Enough has been accomplished to indicate the possibilities. With unsurpassed natural conditions, knowledge of what can be done, enthusiasm for the work in hand and faith in the efficiency of better live stock, the future indeed looks bright.

Agricultural News Notes of the Pacific Coast

Northern California

Shasta County expects a 1200 ton crop of prunes.

Placer County has had several serious forest fires.

Oroville canneries have put out a heavy pack of peaches.

Placer County farm bureau fair opened August 25 at Roseville. It lasted four days.

Sutter County is sending 60 carloads of Tuscan cling peaches a day to the canneries.

Teachers of agriculture from seven states recently met in conference at the University Farm at Davis.

Arbuckle, Colusa County, is now harvesting Nonpareil and I. X. L. almonds. The crop will be heavy.

Arbuckle is harvesting almonds. Prices will probably be named by the association early in September.

Fruit growers of El Dorado County are making plans to erect a community dryer at Placerville.

There will be a fine exhibit of pigeons and rabbits at the Land Products Show at San Francisco.

San Francisco has ordered 18 carloads of government food supplies which will be sold at retail by the city.

The Live Oak center of the Sutter County farm bureau is showing two films depicting the value of good roads.

The annual fall conference of farm advisers and farm bureau presidents will be held at Berkeley the middle of October.

Irrigation was interrupted for several days in the Paradise district, Butte County, owing to the breaking of canals.

Farm owners recently met at Placerville, El Dorado County, to discuss means of putting irrigation water on their lands.

A tractor course is to be given at the University Farm at Davis September 16-25. Enrollment is limited to 180 students.

Farm Adviser Mills of Solano County is conducting demonstrations to show the value of distillate as a weed discourager.

The Chico district expects a 2000 ton almond crop valued at $1,000,000. Contracts are being made at as high as 30 cents a pound.

Susanville and Leavitt in Lassen County are contending for the establishment of the box factory of the Fruit Growers Supply Company.

The Cloverdale Reveille says that 10,000 tons of wine grapes have been shipped East but they are not called wine grapes any more—jelly grapes.

Sebastopol apple growers have seriously felt the car shortage. On one day recently they report 100 carloads packed and waiting for cars, with only 16 cars available.

Prune growers of the Healdsburg district of Sonoma County have agreed to pay $5 per ton to prune pickers who stay through the season, and $4.50 to temporary workers.

The annual meeting of tho Tehama County farm bureau will be held September 27 at Courtland Park, about nine miles southwest of Red Bluff. There will be free barbecued meats and coffee, and in the afternoon live stock judging demonstrations.

Central California

Clovis, Fresno County, now has 12 fruit packing plants.

The honey crop of Fresno County will be short this season.

Cantaloupe blight has struck the fields in Merced County.

The pack of apricots and peaches at Porterville canneries will amount to $700,000.

Fresno County has shipped out most of the Malaga crop that will be used as green fruit.

Farm bureau meetings will be held in Merced County at Merced Colony, August 25; El Nido, 27.

The Oakdale irrigation district is planning to buy a steam shovel to increase the size of its canals.

Santa Cruz County will ship out about 3000 carloads of apples this season mostly Newton Pippins.

Farmers of the district above Shasta, Kern County, are planning erection of a cooperative warehouse.

Many of the Turlock cantaloupe fields that it is thought were down and out are showing a good third setting.

C. R. Snyder, Selma, Fresno County inspector of apiaries, reports foul brood practically exterminated in the county.

Land owners of the Orange Blossom section of Fresno County have declared themselves in favor of the proposed Melones dam.

State dairy inspectors are waging a campaign against unsanitary dairies in Tulare County and a number of prosecutions have resulted.

Discovery of oil in Tulare County near the Tulare-Kern County line near Delano has sent up the price of land in the immediate section from $8 to $120 per acre.

Modesto butter is being canned and shipped across the Pacific to the Orient and South Sea countries. The plant is turning out about 13,000 pounds daily.

The onion crop is being harvested in the Delta district with fair yield, but strikes have curtailed the movement on account of transportation being tied up on the river.

But one complaint was made on assessments in Tulare County this year, resulting in a lowering of $2, although the board of supervisors had to sit as a board of equalization for 12 days, under the law.

The state has 6570 acres reported as planted to commercial onion crops and in addition 1700 acres in the Delta district contracted to seedsmen. Last year's planting to both commercial and seed crop was much larger.

Tomato fields in the Santa Clara Valley are not showing a normal growth. Diseases have been reported in various parts of the state. Fields in the Manteca district show spotted condition and do not promise heavy production.

The Poplar farm bureau conter will cooperate with the local grange in holding a community fair the middle of October. This promises to be a fair well worth attending. While it will not be large as most fairs go, it is being pulled off to stimulate interest in better crops and livo stock.

Southern California

Rialto grape growers are shipping table grapes.

Threshing of Blackeyes has started in Orange County.

Bean threshing has begun at Oxnard, Ventura County.

The new cannery at Camarillo has a pay roll of 175 people.

Beans generally are looking well near the coast; only fair in interior.

Imperial Valley has shipped out this season 7830 carloads of cantaloupes.

Unirrigated sugar beet crops are suffering seriously from lack of water.

California Bean Growers Association is demanding tariff protection for beans.

The navy department is to install a powerful wireless station at Point Hueneme.

The San Fernando Valley, Los Angeles County, estimates its peach crop at 20,000 tons.

Prof. E. C. Vorhies will take charge of the live stock exhibit at the Riverside Fair.

The cannery at Lankershim, Los Angeles County, is starting on a six weeks run on peaches.

Watermelon acreage in California is estimated by the bureau of crop estimates at 5530, with production of 2289 cars.

Apricot pits are selling at $40 a ton. Formerly these were all shipped to Germany, but are now processed in this country.

The Pomona-Spadra-Walnut farm bureau met at the Spadra school house August 22 to discuss work of squirrel eradication.

The Arlington cannery has begun work after being closed for three weeks following a fire which destroyed a portion of the plant.

Orange County reports its output of Limas will be not much more than a fourth of normal crop. The county produced last year 500,000 bags of Limas.

California had in cantaloupes this season about 25,000 acres, of which 14,000 to 15,000 were in Imperial Valley and 10,000 to 11,000 in the San Joaquin.

Ranchers of Victor Valley are suggesting the formation of an irrigation district under the state laws unless the United States reclamation project materializes very soon.

Orange County's crop of Lima beans it is thought will not be over one-fourth of normal; Blackeyes about 20 per cent. Orange County last year produced 500,00 bags of Limas.

The new Chino Walnut Growers Association has already signed up more than 1000 acres. The Chino walnut growers formerly marketed through the exchange at Walnut.

The property owners along the coast of Los Angeles and Orange Counties are opposing the application of the Los Alamitos Sugar Company for permission to run a waste water pipe line from their factory into the ocean.

A plan is being pushed for the formation of an organization of all citrus and deciduous fruit growers of Riverside and San Bernardino Counties. The purpose of the proposed organization is to provide a contral markoting bureau by which the crops of the members can be handled to better advantage.

The Coast and General

Apples are yielding well in Nevada.

Cotton picking is well under way in Arizona. A normal crop is expected.

The city of Phoenix has purchased $80,000 worth of army food, which will be sold to citizens.

The Western Fruit Jobbers Association will meet in annual session in San Francisco February 2-7.

Alfalfa seed threshing is now in progress near Yuma with indications of the best yield in several years.

All crops in northwestern Nevada have suffered greatly from scarcity of water.

In the Yuma section cotton picking is well under way with yields estimated at a bale and a half to the acre and better.

Drouth still persists in most sections of Idaho. Use of water is limited in all irrigation districts and in some there is pronounced shortage.

The first bale of long staple cotton for 1919 was brought to a Phoenix gin by R. B. Spanaland, who also had the honor of producing the first bale for 1918.

In Arizona wheat and oats promise heavy yields of hay and grain, and the condition of wheat, barley and oats is from fair to good in most parts of Nevada.

English buyers during the past week have purchased from Hood River apple growers 75,000 boxes of fruit at an average of $2.00 a box on three grades.

Las Cruces District of New Mexico will have 500 cars of cabbage and 1500 cars of cantaloupes with prospect of a very largely increased acreage next year.

In northern Arizona wheat and oats are coming on splendidly and promise heavy yields both of hay and grain. In the dry farming sections of Arizona better than normal conditions are reported for all crops.

Apple buying in the Wenatchee Valley of Washington was held up recently by threatened tie-up of railroads. Prices are better than ever received before and many contracts are being made on orchard run basis.

The composite condition of all crops of the United States on August 1 was about 2.2 per cent below their ten year average on that date, 4.5 per cent lower than on July 1 and 0.2 per cent higher than final per acre yield last year.

The Exhibit Committee of Maricopa County, Arizona, has decided to make a display of agricultural products grown in the Salt River Valley at the International Soil Products Exposition to be held in Kansas City, September 24 to October 4.

There will be a slight decline in the amount of wool produced in Arizona this year from last year, according to preliminary estimates. The clip for 1918 was 5,628,000 pounds and for 1919 it will probably be not more than 5,000,000 pounds.

Milk dealers of Phoenix, through the Retail Milk Dealers Association have employed a bottle collector who is deputized as a special police with powers to search for empty bottles. His first report showed a collection of 5000 bottles from an area about four blocks square.

Why Agricultural Fairs in California?

IN the issue of the California Cultivator of September 16, 1916, editorial correspondence referred to the fact that "The one event of state fair week most spectacular and most commented on was the burning of the great horticultural, or central and most important, building on the ground. Filled with choicest of fruits and other products, many mineral, fine art and other collections of various counties, it chose Sunday evening at the very beginning of the fair as the time for featuring the most spectacular event of California state fairs."

Today there opens in Sacramento the state fair for 1919. The magnificent $300,000 structure, which stands on the spot only a mass of blackened ruins three years ago, is filled with horticultural, agricultural and fine art exhibits and is surrounded by other exhibits of machinery, farm implements, farm power and, greatest of all, a wonderful exhibit of pure bred live stock to an extent greater than any preceding fair. If the strike of railway and other workers, which, as these words are being written, appears to be threatening the entire United States, permits we believe this great exhibit will be visited by a greater number of real seekers for information than any preceding fair. The horticultural building referred to was nearly one-half completed at the time of the last fair. Owing to labor and war conditions delays had prevented the completion of the northern wing, but today both wings and the great dome are housing exhibits which busy farmers and fruit growers have taken a moment's time to prepare.

George Roeding, the president of the fair association, has given of his time and energies in preparation for this event as never before, and not content with taking time to plan for the present show is looking ahead and planning for a greatly improved and beautified state fair grounds which shall have permanent artistic buildings for every department. Mr. Roeding proposes to present to the state legislature at its next session a request for a quarter of a million dollars annually for four years.

The $300,000 agricultural pavilion, recently completed, and the new women's building are to be the nucleus of the building plan as proposed. Other structures would include a concrete grand stand underneath which would be additional space for various exhibits, an automobile pavilion, stables and stock barns, buildings near the entrance in which counties of the state could install permanent exhibits, an horticultural building, poultry building, and buildings along the railroad tracks where stock, farm products, and other exhibits could be loaded and unloaded. All the structures would be of attractive design and absolutely fireproof.

The buildings would be so arranged that large parks or courts would occupy the space between and around them. In these spaces there would be planted trees, shrubs and vegetables representative of every country in the world. "The climatic and soil conditions at the fair grounds are such," said Roeding, "that anything grown anywhere could be grown on these grounds. Not only would there be gardens showing the wide variety of California products cultivated in such a way as to provide valuable information and suggestions for California agriculturists, but we would have experimental gardens as well. In these experimental gardens, for instance, we would have cork trees and licorice-plants, for I am convinced that cork and licorice could be produced just as readily in California as in localities in which they are indigenous. The state fair grounds would thus be the medium for innovations and new ideas in agriculture and horticulture. It would be an exposition grounds of which every Californian would be justly proud."

The plans will be placed before the next legislature when a concerted effort will be made to secure the appropriation.

But the plans for the future are not allowed in any way to affect preparations for this year's exposition. The stage is set for the 65th state fair, and the Cultivator has deemed it worthy of giving almost its entire issue in honor of this event. A glance through the paper, however, may make it appear that this is a live stock special. This is simply because the live stock people are alive as no others connected with the agricultural industry. California is learning its need of the live stock industry. More, it is meeting the need with characteristic California vigor, and the industry is increasing today as never before in the history of the state. A live stock showing such as this issue of the Cultivator makes would have been impossible five, or even two, years ago. The richest state is that in which the live stock industry is fostered. So while this number of the Cultivator is issued as a fair special it is with a great deal of satisfaction we call attention to the wonderful increase in the state's live stock industry.

But really this is not a state fair number so much as it is simply an agricultural fair number, for there are fairs and fairs, from San Diego to —nearly at least—Shasta. San Diego County opens up her former exposition grounds at Balboa Park and will hold for the first time in years a county agricultural fair. Her neighbor on the north, Riverside, is preparing, under the name of the Southern California Fair, for an exhibit of agriculture of the Southland. Los Angeles Liberty Fair of last fall was so seriously hit by the flu epidemic, quarantine for which proved such a serious handicap, that an agricultural fair will not be held, but an agricultural live stock show is under way. It will be under the management of C. R. Thomas who managed the live stock department of the Liberty Fair. Mr. Thomas is a life long live stock man and thoroughly at home in making preparations for this great event in the live stock industry of the Pacific Coast. Another fair in Los Angeles County, while not so ambitious, will illustrate, and we know will prove, the worth of Antelope Valley as an agriculturel section. The valley will hold its agricultural fair at Lancaster. A full list of all the fairs in the state is given, with dates, on this page. But let us refer in a word to another great exposition of live stock. that known as the California International, to be held in San Francisco. Prof. Gordon H. True of the state university is managing it, and this insures a live stock show of real merit, which will be a great factor in informing Californians as to the magnitude of the live stock industry.

But why is a fair?

There is labor shortage, and every business man is busier than ever before. Every move not necessary in the regular channels of business is only an added burden. Why not in a year such as this devote every energy to producing and to marketing the product?

Because the world never becomes so busy as to stop its educational work. No matter how great the press upon us we must keep abreast of the times. "To see it once is better than to read about it a thousand times," is an old Chinese proverb. One sees it at these fairs. Even some of the farm practices are seen in actual demonstration. But especially does one see it in the perfect lines of high quality pure bred stock. One sees it in the latest improved machinery. One sees it in the different forms of farm power which show wherein a hired man may be saved and electricity and gas made to do it.

Readers of the Cultivator, go to the state fair if you can, but in any case visit your nearest agricultural fair this fall.

FAIR DATES

California State, Sacramento, August 30-September 9, Secretary Chas. W. Paine.
San Luis Obispo County, San Luis Obispo, September 9-13.
Humboldt County, Ferndale, September 16-18, Secretary W. S. Moore.
Antelope Valley, Lancaster, September 17-20, Secretary, R. B. Cameron.
Napa County, Napa, September 18-20, Secretary E. P. Locanini.
Kings County, Hanford, September 22-27, Secretary Frank C. Russell.
Glenn County, Orland, September 22-27, Secretary E. A. Kirk.
San Diego County, Balboa Park, San Diego, September 24-27, Secretary Mellinger.
Fresno District, Fresno, September 30-October 4, Secretary C. G. Eberhart.
Napa County, Napa, October 2-5, Secretary Nathan F. Coombs.
Tulare County Live Stock Show, Tulare, October 6-11, Secretary R. C. Sturgeon.
Southern California, Riverside, October 7-11, Secretary W. W. Van Pelt.
Ventura County, Ventura, September 25-27.
Monterey County, Salinas, October 10-11.
Los Angeles Live Stock Show, Los Angeles, October 18-26, Secretary C. R. Thomas.
California Industries and Land Show, San Francisco, October 14-19, Secretary E. H. Brown.
California International Live Stock, San Francisco, first week in November, Secretary Gordon H. True.

Waiting for the Thriller

The state fair grounds sometimes seems hardly able to contain the immense crowds which gather. There is almost every day a good attendance, but usually on one particular day some spectacular event, and the making of it a holiday by Sacramento and the surrounding country, fills the three great grandstands, and they overflow. The great mass of people in the foreground is simply the overflow from the central grandstand.

Walnut Outlook

CIRCULAR Number 2 of the California Walnut Growers' Association estimates the coming walnut crop at 46,000,000 pounds. This will be by far the largest California has had. Last year's output was approximately 39,000,000 pounds and the preceding year, that of 1917, 32,000,000.

The circular continues:

Practically all shippers have apparently booked orders for tho full quantities of walnuts they estimate they will obtain from growers and have been off the market for some time. Within the last 90 days the association has been offered much business it felt necessary to decline as its estimated output of Number 1 Soft Shells and Budded has been long since contracted for. Thus, notwithstanding the heavier probable tonnage, the demand seems materially greater than the supply, especially for Number 1 Soft Shells.

During the last year Southern California has experienced a severe drouth (prevalent before July 1). The average rainfall in the walnut growing sections is about 17 inches annually. For the last 18 months the average rainfall has been but nine inches. This has proven greatly inadequate.

Those growers who have not an artificial water supply find that not only the vigor of their trees is impaired but that they will have only about one-third of a normal crop, with a very heavy percentage of Number 2's. However, fortunately eighty per cent of the walnut groves in California are under irrigation systems and most of these will return excellent crops, though the additional irrigation expense resulting from the use of at least three times the normal amount of water has been tremendous.

The big crop is due primarily to two factors. First: Better, more intelligent and more thorough cultural methods on the part of growers, due largely to the efforts and advice of the association's field department. Second: The ever-increasing acreage coming into bearing—(There are now 77,000 acres of walnuts in California.)

The walnut trees were fully a month later than usual in putting on their foliage and setting the crop, but the development of the nuts is now not over ten days later than normal. Because of this short growing season the nuts did not have time to develop as large average sizes as last year, consequently the crop will show about 17 per cent Number 2's and the Number 1's will not be as large as in 1918.

Practically the entire increase in production will be of the Budded variety, which fortunately will be of the usual fine size as most of the plantings for the last ten years have been Buds, and young trees always produce the largest nuts. Those of our trade who are not featuring Budded walnuts are overlooking a good bet. The Budded is the coming California walnut. It is larger, has a smoother, thinner shell, a plumper, heavier meat and a more exquisite flavor than the Soft Shell. Some day there will be ten pounds of Buds produced to one pound of Soft Shells. The merchant that features Buds now is rising with the tide. The differential in price on Buds this year will be lower than usual.

The average merchant perhaps doesn't realize how rapidly the farmers' cost of production is advancing. The monthly Reporter of the United States bureau of crop estimates shows that the average costs of 96 staple articles which the farmer needs have advanced 97 per cent in the last five years. With the walnut grower costs have this year practically doubled, largely due to the necessity of using almost three times the normal amount of irrigation water, most of which is pumped from wells, the water level in which has lowered through constant pumping in a year of light rainfall, and on account of the unusual amount of high-priced extra labor needed to apply the irrigation. Thus at even the highest prices the walnut grower may hope to obtain, his net profits will be smaller this year than usual.

During the past year or two prices on walnuts and in fact on most other commodities to many of us seemed unusually high, and they are high when measured only by the old standard of value of the dollar. Many of us lose sight of the fact that the dollar is simply a medium of exchange and its value can only be measured in the ratio it bears to commodities. There are practically no more commodities per capita now than there were five years ago, but there are about twice as many dollars in circulation, especially when we consider the tremendous volume of purchases made with the smaller denominations of Liberty Bonds. Consequently the value of a dollar today in purchasing any commodities, including labor, is hardly half what it was in normal times. Thus when one figures a dollar as simply a medium of exchange, prices can hardly be considered higher now than they were during the pre-war period. As a concrete illustration, the farmer today can only exchange a couple of bags of walnuts for the same suit of clothes, set of harness or bill of groceries that he could exchange two bags for in 1914. He pays his labor twice as much, but his farm hand can only buy the same amount of necessities with his extra wage that he did a few years ago when earning about half as many dollars.

The New Idea in Cooperation

By H. H. Warner

THE farmers' cooperative associations in California are stronger today than ever before. More and more growers are coming to realize that it is to their advantage to market their crops through these cooperative enterprises not only because of the greater returns which they receive but because these organizations are constantly striving to improve conditions in the industries with which each is vitally concerned.

The history of these great non-profit growers' marketing associations can be traced through three distinct stages, the first two of which are fairly familiar.

Whether it is the marketing of oranges, lemons, raisins, almonds or walnuts, the first great effort in each case was to establish a force of representatives in Eastern distributing markets and to build up an efficient sales organization. All of the associations in California were born of adversity and the lessons learned in the troublesome days of cut-throat competition, excessive commissions and inadequate distribution pointed the way to the building up through modern methods of a more efficient method of distribution at a smaller cost of operation.

The second stage of development was evidenced by a desire to reduce still further the cost of operation through the cooperative purchasing of supplies in large quantities. Supply companies, usually separately incorporated, were organized for the buying of materials used in the packing of the product. This idea reached its greatest development in the Fruit Growers' Supply Company of the California Fruit Growers' Exchange, which today owns not only the timber lands but also the mills where the box shook is manufactured. Nails, fumigating materials, fuel oil for smudging, fertilizers, etc., are purchased in the open market by the trainload and very appreciable savings effected through buying in large quantities and supplying the packing plants or individual growers with the material needed at actual cost. The same service is rendered members of the California Walnut Growers' Association in the purchase of large quantities of bags, twine, bleaching material, spray material, etc., at manufacturer's prices. The Raisin Growers' Association and many other cooperative associations of growers function in this same manner. Not the least of the reasons why the cooperataive grower secures higher net returns for his product than the independent grower is the saving made possible in the purchasing of his material through this method of collective bargaining.

In their enthusiasm over these savings, some of the supply companies have branched out to a point where the grower may buy his automobile tires, house furnishings, wagons, etc., at wholesale prices. Naturally this has encountered the opposition of the town merchants, and today it is generally considered the better part of policy to confine the cooperative purchasing idea to those supplies needed in the packing of the product and to those materials used by the growers which are not carried in stock by his local merchant.

With the same purpose in mind the larger cooperative enterprises in the past few years have developed the use of by-products to a high degree. The work of the California Fruit Growers' Exchange in the manufacture of orange marmalade from the cull oranges of its members is a well known example of the intelligent use of the poorer grades of fruit unfit for packing and shipping. In the California Walnut Growers' Association the cull walnuts are cracked and the extracted meats sold to wholesale confectioners the country over. This association has even gone a step farther and sold the shells at a nice figure to a manufacturer of dynamite.

In the case of both oranges and walnuts the members of the associations not only receive more money for their low grade product than was possible before, but the cull fruit is taken out of the hands of peddlers and fruit dealers who under the old system often misrepresented it in the coast market, making destructive competition for the better grades. Now it is possible for the tourists in California to purchase from the grocer or fruit vendor oranges, walnuts and other fruit which are equal in quality to what they buy at home, a condition which did not always obtain under the old plan when the local markets in California were usually glutted with inferior fruit.

The more recent line of activity in the development of the cooperative marketing associations, unlike the first two ideas, is concerned chiefly in advancing any movement which is of benefit to the entire industry, and in so doing of course the non-member benefits to the same extent as the cooperating grower.

Many of the producing industries of the state are facing rapidly increasing outputs. Extensive national advertising must be carried on by the growers' organizations in order to increase the consumption somewhat in relation to the larger output each year or else lower returns may reasonably be expected. The raisin growers have succeeded in this way in teaching the public to eat raisins the year round instead of only during Thanksgiving and Christmas. This same principle of increasing the demand through spreading the period of consumption is now being employed in the well directed advertising of the walnut growers who are handling a larger crop every year. The extensive publicity campaign of the orange growers has long been used as an object lesson in

BANISH SCRUB SIRES FROM UNITED STATES

With confidence that better live stock will bring satisfaction and many benefits to its owners, I invite the concerted action of farmers, stockmen, and others in banishing scrub sires from the United States. The widespread use of inferior male breeding animals has been for many years a cause of low production per animal and of needlessly poor quality.

The continuance of such conditions is uneconomic and unnecessary. The direct and practical means of improvement is to use breeding animals, especially sires, which are true representatives of breeds developed for a definite, useful purpose.

I am confident, too, that the public, knowing production to be performed with maximum efficiency, will look upon stock raising with increased respect and understanding. In a few localities noteworthy improvement in special lines has been taking place through individual and community efforts. Let us now hasten such improvement wherever live stock is kept in the United States.—J. R. Mohler, Chief, Bureau of Animal Industry, U. S. D. A.

this connection. Were it not for the splendid results which have been secured through stimulating the consumption by national advertising the growers of many fruits in California would be much more worried about overproduction. Of course it goes without saying that the grower who is not affiliated wtih the great cooperative associations benefits from the advertising to practically the same extent as the one who is a member.

The California Fruit Growers' Exchange has for years cooperated with all experiments looking toward the improvement of growing conditions. The work includes the carrying on of fertilizer test plots, variety tests for the selection of blight resistant trees, soil moisture plots for the control of dieback and an experimental plant for the manufacture under the direction of a university professor of a dusting compound for the control of aphis and the codling worm. Similar work of this nature is conducted by the other large cooperative associations, the results of which are of benefit to every grower.

Still more important in some ways than the advertising campaigns and the experimental activities is the effective way in which matters relating to freight rates, tariffs and legislation is handled. When matters of this kind arise these associations go to all the expense and trouble of preparing the growers' side of the case, usually with little or no assistance from the independent shippers who are not so directly interested in the welfare of the growers. The rebate in the freight rate on lemons won a few years ago by the California Fruit Growers' Exchange and the recent $10,000 appropriation by the state legislature for fighting the walnut codling worm are but two of a large number of cases which resulted from the favorable presentation of the growers' viewpoint by the large associations.

In all of these matters the associations are working for the advancement of the entire industry and are demonstrating a very commendable broad policy. Unlike the results derived from the work done in the first two periods of growth, however, the results from this third phase of activity are of equal benefit to the non-member as well as the member. The independent grower who refuses to contribute to the organization which fights his battles and generally improves conditions in the industry profits to the same extent as the loyal member.

Tractors Help Bean Growers

By Arthur L. Dahl

VENTURA County has always been famous for its beans, and the Limas of the South find a ready market throughout the world. But all the beans grown in California do not come from the 60,000 acres devoted to them in Ventura County, for the total bean acreage of the state exceeds 558,000 acres, and on this area the annual production is from eight to nine million bushels, or approximately 45 per cent of the entire crop of the United States.

The growing of beans presents special problems which must be solved by the farmers, and in the solution of these problems the tractor manufacturers of the Pacific Coast are affording aid of the most valuable kind. California is the home of the track-laying type of tractor, for it originated here and many of the largest plants for the turning out of these machines are operated in this state. Probably no one class of producers has found the California tractor more adapted to the many demands of their fields than the bean growers. In the bean fields of the state from the northern part of the Sacramento Valley to the fields of Imperial Valley, one can see the tractors chugging away at some sort of work, from plowing to harvesting. To meet the need of bean growers special types of tractors have been designed, with special tracks to give clearance of bean rows, and other adjustments to make them available for all kinds of field work.

Bean land should be plowed deep in the fall and allowed to remain rough until the early rains have softened the soil enough to pulverize. In doing this deep plowing the tractor has been found invaluable, for the work can be done with greater uniformity, in shorter time and with less expenditure of human labor than with the use of horses. In the Sutter Basin of the Sacramento Valley, where bean growing has reached large proportions during recent years, practically all of the big growers rely almost entirely upon tractors to do their plowing. For instance P. J. Hiatt of Woodland, who owns three 20-35 tractors, plowed last season over 1000 acres of bean land, harrowed, planted and cultivated over 3000 acres of land, and performed other work with his machines. F. M. H. Wulff of Grafton, used his 20-35 tractor for all kinds of bean work, including the plowing of 480 acres, the disking of 320, the harrowing of 480, and the planting of 400 to beans. So well satisfied was he with the performance of his machine that he intends to do all his bean culture this year by power farming.

The tractor will take care of the power requirements for getting the land in proper condition for beans from the early plowing through the various stages of rolling, disking and harrowing until the soil is ready for seed.

Bean farmers using tractors have found it very desirable to use the power machines for all operations because when the seed was planted by the tractor the rows were of uniform width, and the subsequent steps of cultivating could be carried on with the tractor because the machine would pull the implements exactly in the same order as the preceding step. Where planting was done by horses, tractor cultivation was found to be impracticable due to the impossibility of keeping the rows straight and parallel in planting. The average acreage cultivated per day was also found to be slightly higher than planted, less time being lost at the ends of the rows in turning and the filling of planters being eliminated. On the bean lands of the River Farms Company near Knights Landing, a tractor is used to pull six two-row planters, and the same machine will easily handle three four-row cultivators at one time. One tractor in the Sutter Basin planted and cultivated a thousand acres of beans during a single season, and the work was done in good time.

Bean pods ripen progressively upward from the base of the plant, the entire ripening period usually extending over several weeks. This gives considerable latitude in the time of harvesting operations, but in most instances the primary object is to complete the work before the occurrence of fall rains. Generally cutting starts when the majority of the pods have turned color, yet before the oldest ones have commenced to split. Where the rains come unusually early or the beans are late in maturing, great loss is apt to occur unless the harvesting can be rushed through with the greatest possible speed. Tractors have been found to be very valuable for supplying adequate power for the various steps in harvesting beans, from the cutting of the vines to the operation of the threshing machines.

Last season the weather conditions were adverse for beans in the northern sections of California as the season was late. Due to war demands an unusually large acreage was planted to beans, and in the harvesting of the crops the farmers who used tractors found themselves possessing an advantage over their neighbors who used horses. In many cases the horses could not finish the cutting in time to prevent loss from wet weather, while the tractor operators, through their ability to cut the vines faster and more steadily, were able to harvest their crops without loss. A tractor will cut from six to eight rows at a time, and the machine can keep up this work steadily from dawn to dark, whereas horses soon tire from the heavy strain. The average area cut in a day with a tractor last season was from 40 to 50 acres, and one owner cut more than 1700 acres for himself and his neighbors.

The tractor motor furnishes ample power for operating a bean thresher, and many owners of machines used them for this class of contract work

Another way in which bean farmers utilize their tractor power is to haul the threshed beans to the warehouse. By loading three or four wagons or trailers with the sacked beans, it is possible to make but one trip instead of several, with horses, and considerable time can thus be saved in getting the crop to market.

In the growing of beans there are long periods during the year when very little work can be done in the fields, and yet if the owner is to rely on horse power during the times when the work is heavy, he must feed and care for this stock during their periods of inactivity. With feed scarce and expensive, the maintenance of a dozen or more head of stock on the farm is a problem, unless adequate pasture is available for the horses.

Where a large number of horses or mules are kept on a farm it is often necessary to hire additional help to look after them, thus adding to the expense and increasing the housework of the wife. With power machines a great deal of this extra work and expense can be saved, for when the tractor is not in use it can be run into the barn and left without attention until needed again. After the mechanical features of a tractor have become familiar to one, almost anybody can operate it, and during the labor shortage resulting from the war many tractor owners found that their young sons and daughters could take their turn in keeping the tractor going in the field, after the machine had been started and adjusted by the father.

The tractor is coming into almost general use for bean culture because of its dependability during the peak times of field work. If weather conditions are adverse, the tractor will get the work done in the shortest possible time, often with the result of saving the crop from damage. During the heavy work of harvesting the beans it is often unusually warm, so that horses cannot give their full strength or endurance to their work. The insensible tractor will give of its sustained power hour after hour, unaffected by atmospheric conditions and the ease with which the power machine can be directed and turned will enable the operator to conserve his own strength and work for longer hours when the occasion demands.

This Year's Pear Crop

THE commercial pear crop of the United States, as estimated by the bureau of crop estimates, shows a five point increase over last month, and tho commercial crop in the important states is now estimated at 3,351,000 bushels as compared with 7,589,000 bushels last year, or 110 per cent of last year.

The feature of the report is the very large crop in California and the West generally. California has the largest commercial pear crop in its history, and the production is estimated at considerably over 4,000,000 bushels.

Conditions throughout the East have shown some improvement over last month, particularly in New York and Delaware. The Hudson Valley pear crop now promises to equal that of 1918. Michigan and Illinois have also increased over the July estimate.

California

California, which produces almost three times as many commercial pears as any state in the Union, now has prospects for 95 per cent of a crop, or 112 per cent of last year. Attention is called to the fact that usually only about half of the pear production of California was shipped fresh, approximately 30 per cent going to the cannery and 20 per cent to the drier. The estimate for California this year indicates that about 50 per cent will be shipped fresh, 40 per cent canned and ten per cent dried, although the disposition of this year's crop will depend on the relative price for pears for canning, drying and shipping. Solano County will ship about 75 per cent of its crop fresh, while Santa Clara County promises to can nearly 70 per cent of its crop. The Sacramento Valley will probably ship as fresh fruit over half its crop this year. The shipments of fresh pears from California to August 4 were 2200 cars as compared with 1500 up until the same date last year.

Washington

The Yakima Valley, which is the principal pear producing region in the Pacific Northwest now promises to ship about 2400 cars, or 25 per cent more than last year Of this crop over 80 per cent will be Bartletts and about 12 per cent Winter Nelis. The best crop in the Yakima Valley is found on the higher elevations. The Wenatchee Valley has prospects for about 600 cars which promise to be of fine quality. The Washington crop will move almost entirely in bushel boxes, 511 to the car and 51 pounds per box.

Oregon

The Rogue River Valley, centering about Medford, Oregon, which is the leading pear region in the state, now promises to ship about 650 cars in addition to 100 cars which have been sold to local canners. Bartletts are reported as being a very good crop, Howells are a fair crop, Bosc is a small crop, but of good size and quality; Anjous are a very good crop and quality good, Winter Nelis small crop and small in size. The 1918 crop for Rogue River Valley amounted to about 550 cars. Not many commercial pears are shipped from other points in Oregon except the Hood River Valley which will probably ship about 150 cars.

Colorado

The commercial pear district of Colorado is located in the Grand Valley, particularly about Clifton, Grand Junction and Palisade. The crop is now estimated at 387,000 bushels compared with 182,000 bushels last year, or 213 per cent of the 1918 crop. The crop will be the largest in the history of the Valley, several orchards coming into full bearing this year. A production of from 700 to 800 cars is now estimated for the entire Grand Valley estimates increasing materially over those of July 1. The quality is reported as excellent, fruit is large and clean, Flemish Beauty has the lightest crop of any variety.

Utah

Utah is not classed as a commercial pear state. However, from 35 to 40 cars will be shipped out of the Provo district in Utah County this year.

Eastern States

New York, the leading commercial pear state in the East, now has a condition of 35 per cent, or 630,000 bushels as compared with 828,000 bushels last year and 1,250,000 bushels in 1917.

The pear crop this month for New Jersey promises to be the same as last month, or 35 per cent as compared with a condition of 37 per cent last year. The Kieffer, which makes up fully 80 per cent of the New Jersey crop, shows a condition of 32 per cent, while Bartlett, making up about 15 per cent of the crop, shows a condition of 42 per cent. LeConte shows a like condition, while Duchess, which makes up less than two per cent of the crop, shows a condition of 40 per cent. Seckel indicates about one-third of a crop.

The commercial pear crop for Delaware this year is indicated at 30 per cent, or 240,000 bushels as compared with 296,000 bushels last year and a full crop of 800,000 bushels or 1,500,000 baskets. The pear crop for Delaware is usually shipped in five-eighths bushel baskets. Expressed in terms of car loads, allowing 500 bushels to a car, Delaware this year will ship 480 cars as compared with 592 cars last year and 1800 cars in a full crop year.

No change in the commercial pear crop for Texas is noted. It is now estimated at 75 per cent of a crop as compared with 60 per cent last year. The most important section in the state, around Clint and Ysleta, near El Paso, will probably ship 100 cars this year. The total carlot movement of pears for the state will probably not exceed 120 cars.

The commercial pear crop for Michigan is very light this year, being estimated at 15 per cent of a crop. Berrien County, with its production centering around St. Joseph and Benton Harbor and which normally produces 58 per cent of the total commercial pear crop of the state, will have less than six per cent of a full crop as compared with 45 per cent of a crop last year.

The commercial pear crop for Illinois is now estimated at 47 per cent as compared with 33 per cent of a full crop last year. The heaviest pear producing county in Illinois is Marion, with its production centering around Alma and Salem in the central and northern part of the county. The shipments from Marion County this year will approximate 125 cars, or better than 35 per cent of a full crop as compared with 20 per cent last year.

Pike and Daviess are the leading commercial pear producing counties in Missouri. A few cars are produced near Cedar Gap in Wright County. Probably not to exceed 40 cars will be shipped from the entire state this year. Kieffers are the principal variety grown.

THE WESTERN APPLE CROP

Washington

Conditions in Washington have generally improved during the month, particularly in the Yakima Valley and the Spokane district. This year Washington will be the leading apple producing state by a large margin and promises to ship approximately 21,300 cars as compared with about 17,000 cars in 1918. The Wenatchee North Central Washington district now promises to ship about 9600 cars. Conditions are excellent; fruit is very large and of superior quality. Of the 9600 cars promised from this district there will be approximately 2800 cars of Winesaps, 1800 cars Jonathans, 1300 cars Delicious, 900 cars Spitz, 800 cars Rome Beauties, 200 cars Winter Banana and smaller lots of a number of varieties. The Yakima Valley district now promises 9500 cars, an increase of 1500 cars over last month's estimate and 2000 cars more than last year. The increase is due to excellent growing conditions and the large size of the fruit, which is the largest in the history of the valley for this time of year. Jonathans will make up the heaviest production and and are 85 per cent of a crop, followed by Winesaps which are lighter or 55 per cent of a crop. Rome Beauty is about 95 per cent of a crop while Spitz and Newtowns are fully 85 per cent. The Spokane district, due to recent heavy rains, is now estimated at 700 cars as compared with about 1000 cars last year. A large part of this production will be Wagener and Jonathan. Walla Walla, which last year shipped only about 130 cars, now promises fully 1000 cars, of which about 450 cars will be Rome Beauty 250 cars Jonathan, 200 cars Winesap and 50 cars Yellow Newtowns; the remainder will be mixed. The White Salmon and Underwood section now promises to ship about 260 cars. The apples from the state this year promise to be of exceptional quality and size and will be loaded about 756 boxes to a car.

Oregon

Oregon now promises to ship about 5028 cars as compared with 2663 cars

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in 1918. Conditions in the Hood River Valley are excellent. The apples are of good size and quality and the estimated output for the valley is now 1,800,000 boxes as compared with about 1,350,000 in 1918. The bulk of this production is made up of Spitz and Newtowns. The Rogue River Valley or Medford district is estimated at about 700 cars, while the remaining counties in western Oregon will ship about 500 cars. The Mosier and Dufur sections in Wasco County are estimated at about 350 cars, while the Milton Freewater district promises about 500 cars, or twice as many as last year.

California

The Watsonville district, located in Santa Cruz and Monterey Counties, now promises to pack about 3,000,000 boxes as compared with 2,500,000 boxes in 1918. Present conditions are very favorable. Belleflowers will show fully a 25 per cent increase over last year, while Newtowns will run slightly better than last year. Growers report prices for fancy Newtowns at $1.85 to $2.00 per box. The Sonoma County apple crop is estimated at between 600 and 700 cars, of which nearly 400 are Gravensteins. The Yucaipa section in Southern California is fast increasing in importance and has a very good crop of splendid quality this year. The Watsonville dried apple output is now estimated at 4500 tons, while the Sebastopol section is estimated at 3500 tons.

Idaho

Idaho now promises to ship fully 4000 cars or 500 cars more than the 1917 crop. The Payette-Weiser district is estimated at 2500 cars, 700 of which will be shipped from Fruitland. The Boise Valley will ship 500 cars, Twin Falls 500 cars, and the Lewiston district 400 cars. The crop this year will be eight to nine times that of 1918 and thus far is of excellent size and quality.

Colorado

Colorado now promises about 2,523,000 boxes as compared with 1,581,000 boxes in 1918, or an increase of 60 per cent. The Grand Valley will probably ship about 1800 cars while Delta County promises about 900. Jonathan, Winesap and Rome Beauty are about 50 per cent of a crop and will make up about 400 cars, while Ben Davis and Gano are a full crop and will make up a like number of cars. Fremont County or the Canyon City district promises about 600 cars. Fruit in the latter district has been severely injured by leaf roller. Montrose County is almost a complete failure due to the heavy late spring frosts. Apples in Mesa and Delta Counties are of good size and quality. Weather is favorable for fine color and maturity. The crop thus far is generally free from worms.

Utah

Utah indicates a fairly light crop, or about 83 per cent of last year. Utah County will have about 250 cars, Davis County 125 cars, while Weber, Box Elder and Cache Counties will each ship less than 50 cars. Jonathan, one of the leading varieties, is generally reported very light.

New Mexico

The Pecos Valley in New Mexico is now estimated at about 500 cars. Ben Davis will make up the heaviest shipments. In addition there promises to be 50 cars of Jonathans, 20 of King David, 20 of York, ten of Winter Banana, and several cars of Winesap, Arkansas Black and Gano. The quality is good particularly in regard to size and color although there is considerable hail damage. San Juan district in northwestern New Mexico promises about 100 cars.

Montana

Montana is now estimated at 450 cars, most of which will originate in the Bitter Root Valley. The leading variety is McIntosh.

The man who is worthy of being a leader of men will never complain of the stupidity of his helpers, of the ingratitude of mankind, or of the inappreciation of the public. These things are all a part of the great game of life, and to meet them and not go down before them in discouragement and defeat is the final proof of power.—Elbert Hubbard.

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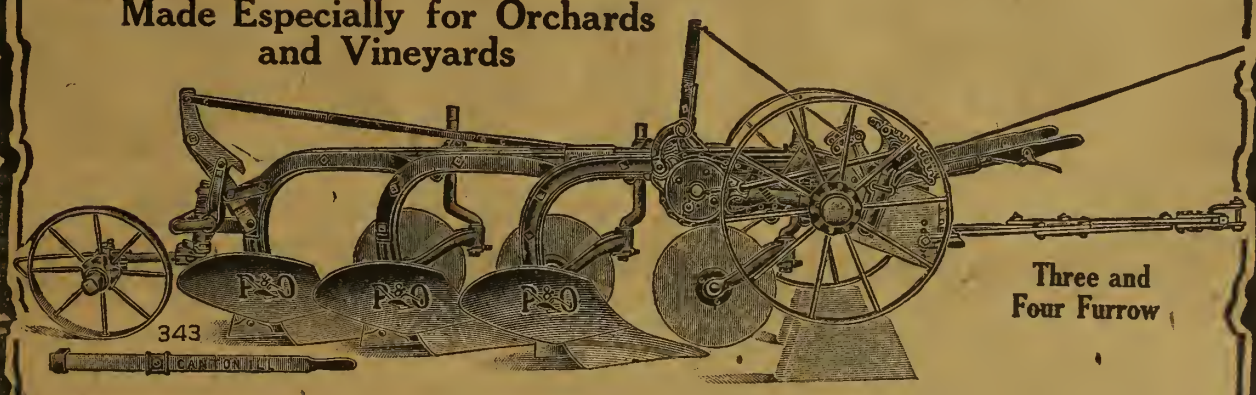

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Peach Crop Report

The condition of the commercial peach crop in the United States, as estimated by the bureau of crop estimates, has shown a decline over July estimates of about 300,000 bushels. This decrease has been throughout the east and north, New York, Michigan, Maryland, New Jersey, West Virginia and Delaware, all declining a few points over July estimates. On the other hand the Georgia peach crop has held up to earlier estimates, while the Texas and Arkansas crops, due to excellent growing conditions, have shown an increase, the Texas crop over-running earlier estimates by more than 300 cars. The Elberta crop in Colorado and the Northwest promises to be heavy and the movement will be particularly heavy the last ten days in August.

The United States crop is now estimated at 29,784,000 bushels as compared with 20,597,000 bushels last year, or a 45 per cent increase over the crop of 1918.

Western States

The quality of the peach crop generally throughout the West is excellent and the crop promises to be the largest and best in the history of the Western States.

California

The very large crop in California is the feature of the peach situation for the entire country. Fresno, Kings and Tulare Counties, in which about 40 per cent of the peach crop of California is produced, have bumper crops. Some damage is reported in the San Joaquin Valley from a shortage of irrigation water, but the state crop will run fully 100 per cent. Sutter County will probably have 25 per cent more cling peaches than last year. The state as a whole is now estimated at approximately 16,000,000 bushels as compared with 11,663,000 bushels in 1918. Although the season is about ten days late as compared with last year, the shipments to date are 1000 cars heavier than last year. Ordinarily about ten per cent of the California crop is shipped fresh and the remainder is canned or dried. Fresh peach shipments may exceed 4000 cars. The crest of the California peach movement is now on. California has prospects for the largest peach crop in the history of the state.

Colorado

The Palisade district in Mesa County promises to bear out earlier estimates of fully 1000 cars. The crop consists principally of Elbertas and will move in bushel baskets and twenty pound boxes. The crest of the movement is expected between August 20 and 25. Quality and size are excellent. Delta County suffered from frost and will ship about 350 cars.

Washington

Various estimates are received from the Yakima Valley, which is the principal peach producing region in the state of Washington. It seems probable that the entire valley may ship 2300 cars as compared with about 600 cars in 1918. The bulk of the movement will be the last ten days in August. The size and quality of the fruit is reported very good. The Asotin section has a 100 per cent crop, but the quantity is small.

Utah

Peach conditions throughout the state are generally reported as favorable, although some injury has resulted from drouth. The Brigham City district in Boxelder County will ship about 350 cars, while the Utah or Provo district is now estimated at about 450 cars, consisting principally of Elbertas. The state as a whole will ship from 1200 to 1300 cars outside of the state as compared with 1000 cars in 1918. The heavy Elberta movement promises to be the first ten days of September.

Idaho

The Council district of Idaho is estimated at 40 cars and the Emmet district at about 125 cars. Scattered plantings are found elsewhere in the state, but the crop is unimportant commercially.

New Mexico

The Pecos Valley of New Mexico now promises about 150 cars, 100 of which will be shipped locally or sold to canners. The crop is principally Elbertas. The San Juan district is a complete failure.

Our Deciduous Fruit Crop

"A bumper crop of deciduous fruits is now assured in California," is the statement of Field Agent E. E. Kaufman, bureau of crop estimates in the report issued showing condition of fruit crops on August 1.

A prolonged period of high temperatures during the past month was somewhat aggravated by a shortage of irrigation water in a few localities but barring unfavorable weather during harvest and drying time the crop can generally be considered safe. The citrus outlook is not so promising.

Peaches

Shortage of irrigation water in the San Joaquin Valley was productive of a drop of two points in the condition of the peach crop during the past month—98 on August 1 in comparison with 100 one month ago—indicating a total production of about 435,000 tons compared with 290,000 tons last year.

Prunes

In the Sacramento Valley unirrigated prune orchards suffered a heavy "drop" during July with a consequent decrease in condition. Santa Clara Valley on the other hand has prospects of the largest crop ever produced. For the state as a whole prunes are a 100 per cent crop and a minimum production of 120,000 tons is now indicated compared to about 45,000 tons last year and 109,000 tons in 1917.

Apricots

Late varieties of apricots made a better crop than expected particularly in the Santa Clara Valley and the condition on August 1 was 90 per cent of a normal compared to 88 on July 1 and 80 August 1, 1918. Conditions now indicate a total production of 165,000 tons on a green basis.

Pears

A slight improvement is noted in the condition of pears and the forecast of 110,000 tons made as of July 1 may be increased a few thousand tons for the final estimate. Shipments outside the state to August 5 were 2382 cars compared to 167 cars to same date last year.

Apples

No change in the condition of the apple crop for the state during the past month. Indicated production is for a total crop of 7,591,000 bushels or 36 per cent greater than last year.

Olives

The olive crop is very spotted, conditions varying from 30 per cent of a normal in Tulare County to 85 in San Bernardino. Butte which normally produces about 14 per cent of the state's crop reports a condition of 55. In San Diego the condition is 50; Riverside 50 and Los Angeles 70. For the entire state 65 per cent of a normal crop is indicated.

Walnuts

The condition of the walnut crop is now reported 108 per cent of a normal indicating 25,000 tons of walnuts this year compared to 20,115 tons in 1918

Almonds

Some improvement is noted in the almond crop since July 1 which with the new bearing acreage will bring the total production to at least 30 per cent more than last year when the crop was estimated at 5100 tons

Grapes

The wine grape crop is still 100 per cent of normal. In the opinion of crop reporters the prolonged period of high temperatures during July caused slight damage to raisin and table grapes Production however will not be materially affected from the present outlook and a 200,000 ton raisin crop is still probable.

FALL BLIGHT OF TOMATOES

There is practically no salvation for a tomato plant once it is stricken with summer blight As soon as it begins to show the wilt it is already choked to death by the condition of the roots. As we have repeatedly said, practically the only step to take is to destroy by burning so as to prevent as far as possible any spread of the disease. However, fall blight is another proposition. It is a fungus and its entrance into the tissues of the plant may be prevented by spraying with Bordeaux soap mixture.

A small knapsack compressed air sprayer is used in this work. Such sprayers are light, easy to operate, and produce a fine misty spray. Several different kinds, varying somewhat in shape and construction, but built on the compressed air principle, are now offered for sale.

The spray formula used is 5-5-3-50 Bordeaux soap mixture, composed of five pounds copper sulphate, five pounds stone lime, three pounds resin fish oil soap, and 50 gallons of water.

To reduce the work of preparing spray mixtures the folowing stock solutions were made: Five pounds of copper sulphate (bluestone) was dissolved by suspending it in a wooden vessel containing five gallons of water. Copper sulphate corrodes iron and tin. Five pounds of stone lime (quick lime) was slaked in another vessel by slowly adding water at first and later increasing the volume to five gallons. Three pounds of resin fish oil soap was diluted in a third vessel by stirring it in hot water until thin and increasing the volume to five gallons by adding water of ordinary temperature.

These stock solutions keep indefinitely if not mixed or weakened by rain, but the lime should be covered to prevent drying out and air-slaking. The level of the liquid when freshly made and after each spray period should be marked on each vessel, and water added when needed to restore loss by evaporation.

Ten gallons of spray mixture are prepared by taking one gallon of each freshly stirred stock solution and increasing it to three and one third gallons by adding water and by pouring together and stirring the three diluted solutions thus made. The resulting mixture is ready for use as soon as strained and should be used while fresh, as it deteriorates by standing.

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Exchange members may be supplied through the Fruit Growers' Supply Co.

TiziT TiziT

COMB HONEY

Farmers' Bulletin 1039 is one of the more recent publications of the department of agriculture. It touches upon commercial comb honey production. It may be had by writing to the department of agriculture, Washington, D. C.

Comb honey production for the general market should be attempted only in locations furnishing a rapid flow of white honey.

Hives, sections, and supers should be accurately made and the parts should be interchangeable. All apparatus should be prepared well in advance of its use.

To produce a large number of workers for the spring flow, each colony during the late summer and autumn should have a good queen, an abundance of food, and sufficient room both for the stored food and for brood rearing, that the bees constituting the winter colony may be reared. Ample protection against cold and wind, with enough winter stores of good quality to last until spring, is necessary. In spring an abundance of stores, room, and protection is necessary for heavy brood rearing, to replace winter losses and produce the excess in population necessary for best results during the honey flow.

Great skill is required during the honey flow to prevent a division of the working force of the colonies by swarming and also to prevent a subordination of the storing instinct because of the crowded population of the colonies.

Preventive and remedial measures for swarming permit the beekeeper to operate a series of apiaries in different locations without the necessity of an attendant in each during the swarming season.

The proper expansion and arrangement of room in the supers is an important factor in maintaining a dominance of the storing instinct.

After the honey is removed from the hive it should be prepared carefully for market by proper cleaning of the sections and especially by grading and packing in strict conformity with established grading rules.

THE USEFUL TOAD

The amount of food a toad may consume is remarkable. The writer has taken from a single stomach the remains of 77 myriapods, or thousand-legged worms; in another, 37 tent caterpillars were found; a third contained 65 gypsy moth caterpillars; a fourth, 55 army worms. F. H. Mosher once fed 30 full grown celery caterpillars to a toad in less than three hours, while Dr. C. F. Hodge has seen a toad eat 86 house flies at one sitting. Miss Ellen M. Foskett records feeding 90 rose bugs to another toad without satisfying its appetite.

Careful figures made by the writer some years ago showed that in three months' time a single toad might consume the enormous total of 10,080 insects.—A. H. Kirkland in Boys' Life.

SAVING DAYLIGHT

When Joshua of Bible fame
Old Israel's foes did slay
He stopped the sun on Gideon
Through a long summer day.
In vain the Amorites did plead,
"I'm saving time," he said.
But had those heathen lived today
They'd set their clocks ahead.

So saving daylight is a scheme
As ancient as the race.
Old Time has oft a laggard grown—
Let's hustle up his pace;
Let's pass a law to make night day;
Let's all quit work at noon.
Supper comes now at 3 p. m.
And breakfast follows soon.

The farmer and the soaring lark
Are now quite out of date;
The firefly lights the busy bee,
The ant's an hour late.
I used to toil from early dawn
'Till sunset skies were red—
Now when I rise I meet myself
Just coming into bed.
—S. H. French, Exchange.

The Ventura County Fair has set forward dates one week. It will now open on the 25th of September, closing on the 27th. The change was made in order to merge the County Fair with the welcome home celebration for returned soldiers.

THE H. C. SHAW CO.

STOCKTON, CALIF.

Make Our Booth Your Headquarters when at the State Fair

We are exclusive distributors for NORTHERN CALIFORNIA AND WESTERN NEVADA for the following lines:

CUT-A-WAY HARROW CO., Clark's Disc Harrow.

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BAIN WAGON CO., Wagons.

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EMERSON BRANTINGHAM IMPLEMENT CO., Osborn Mowers, Rakes, Binders, etc., and also Standard Mower, Rakes—Binders, etc.

THE SIMPLEX FARM DITCHER CO., Ditchers-Terracers.

R. M. WADE & CO., Pea & Bean Threshers.

RODERICK LEAN MFG. CO., Disc Spring-tooth and Spike-tooth Harrows.

APPLETON MFG. CO., Cornshellers, Huskers, etc.

QUEEN INCUBATOR CO., Incubators, Brooders, etc.

We are general agents and jobbers' distributors for the following:

SMITH MFG., CO.

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GALESBURG MFG. CO., Plow and Harrow Discs and Colters.

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CORRUGATED AND PLAIN TANKS

Big Type Poland-Chinas

that are strictly big type. Big type sires—big type dams produce for me real big type animals. Usually sold down close but frequently have an exceptionally good one for sale. It will pay to keep in touch with me.

Eugene Miner Lodi, Calif

Tractor Demonstration

The Traction Engine and Implement Dealers' Association of Southern California will endeavor to make this the most interesting from an educational standpoint of any tractor demonstration ever held in the past.

The demonstration this year will be held on the Rancho La Brea on the corner of Melrose and Crescent Avenues, from September 16 to 21 inclusive, at which time all the tractor and implement men will endeavor to show the rancher every kind of work that a tractor can be put to. The tractor industry today is one of the greatest industries in the world, and the man who is planning on going back to the soil as a business will profit greatly by attending this practical working demonstration, as he can get at this time all data he needs about the tractors and implements. Ranchers that already own tractors are always ready to spend from three to five days at these demonstrations, as they are very beneficial in improving their knowledge on power farming machinery.

The Killefer Manufacturing Company will show its Standard subsoiler, tractor chisels, orchard and field cultivators, automatic disc, and for the first time at any demonstration their automatic subsoiler.

The Samson Sales Company will have on exhibit the Samson Sieve Grip Model S25, their new model 30X. This will be the first appearance on the demonstration field. This model is equipped with Remy System of Ignition and Lights, Willard storage battery and electrically controlled governor.

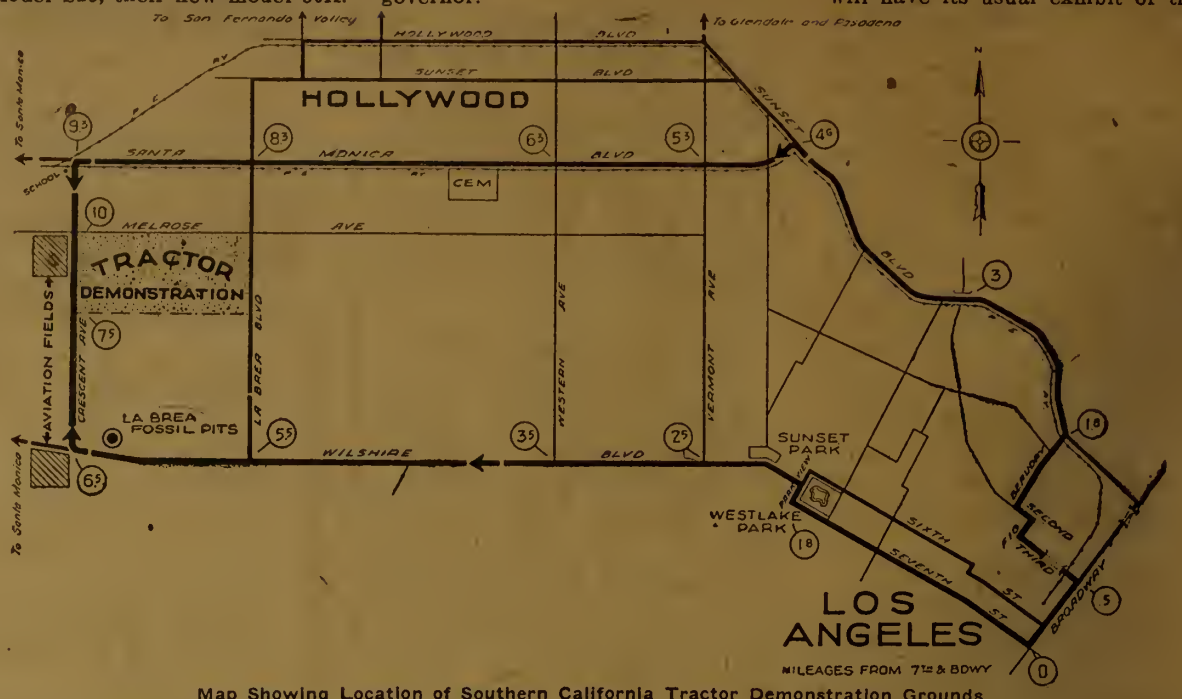
C. L. Best Gas Traction Company will show for the first time its new 60 horse power Tracklayer, also its small 25 horse power.

The Holt Manufacturing Company will have its usual exhibit of the 40-75 horse power, 22-45 horse power, with full line of plows and land levelers.

The Avery Company will show the following: 40-80 horse power, 18-36 horse power, 14-28 horse power, 8-16 six cylinder new model, six cylinder new model 5-10 horse power, new model cultivator and the Avery separator.

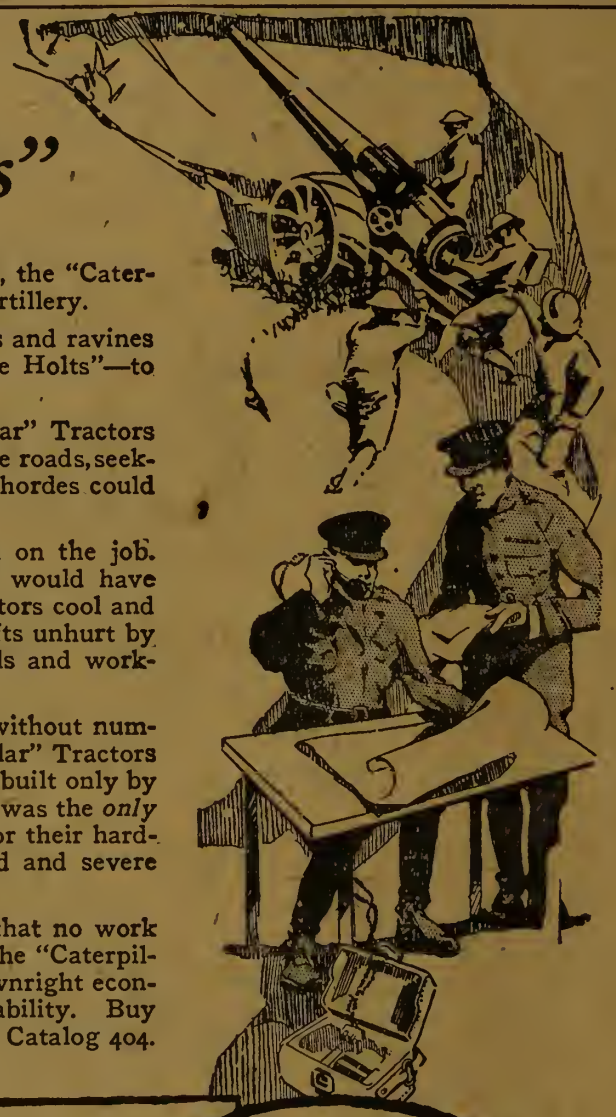
The visitors at this demonstration can witness working operations of hay baling, feed cutting, silo fillers, pumps, bean threshers, separators, harvesting machines and in fact every working condition of a tractor. There will also be an excellent exhibit of accessories such as spark plugs, magnetos, piston rings, carburetors, lubricating oils and trucks, and a great many other useful articles that are absolutely necessary to keep all farming machinery in operation.

The demonstration field can be reached by the Pacific Electric Railway on either the Gardner Junction or Sherman car line. There will be something to interest you from 8 A. M. to 5 P. M. at this demonstration, and one need not leave the field to get lunch as there will be an excellent restaurant on the field at city prices.



Map Showing Location of Southern California Tractor Demonstration Grounds
—Courtesy Automobile Club of Southern California.

"Send Up the Holts"



In the retreat from the Somme in 1918, the "Caterpillar" Tractors saved the British heavy artillery.

All along the line in the shelter of trees and ravines they were waiting the word "Send up the Holts"—to save the big guns that meant so much.

For 24 hours at a stretch the "Caterpillar" Tractors pulled 18-ton guns along almost impossible roads, seeking the new positions where the German hordes could be held.

And the "Caterpillar" Tractors stayed on the job. At a time when a breakdown or delay would have spelled disaster they kept going, with motors cool and efficient—with track-parts, gears and shafts unhurt by the terrific strain. Holt design, materials and workmanship had proved sound.

This performance was repeated times without number during the War. What the "Caterpillar" Tractors did is history. The "Caterpillar" Tractor built only by Holt, or under Holt contracts and patents, was the *only* tractor of track-type used by the Allies for their hardest war service—chosen after prolonged and severe tests.

This War record proves conclusively that no work on farm, road or forest is too severe for the "Caterpillar" Tractor to handle with ease, with downright economy of operation, and absolute dependability. Buy your "Caterpillar" Tractor now. Send for Catalog 404.

CATERPILLAR
Reg. U.S. Pat. Off.

The Holt Manufacturing Co. Inc.
STOCKTON California
PEORIA Illinois
LOS ANGELES California
PORTLAND Oregon
SPOKANE Washington
SAN FRANCISCO California

CAN OLIVES WITHOUT BRINE

Tests by the division of viticulture of the University of California extending over a year have shown that ripe pickled olives may be canned or bottled without brine.

As soon as the pickling process is finished the olives are placed in a three per cent brine for several days until they are well salted. They are then heated to about 180 degrees Fahrenheit in this brine and placed in cans or bottles without any liquid. The cans or bottles are then sealed and heated to 212 degrees for half an hour.

Olives treated in this way have kept perfectly for a year and were equal in every way to similar olives canned in liquid in the usual way. There was no shrinking, wrinkling, softening, nor change of color.

The absence of brine makes the handling of the olives by the consumer much pleasanter and more convenient. In shipping there would also be a considerable saving in freight. The saving in weight with cans (not counting packing cases) was found to be 31.5 per cent and with bottles 16.6 per cent.

MERCURY

Mercury is an unusual metal. It is not a solid, but a liquid, a liquid so heavy that iron will float upon it. If a gold ring or coin is dropped into mercury, the gold will become covered with a silvery coating. This coating is an amalgam, which is the name given to all similar alloys of mercury. The same thing would happen if copper or almost any other metal were placed in mercury.—Boys' Life

Tractor Plowing Has Its Problems

Plowing with tractors presents some problems that never bother the man who uses horse-drawn implements. It is necessary to lay out fields, so that a high-class job of plowing can be done over the entire area with the minimum use of a horse-drawn plow in starting and finishing the work, says Farmers' Bulletin 1045, recently published by the United States Department of Agriculture, which gives in detail some of the best methods for laying out land and plowing with tractors. The methods in general use are divided into two classes in the bulletin—those in which the plows are elevated and no plowing is done across the ends, and those in which the plows are left in the ground continuously. In most cases better plowing can be done when the plows are idle across the ends of the field, and for this reason the methods of this class are more popular, but many farmers prefer the other methods, as they eliminate waste of time and labor.

Plowmen using tractors wish to reduce to a minimum the time spent in running and in turning with plows out of the ground. While it is necessary to do some traveling while the plows are idle, care should be taken not to do too much of it, as it reduces the number of acres which can be plowed in a day, making the tractor that much less efficient. Short turns, however, are awkward for most tractors, and where such turns are necessary the operator often has more or less difficulty in getting the outfit in the correct position for starting into the new furrow at the right point. Some tractors turn more easily in one direction than others. and this should be taken into consideration in laying out the fields.

Advantages Summarized

The advantages of plowing by the methods in which the plows are idle across the ends of the field are that the short, awkward turns are eliminated, except in some cases at the beginnings and ends of the lands, and usually less space will be left at the corners to be plowed with horses. The advantages of the other methods are that little or no time is lost in traveling with the plows out of the ground, and that ordinarily the number of dead furrows and back furrows will be considerably less.

In using the first-named methods it is necessary to measure the lands in the center of the field accurately, leaving an equal area on all sides of the field in which to turn the outfit, and which can be plowed last by running the tractor completely around the field several times. If one end of the field is unfenced the outfit can be pulled out into a road or lane, or an adjoining field, for turning. It may be preferable to plow up to the fence on the two sides as the body of the field is being plowed, and leave the headland only across the end of the field which is fenced. The width of the headland will depend largely on the turning radius of the tractor. With easily handled outfits it is not necessary to leave more than 15 or 20 feet, but plenty of room should always be left, and for this reason headlands 50 feet or more in width are preferable to narrower ones.

Careful Plowing Saves Time

If the field is to be finished up in the best manner, with no irregular, unplowed strips between the land or at the edges, it is essential that care be taken to have the headland of the same width clear around the field, to have the distances measured exactly when starting new lands, and to have the first furrows as nearly straight as possible. A little extra time taken in measuring off the necessary distances and setting plenty of stakes for guidance will nearly always be more than returned in saving time at the finish. If the tractor pulls three or more plows, cutting a total width of three or more feet, some effort should be made to have the width of the headlands an exact multiple of the total width of the plow, so that the last strip across the field will exactly cut out the land or finish it to the fence. This will do away with the necessity of making a trip across the field, probably over the plowed ground to turn a narrow strip which has been left unplowed.

When methods are used in which the plow is left in the ground continuously the outfit is started in the center of the field. For the first three or four rounds the plows are lifted at the ends of the furrows, and then they are left in the ground when the turns are made. The outfit is then run around the field until the entire area has been plowed, and if the field has been measured correctly before the tractor started, the last round will plow the land next to the fence on all sides.

THE SPARE INNER TUBE
By M. E. Bemis

One of the annoying things for the automobile owner is to find that when he needs it most the spare inner tube has become chafed and must be patched before it can be used or is perhaps hopelessly ruined. Like most things, there is a right way and a wrong way to pack away an inner tube, and a little care together with a knowledge of the right way may save the price of a tube and the incident annoyance of finding a perfectly good tube spoiled.

First remove the "valve inside," then holding the tube so that the valve stem points downward, roll the tube so that the air is forced out; put back the "valve inside" while the tube is still tightly rolled up; hold the tube on the two hands like a skein of yarn, with the valve stem on the outside of the doubled tube and pointing up; fold the two ends towards the valve stem. This makes the folded tube four ply. Now bring the two ends of the folded tube together with the valve stem folded between the four ply folds. A rubber band or string makes the tube ready to be wrapped in cloth or in a tube bag and will make it much safer to carry than when folded with air in it.

Get Bigger Money Harvests Easier

You farmers can save *all* the grain you raise—with an E-B Osborne Grain Binder.

Cutter bar can be set close to the ground. Reel can be adjusted to push down grain onto platform. Platform canvas runs one-seventh faster than elevator, straightening grain before elevating. Seventh roller avoids grain dropping through onto main wheel and helps prevent clogging. Drop leaves, grain springs and three discharge arms prevent stringing grain. Get all the interesting harvesting facts about the

E-B Osborne Grain Binder

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The uniting of E-B with Osborne means much to you in harvesting your crops. The Emerson-Brantingham Implement Company represents an organization of 4,000 men and 7 factories, and 67 years' experience in building fine farm machinery. Combined with this is the Osborne reputation for making harvesting machinery of all kinds.

H. C. Shaw Company
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THE E-B LINE

When writing advertisers, mention The Cultivator.

Cletrac
TANK-TYPE TRACTOR
(Formerly known as the Cleveland Tractor)

Plows on the heels of the Harvest

The actual experience of farmers everywhere proves conclusively that wheat yields are increased from 5 to 8 bushels an acre by plowing immediately after harvest.

But this is usually the hottest and busiest season of the year when men and horses tire easily.

With the Cletrac Tank-Type Tractor you can actually plow *right on the heels of the harvest*—and do it so quickly that you will not interfere with cultivating, haying or other routine work.

Through the most extreme heat the Cletrac contentedly and steadily does a job that would kill a team. It will work all day and all night if necessary. You can drive it unmercifully—and in return get an *increased* yield of *better* quality, that will often pay the whole cost of the tractor in one season.

Prompt plowing after harvest enables your soil to soak up and store away moisture that would otherwise be lost.

But remember the Cletrac does far *more* than merely plow. That *is only the beginning of its work*. Its distinctive tank-type construction enables it to go almost anywhere—particularly over soft plowed ground or moist or sandy soil where the average tractor would flounder or "dig itself in". All the power of the Cletrac is used *to pull the implement*. And because of its 600 square inches of traction surface it doesn't leave two packed down tracks of earth behind it.

The Cletrac is extremely economical to operate, using kerosene, distillate or gasoline. Most owners are using kerosene or distillate.

Send for our booklet "Selecting Your Tractor". It will be a real help in solving many of your most difficult problems. And order early as we cannot promise prompt delivery later on.

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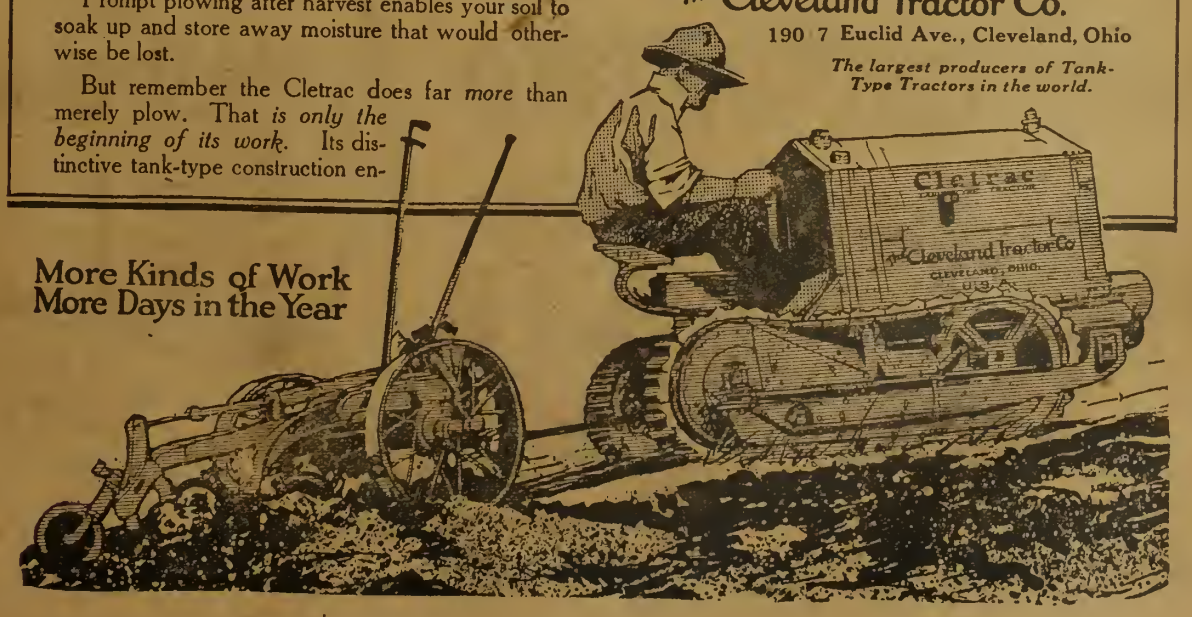
The largest producers of Tank-Type Tractors in the world.



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More Days in the Year

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Riverside, October 7 to 11. 1919

The Seventh Annual Meeting of the Great Agricultural and Livestock Exhibition of Southern California.

Greatest Livestock Show Ever Held in the Southwest. Agricultural and Horticultural Exhibits Unsurpassed.

Racing Program Unequalled by Past Meets on this Fast Track. Four Days Racing.

Greatest Goat Exhibit Ever Held. An Unusually Large Showing of Poultry and Rabbits Promised.

Special Railroad rates to exhibitors. Loading facilities at Fair Grounds. Liberal premium offers and careful attention to all exhibitors.

With ample time between our dates and those of other principal California Fairs exhibitors will have ample time to move and rest stock.

Write for Premium List.

W. W. Van Pelt, Secretary, Riverside, Cal.

Airplane Flights Horse Races

Antelope Valley Fair
Lancaster, Cal.
Sept. 17-20, 1919

Live Stock--Agriculture--Horticulture

Intending Exhibitors Write to F. B. Rutledge, Sec'y.-Treas. Lancaster, for Information and Entry Blanks

See the Big Alfalfa Palace

Concession Rates Given on Application

Producing Perfect Milk in the Milk Contests

By D. O. Brant, Secretary California Guernsey Club

AT the Liberty Fair held in Los Angeles the Elliott-Brant Rancho produced what the judge considered "perfect" milk and cream and scored both products higher than any milk or cream had ever been scored before.

Just what was responsible for this perfect score and how it was attained is of interest to any milk producer who aspires to produce winning milk, either at the shows or on the market—the qualities to win at the show or on the market shall be, but as yet are not, the same unfortunately.

This statement may surprise some people, but, after a casual glance it is quite obviously apparent to even the layman. The point is that the score card, by which the milk judges have to select "the best" sample of milk from among those that are set before them, is out of date and is not capable of measuring "the best" milk as people understand it or desire their milk to be. This accounts in a large measure for the surprise people manifest when they read in the paper that the "dish water" they have been getting from their milkman has been scored about 95 per cent perfect out of a possible 98, which is the basis milk judges have used as perfect, which in other things is either 100 per cent or 1000 per cent. On the 100 per cent basis their milk is about 97 per cent perfect, and they know it is not so in their own minds. They can well remember the time when they were on the farm and they got milk from their old Jersey cow "as rich as cream" and the cream "as yellow as butter." That was "perfect" milk and cream to them; it still is their standard of perfection and they think either the authorities must never have been on the farm, or else they themselves, or the authorities, one, don't know what they are talking about. Perhaps it is some of both. I think so.

A full discussion of the milk score card is too long to be of interest to any except those especially interested in this important subject, but the gist of the thing is that the authorities are interested most in "clean" milk, paying slight attention to food value, etc., and so they express their desires on their score card by greatly exaggerating the cleanliness point of view, giving at present over one-half of the score used to cleanliness and about one-fifth to food value. Over one-third they give to measuring bacteria. While bacteria have no place or business in milk they allow your milk a perfect score if it has half a million in a quart bottle, which is not right. Perfect for bacteria should only be allowed when there are none in your bottle. When there is one your milk is contaminated, and certainly contaminated milk should not receive perfect. But even though your milk has many bacteria in it, are they the most important item to be considered? Has not their importance been overrated on the score card? It seems so when the same authorities encourage us to drink milk that contains millions on millions of bacteria, which they do when they tell us to drink buttermilk.

Mr. Authority, while he tells us butter fat is the most essential food on earth, absolutely necessary for all growth either in the infant or the adult, only allows this item ten per cent on his score card, and he cares not whether it is white, blue or yellow in color. He ignores its value further by giving a perfect score for the amount of butter fat in "average" milk, or four per cent. If you have less you get docked, but if you have more of this vital food do you get more? Nay, nay. But surely this chalky white milk, with the bluish tinge beneath, containing four per cent fat, does not score so much as this rich, yellow five and one-half per cent milk that looks like cream? Oh yes it does, probably more, because it may have 100 less bacteria. Yet who but an authority would select the white milk for his lunch?

On the other hand we have Mr. Consumer, Mr. Common People and family. They don't know anything about milk, or what's good for them, but what they are interested in is that old farm milk "as rich as cream," and the cream "as yellow as butter."

They don't understand this bacteria business anyway and never will. They'll take the authorities word for that, they want as few of them as they can get. What they want is that rich yellow milk with cream half way down the bottle so they can pour off the top for their coffee and berries and still have a real drink left for the baby. They are rather used to it but they would like it if those little green specks, the sediment, did not come down the sides of their glass with the last few drops of milk. They remind them of the barnyard and their absence is their idea of cleanliness, regardless of bacteria. They want rich, yellow milk that is clean, not clean milk that is thin and blue. They know, in their minds, the partly cooked and sterilized "distilled water" their milkman leaves them "ain't" 97 per cent perfect to them, regardless of what Mr. Authority says, and they are willing to show their choice by paying more for the yellow stuff if they can get it.

If Mr. Common People had a say he'd probably shock Mr. Authority by reversing the situation and give food value over half the score, half of what was left to good taste and what remained to bacteria and cleanliness. But he has not a say, so what he would say does not matter, except that, possibly, half way between what he would do and what Mr. Authority does is what should be on the score card for milk.

To succeed commercially the dairyman of the future will have to produce that "rich, yellow" kind of milk. At present he can "get by" without it because there isn't enough milk of any kind to fulfill the needs of the people, but that condition will, let us hope, soon pass by, and then those that have had foresight will persist, while those that are "getting by" now will perish. Those that have had foresight will have for sale the kind of milk people want and are glad to pay more for—those that have that kind now do not have to wait to reap their harvest—they never have a surplus, they get more for their milk and they can take the other fellow's business any time they can handle it. What will become of the other fellow, the thin, blue, three per cent fellow, when they are able to take over his business? In looking forward, as every man should, the dairyman should aim to arrive at the place where he is in a position to produce that "rich yellow" kind of milk just before the "thin blue" fellow passes out. It takes time to arrive at the point where the "rich yellow" is produced, but it comes more quickly than one thinks if he does not delay in his start. His herd of the future, the "rich yellow" herd, from the use of a pure bred bull of the breed that produces that "rich yellow" milk in the greatest degree will soon be his.

But why, if the richness and yellowness didn't count did the milk from Elliott-Brant Rancho receive the perfect score? The truth is that they kept the bacteria out by having everything perfectly sterilized and using the small topped pail just as the authorities tell us all to. They got rid of even the tiniest speck of sediment, which is the most difficult part of the work, by straining through layers of cotton between cheese cloth, again, just as we all are told to do, so that was perfect. Then the milk contained the "perfect" quality of fat with a per cent and a half to spare, and it was rich and yellow. It had a distinct nutty flavor, and while the score card didn't say anything about it and perhaps the judge didn't realize it, nevertheless he was human and he knew that that rich yellow milk pleased him more than the other "perfect" samples. If they were "perfect," then this must be "super perfect" and acting on this hunch he gave it an extra half point above the then usually perfect 98 per cent.

The answer to winning the milk contest at both the shows and in the trade is to own that "rich-yellow" kind of cows. They are scarce, but the bulls can be obtained reasonably and from them shortly springs the "super-perfect" herd. Need I tell the breed?

Live Stock News Notes

SALE CALENDAR

Ayrshire Cattle

September 16, Preston School of Industry, Sacramento.

Holstein Cattle

September 18, Henderson Company and Bonita Stock Farm, Stockton.
October 8, Agee Brothers, Brawley.

Shorthorns

October 16, Dr. H. M. Elberg, Woodland

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association. San Francisco.

Poland-China Swine

September 17, John M. Bernstein and W. L. Haag & Son, Hanford.
September 19. San Joaquin County Poland-China Breeders' Association, Lodi.
September 30, Dimmick Brothers and DeRaad, Hanford.
October 4. Marsh & McCracken, Modesto
October 7. Bassett, Ross and Crawshaw. Hanford.
October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.
October 18, Trewhitt, Vaughan and Nehis, Hanford.
October 21, Tulare County Poland-China Breeders' Association, Tulare.

Messrs. W. A. Young and J. H. Lehman of Lodi have united in the purchase of a fine young Poland-China boar which it is expected will be a factor in production of gold medal winners.

Every constructive breeder has in mind certain types of animals he desires to produce. Walter C. Ficklin of Fresno, breeder of Poland-Chinas, says that with this in mind he has mated Choice Queen, a daughter of Wonder's King, the highest priced sow ever sold in California at public sale, with Madera Model, a son of the grand champion sow at the P. P. I. E. Also Busters' Supreme Wonder, a daughter of California Jumbo Buster, to The Yankee Jr. The Yankee Jr. is a son of Williams Bros. famous boar, The Yankee, and is heading the herd of the popular Poland-China breeder John Bernstein. Mr. Ficklin believes that the intermingling of this blood is bound to produce the right type of Poland-Chinas.

A recent addition to one of the leading herds of Poland-Chinas of the state, and one that will be of interest to all Poland-China breeders, is the new herd boar, Some Price, recently purchased by J. A. Crawshaw, Hanford. Mr. Crawshaw states that this boar, Some Price, is "some boar," whose dam is Orange Lady 2nd, and by Great Price, a half brother to Black Price, world's grand champion Poland-China boar. He is perfectly marked, being black with six white points, strictly big type and is from a litter of eleven. Some Price together with Kings' County Buster and California Gerstdale, a son of Gerstdale Jones, comprise the sires now on the Crawshaw raanch.

Probably no ranch is better adapted nor has better facilities for producing high class Berkshires than Mills Berkshire Farm, Hamilton City. On this farm is maintained a herd of 150 brood sows carefully selected as to type, size, individuality and prolificacy. The matings are being made by Mr. Ramsey, manager of the swine department, with the view of producing pork making Berkshires. One of the younger sires is a junior yearling by a son of Laurel Champion. He has remarkable depth and length, as strong a back as is ever found, stands on four good feet and if able to impart to his offspring his many good qualities, he is destined to become one of the great boars of the breed.

J F. Lehman, who breeds Poland-Chinas on his ranch near Lodi, states that he invites comparison of his herd with that of any to be found, and in making sales is willing to abide by the judgment of the purchaser. He has consigned five spring boars to the sale to be held by the San Joaquin Poland-China Breeders Association in Lodi, September 19, and states that they are the kind that will make real herd headers. He will show at the State Fair.

Sherwood Beckman, who has active charge of the large herd of Poland-Chinas on Lakeside Farm, Lodi, writes enthusiastically regarding the many additions of big type sows recently brought to the herd. It was at a long price that be was able to secure from L. H. Glover, a junior yearling gilt bred to Liberty Bond, but be considers that the litter by such a famous sire will more than return his initial outlay. The Lakeside Stock Farm will be one of the large exhibitors of Poland-Chinas at the shows this fall and will include its two herd boars, Matchless Big Bob and Lakeside Defender.

Eugene Miller will sell in the Lodi sale, September 19, a few of his big type Poland-Chinas. Mr. Miner bas reserved these especially for tbis sale, as he desires to assist in making his county, San Joaquin, a Poland-Cbina center and he believes that public sales will accomplish this more rapidly tban it could be done in any other way.

W. A. Young, one of the state's oldest Poland-China breeders, invites all interested in good hogs to inspect the get of his boar Golden State King, which he believes is the greatest breeding boar on the Pacific Coast. Mr. Young is negotiating for one of the best young boars he can find, and he will come from one of the best leading herds.

In the Duroc-Jersey show herd of W. V. Bennett, Nord, that will be out this season, will be found an aged sow, two junior yearling sows, her daughters, and four futurity pigs, also her produce. It is rare that we see practically an entire show herd made up from the produce of one dam. Ordinarily we would expect the dam to be past her show days, but she is in good condition to go on any circuit and make an interesting fight for premier honors.

To select one line of breeding and stick to it has been the policy of George Kounias, Modesto, breeder of Holsteins and Berkshires. Mr. Kounias has two farms, one of which is devoted to the breeding of Holsteins and the other to Berkshires. On the dairy farm he has recently completed a large barn with capacity for 100 cows, and a building for testing. His senior sire is the grand champion bull King Korndyke Hengerveld Ormsby 7th, and the junior sire is King Korndyke Aaggie Fayne whose dam, Finderne Soldene Fayne, produced 33.28 pounds of butter in seven days from 597 pounds of milk. In addition to the cows and heifers on test every female will be placed on test just as fast as she freshens. Due to the lack of housing facilities the herd of Berkshires was considerably reduced the past year. Just as soon as the new farrowing house is completed, along with a number of "A" shaped houses in the alfalfa pasture, the Berkshire herd will be considerably increased and pushed to the limit.

One of the interesting features of the Duroc-Jersey farm of F. D. Burr, Orland, is the concrete ditch through which the Durocs must pass in going from their feeding lots to the alfalfa pasture. The ditch is kept clean and sanitary by flushing every other day. Shade trees planted along the banks will in time provide ample shade during the hot months. Early in the year Mr. Burr began assembling this herd, which now numbers some 40 sows, two herd boars and 250 spring pigs. Mr. Burr intends purchasing 10 or a dozen as good sows as possible to buy. Mr. Burr also states that he has decided to sell no animal until it has been sufficiently developed to determine whether or not it has the quality necessary for a breeding animal.

R. J. Yates, enthusiastic Poland-China breeder of Orland, has instilled some of his enthusiasm into the farmers of his vicinity with the result that a number of them have gone in for Poland-Chinas. Tbe Glenn County Poland-China Breeders Association has been organized and plans laid for holding a public sale early next year. The association now has 25 members and some 50 head of Poland-Chinas have been secured for the sale. Mr. Yates is deserving of much credit for his efforts in establishing Poland-Chinas in his county.

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San Francisco, Calif.

Stirling Spotswood Smith is establishing a first class herd of Duroc-Jersey swine at La Mesa, San Diego County.

Ralph W. Mitchell of San Diego has purchased a high class junior boar sired by the noted Great Model for service in his herd of Durocs. Mr. Mitchell is soon to locate permanently in the Imperial Valley country.

October 24 has been designated as public sale day at the Los Angeles Livestock Show for the California Holstein Breeders' Association, 50 head to be catalogued for the event.

The Duroc breeders of Los Angeles County have arranged for a meeting to be held at Van Nuys on Wednesday evening, September 17, for the purpose of organizing a strong local association. Dr. Michael Creamer, owner of Ireland Ranch, Owensmouth, is a leading spirit in this enterpise.

An exhibit of Polled Herefords from the J. D. Brunton herd at Aspen, Colorado, will be a unique feature at the Los Angeles Live Stock Show in October. The well known herdsman Kenelm Godfrey, recently returned from Scotland, will have this exhibit in charge.

A. M. Bibens, Modesto, has just sold two young Holstein bulls to come to Los Angeles County. One of them goes to the Los Angeles Creamery Company herd, the other to the Crescent Creamery Company herd.

J. C. Craig reports the recent purchase for his Owensmouth ranch of a 16 months daughter of Great Wonder I Am, noted as the largest boar of the Duroc-Jersey breed. This fine young sow is mated to Pathfinder's Likeness for an October litter. Mr. Craig has also placed an order for one of the best spring boars to be found in the Middle West. Another great young brood sow is likewise expected at an early day at a price close to four figures.

Out at Ireland Ranch, Owensmouth, Dr. Michael Creamer, proprietor, one of the good sales of the season is just now reported. Four fall yearling gilts are sold to T. P. Tupman, Bakersfield, at $150 each. These young sows are daughters of the grand champion boar Cherry Volunteer 2d, and they are bred for September litters to Ireland's Joe Orion. Ireland Ranch claims January 31 as red-letter public sale day. The junior yearling champion sow at Liberty Fair is reserved as "opening gun" for the day's doings.

The Elliott-Brant Rancho Guernseys at Owensmouth are to furnish one of the strong show herds at the big fairs this year. About 20 head of show cattle have been groomed for the occasion, so that all the leading classes are to be well filled. D. E. Simmons, who is the efficient herdsman here, was instrumental in laying the splendid foundation for these May Rose Guernseys about five years ago. The herd today numbers 175 head, with the great four year old sire Brookmead's White Face as first sire in service. No less than 40 of his get are in the herd today. He traces directly to the noted Imp. King of the May and Dolly Dimple, two of the greatest names in Guernseydom.

In the show herd of H. D. McCune, breeder of Poland-Chinas, Lemoore, will be seen the senior herd boar, Kings' Massive Orange. In this boar Mr. McCune believes he has a sire of more than ordinary ability, as his pigs are uniformly good and are in strong demand. The Poland-China business on the McCune farm is carried on rather extensively, as both his son and daughter are in the business and animals from all three herds will be seen at the fall shows.

Cross Bros. of Merced have for some time been gathering a herd of big type Poland-Chinas. They have been liberal buyers at a number of sales and have imported a number from the East, including a son of Golden Gate, a boar that did so much in the herd of A. S. Severe. They are at the present time negotiating for a son of one of America's leading sires and will this fall add a number of good sows to their present herd. They have made a few entries of young animals at the State Fair.

W. L. Haag & Son, Hanford, announce the purchase of a Grand Master sow from the herd of L. H. Glover, Grandview, Missouri, and bred for early September farrow to the sensational boar Liberator. In the show herd they will have out this fall is Young Jumbo, by Jumbo Bob, by Long Jumbo, the sire of the $18,000 Mabels Jumbo.

W. F. Sanderock, who a few years ago began establishing a herd of Berkshires on Natomario Rancho near Sacramento, takes considerable pride in the results of his efforts. Baron Duke 301st, grand champion boar at the 1917 National Swine show, and Rincon's Rival 2nd, grand champion boar at Salem, Oregon, the same year, are two of his herd boars. Numbered among the matrons maintained on the ranch will be found Princess Leader, a daughter of the grand champion sow of the world, Riverby Princess, and sired by Grand Leader 2nd, the grand champion boar of the world; also Riverby Princess 2nd and 3rd, two sisters of Riverby Princess and a number of others of equal caliber. Natomario Rancho will be represented at the fall shows by a herd of 26. Few collections of the breed can boast of Berkshires combining so high a degree of quality, type and showing records as will be found in this herd.

One who can always be depended upon to uphold the standard of his chosen breed is A. B. Humphrey of Escalon, one of America's most constructive breeders of Berkshires. The show herd this year under the management of Charley Maurer will consist of 21 head, among these being two senior boar pigs considered by Mr. Maurer the equay of anything ever bred at Escalon. Mr. Humphrey will also make a showing of 15 Guernseys.

H. C. Witherow, manager of Greenwood Farms, Live Oak, states that included in his show herd of Duroc-Jerseys this year is the junior yearling boar Johnson's Defender Jr. that is "making them all talk." That he will be well up in the money is the opinion of a number of breeders who have seen him. Greenwood Farm is making rapid progress in breeding the type of Durocs now in demand.

Nate Hauck of Alton, one of the pioneer breeders of big type Poland-Chinas, writes that he will be unable to attend the state fair this year, much as he would like to, as he looks forward to this event as a place to renew acquaintance with old friends and make a few new ones. Mr. Hauck is using as a herd boar Cantrell's Ideal by Big Joe and is mating him with a number of good daughters of Long Model, the sire of Model Fellow.

USEFUL FACTS

Doubling the diameter of a pipe increases its capacity four times.

One ton of coal is equivalent to two cords of wood for steam purposes.

A gallon of water (United States standard) weighs eight ond one-half pounds and contains 231 cubic inches.

A cubic foot of water contains seven and one-half gallons, or 1728 cubic inches, and weighs 62½ pounds.

Each nominal horse power of a boiler requires 30 to 35 pounds of water per hour.

To sharpen dull files lay them in dilute sulphuric acid until they are eaten deep enough.

A horsepower is equivalent to raising 33,000 pounds one foot per minute, or 550 pounds one foot per second.

The average consumption of coal for steam boilers is 12 pounds per hour for each square foot of grate surface.

A cable announces the death of Mr. John Cochrane, Nethercraig, Ayrshire, Scotland, one of Scotland's foremost Ayrshire breeders and judges and the pioneer exporter of the Ayrshire breed.

This little world of ours is not growing worse to the men and women who are doing their best to make it better.

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SPECIFICATIONS

Russell "Big Boss" Tractor

Rated Tractive Horse Power	20
Rated Belt Horse Power	40
Number of Vertical Cylinders	4
Cylinder Bore, inches	5½
Piston Stroke, inches	7
Motor Speed	825
Plowing Speed—Miles per hour	2.4
High Speed—Miles per hour	3¾
Make of Clutch	Russell
Type of Clutch	Two Shoe
Type of Governor	Throttling
Number 14-inch Plows Recommended	4 to 5
Diameter of Belt Pulley	12½
Speed of Belt Pulley	840

RUSSELL "BIG BOSS" TRACTOR 20-40

Wheel Base	9 ft. 2¾ in.
Length over all	13 ft. 6 in.
Width over all	5 ft. 5⅛ in.
Height over all	7 ft. 6 in.
Number of Speeds Forward	2
Draw Bar Pull (low speed)	4,000 lbs.
Diameter of Rear Wheel	60 inches
Face of Rear Wheel	16 inches
Diameter of Front Wheel	32 inches
Face of front wheel	7 inches
Face of Belt Pulley	8 inches
Weight (rear wheels smooth)	7740 lbs.
Weight on Front Wheels	2730 lbs.
Weight on Rear Wheels	5210 lbs.

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SAN JOSE CALIFORNIA

A Great Show

By Gordon H. True
(Special Wire Service)

THE California International Live Stock show is dedicated to the proposition that the Pacific Coast is potentially America's great breeding ground for improved live stock and that the world should know it.

While San Francisco interests have made the show possible the idea has been developed as the result of a long felt demand of the stockmen of the state for a show of national character that would adequately represent the accomplishments and possibilities of live stock production of the West.

The show will be housed this year in the California Building at the exposition grounds. The building is being fitted up at considerable expense to accommodate an exhibit equal in proportions to the largest show we have seen on the Coast. Freight transportation is available direct to the building, and it is planned that passenger traffic shall be equally convenient.

The premium list provides for all classes of live stock. Announcement of entries has already been received from as far East as Kansas City and Illinois.

Stockmen of California will be glad of the assurance that the plans of the management look to the establishment of the show on a permanent basis. The Pacific Coast furnishes wonderful opportunities for the development of the pure bred live stock industry. It has not been a mere chance that horses from the stables of Stanford and Haggin and others, from the days of those pioneers down to the present, have been record breaking animals. It is not a matter of chance that such a large number of high milk and butter fat records have been made in dairy herds of the Pacific Coast. It has not been by chance that Coast cattle of the beef breeds shown in competition with those of the Middle West have won such high places. It is not a matter of chance that Coast bred hogs have won at the National Swine Show and have been sought by discriminating buyers. Nor does it just happen that breeding sheep from California are to go to South Africa, thus breaking into the Australian trade in the highest priced class of sheep produced.

It is to put the position of this Coast country properly before the world that this show is given.

Judges of national reputation have been secured for all classes, assuring exhibitors an intelligent adjudication of their entries and to the spectators a course of instruction as thorough and extended as the time they give to following the work of these men.

Hog Cleanliness the Key to Success

Says a writer in The Duroc Bulletin:

"Several live stock men were recently discussing the various phases of production of live stock, and the statement made by one of the party that hogs were the most cleanly in their habits of any live stock brought forth pitying, incredulous smiles from these of the party not directly in touch with swine raising. But even though it is hard not to associate the time worn expression, "dirty as a pig," with the hog itself, the fact remains that a hog will go out of his way to keep himself and his quarters clean. He thus invites the virtue of cleanliness in his handling that tends to make his development the most profitable of any live stock production.

"Cleanliness simply means thrift and economy in production. Freedom from internal and external parasites that not only keep the animal in a condition of low vitality and thrift, but also mean many extra mouths to feed, would add thousands of dollars to the annual income of swine growers the country over. There is no other animal that is subjected to the filth in living conditions that is so generally accorded to the hog—his production is in the rut of long established, but poorly founded precedent of method. and the time has come when the demand for the products of the hog makes it imperative that those methods be employed which mean that every pound of feed given to hogs will bring back full value in pork products, without the usual attendant 'side lines' of lice, worms and disease.

"There are very few swine ailments that cannot be avoided by the practice of sanitation and cleanliness. The swine pens and yards should be so situated that they will not present the continual appearance of a cranberry marsh, but should be well drained and on high and sloping land. The sleeping quarters should be dry, free from drafts and well ventilated. This is doubly important in the case of sows with young litters. Improper sleeping facilities will often cause pleura-pneumonia among the young pigs, which invariably proves fatal or, worse yet, causes stunting and consequent unprofitability.

"The houses should be cleaned out at least once each week and the pen and house thoroughly disinfected with a good coal tar disinfectant. And it should also be known that lime is one of the best disinfectants known, and a liberal use of this easily obtainable product is one of the best possible safeguards to the health of the hog herd. Its low cost is no criterion by which to judge its worth.

"The use of a plentiful amount of good dry bedding is a very inexpensive way of increasing the gains made. There is no feeder who can make a dissatisfied hog gain as desired, and there is no better way on earth to make a hog contented than to keep a good warm bed ever at his disposal. Good sanitary concrete wallows should be provided if possible in lieu of the long-tolerated, disease-breeding mud wallows. By keeping the water in the wallow sprinkled with a coal tar disinfectant or crude oil disease breeding germs may be kept out.

"External parasites such as lice and mange are a very effective means of keeping away profit on hog feeding. Not only do they draw their existence from the hog, but they lessen the animal's resistance to disease. The only positive and economical way to keep these pests under control is to keep them out of the herd. This may be done by dipping or spraying with any standard coal tar preparation, or by the use of rubbing post oilers. And the important thing is to keep the pests off the hogs—dont' let them get a start.

"By far the most costly of the elements that tend to make hog production less profitable is the prevalence of worms. All hogs have worms, some more, some less. It is a proper part of the cleanliness campaign to eliminate them by the use of some good worm expeller, formulas for which are ever available for any farmer. But it is much more effective, as well as a great deal cheaper, to keep ashes, charcoal and lime, together with some good condition powder or worm preventive, ever before the hogs in self feeders. The added growth and profit will repay the cost many times over.

"Go fifty-fifty with the hog. Be as clean with him as he is willing to be for himself. If you will give him opportunity he will prove that it will take less time and work to keep him clean than it will to keep clean any other farm animal."

At a sale of Jersey cattle held by Edmond Butler at Mt. Kisco, New York, 48 head of bulls and females sold for $158,800, an average of $3008, which is a new record for the breed. The imported bull, Sybil's Gamboge, sold for $65,000 to L. V. Walkley of Connecticut. This is the record price for a Jersey bull. Two females, Sybil's Oxford Dora and Fern's You'll Do Fontaine, sold for $6500 each.

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As Good as the West Affords

Introducing

Don Perfect 2d.

Don Perfect 2d.

our new herd buil. Don Perfect 2d was secured this year after a careful search for a herd bull of the highest order. He was sired by the great breeding bull and International champion, POINT COMFORT 14th, and comes to this herd with an established reputation as a sire of great ability, made in one of the best herds in Iowa. He has been used on nearly all our breeding herd and his calves will be in offer next year.

Herefords are Money Makers—Diamond G Herefords Represent the Best

Scrub bulls must go—replace them with sons of Don Perfect 2d.

Range men should investigate this herd when in need of bulls. Inspection of the herd is invited. Ranch seven miles North of Esparto.

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When Buying Herefords

Bear In Mind

That Bunting-Bred Herefords

1. HAVE SIZE—From the inception of this herd it has always been insisted that size is one of the most important factors from the standpoint of the practical cow man.

2. HAVE BONE—There is no place in the Bunting herd for light boned cattle. We know that Western men want bone and we have selected and bred our cattle for bone.

3. HAVE CONSTITUTION—Constitution has always been a marked quality in Herefords—no breed has more. No herd has more than the Bunting herd.

4. HAVE THE BEST OF BREEDING—The best in Herefords can only be produced from the best of breeding. That is why Bunting Herefords make good on the range and in the show rings.

5. ARE PROFITABLE—Because of the above points Bunting Herefords fulfill every requirement for profitable cattle and are therefore profitable — the kind you want.

YOU WILL BUY BUNTING HEREFORDS.

See Bunting Herefords at the Shows
(Look at or near the top)

John A. Bunting

Mission San Jose Calif.

Opportunities for the Small Hereford Breeder

By John A. Bunting, Secretary, Pacific Coast Hereford Breeders' Association

THE small breeder of today is in a position to do a great deal of real constructive breeding to better advantage than a large breeder.

Not long ago I met a man who, with a partner, had bought a farm of 700 acres. This man favored starting a purebred registered herd, but his partner objected for three reasons: First, that purebred cattle were not healthy and did not do well under adverse conditions; second, that a small herd of registered animals could not be run at a profit; and third, that it required a great deal of capital. The partner had a badly mistaken idea regarding registered cattle, especially Herefords.

Purebred cattle are really a lot healthier than scrubs, and the Hereford is far superior to all others in this respect. It is an undisputed fact that Herefords are the greatest rustlers and are the best in the feed lot, as the quotations almost always show Hereford feeders bringing from 50 cents to $2 per hundred more than any other breed, and they are also the most immune to tuberculosis.

A small herd of cattle can be run with a great deal of pleasure and profit. In a small herd a breeder can carry fewer cattle and more quality easier than in a larger herd. It is better to have an animal of quality than three or four of inferior type. A breeder should never loose track of the type that suits him most, and must never forget to keep quality with type first in his mind. A small breeder has a better chance to study each animal individually and find out its weak as well as strong points, and he may profit by his knowledge of each animal.

A breeder of a small herd can give his animals more time and care. This word care will no doubt bring a great deal of criticism. When I say care I mean plain common sense feeding and a little shelter. Calves most certainly should have a little extra feed and shelter during the winter, and the yearling as well. The older cattle can take care of themselves better than the younger. It is surprising what a little extra feed and shelter will do for an animal in bad weather. Last winter my cattle never had a look at a shed; they merely had a little volunteer hay given them every other day. To allow a calf to go without feed is one of the worst mistakes that can be made. It has been proven over and over again that the cheapest gain a person can put on an animal is when it is a calf. Not only that but a calf that is once stunted for the lack of feed will never regain the loss. These facts are easier for a small breeder to contend with than a larger one.

I have heard cattlemen say that they just let their cattle rustle for themselves and did not want cattle that had to be fed. The Hereford is the peer of all cattle when it comes to rustling, but a man who makes his cattle rustle all winter for feed would be surprised at the difference a little feed would make to these same animals. It never pays to let an animal fall back, as it takes twice the feed to get it back into shape that it would to carry it along in nice flesh.

Regarding capital to start a purebred herd of registered Herefords, it depends on how large a herd a person wants to start with and the quality he wants. A large herd of high class females and a real herd bull cost considerable, but if a man wants to get into registered Herefords on a small scale it is not very costly or hard, providing he has a little patience and is willing to take his time. It is surprising how a herd will grow with a start of two or three cows or cows with calves at their sides and rebred. It does not take a great number of cows to start with, providing the breeder is willing to let his herd grow from a small beginning.

I know of no better way to illustrate what I mean than to take two cows of my own for an example, what I paid for them, the number I have in 30 months and their value, and to state what I really could have afforded to pay for these cows: In 1917, when cattle were cheaper than today, I bought from the university farm a cow with a heifer calf at foot and rebred. Today the cow is worth at least $600. The calf that was at her side is a two year old and is worth $750 easily. The calf she was carrying is now a yearling worth $500 and she has a calf at side ready to wean, that is worth $300, and is safe in calf again. To sum up the profits from this cow, my original investment was $425, the plant today is one cow and three heifers valued at $2150.

The second cow with calf at foot and rebred was bought at auction for $590. This cow could not be bought at all today. We will call her value $750. The calf at foot is now a two year old heifer that I refused $1200 for when 17 months old, and I would not take $2500 for her today. Call her worth $1500. The calf the cow carried is now a yearling bull, and I refused $500 for him when eight months old. He is worth $1000. The cow has another bull calf at foot that is nearly ready to wean, that is a real calf, and we will say he is worth $750. The summary of this cow on an investment of $590 consists of one cow, one heifer, and two bulls, and their value today is around $4000. From two cows in May 1917, with calves at foot, I now have six cows and heifers and two bulls from an original investment of $1015 to $6150. Not bad for buying two cows about 30 months ago. This proves that they grow fast both in number and money.

A question often asked is: "How much can I afford to pay for a cow?" I believe that $1250 for the first cow and $2500 for the second would be a good buy. There are not many of us who cannot buy one or two good cows to start with. A breeder with a small but select herd can and will find it very interesting as well as profitable

In a small herd a breeder often thinks that he cannot afford to sell his surplus animals. This has been solved to a certain degree by the Pacific Coast Hereford Cattle Breeders' Association which was organized in 1916. This organization is to promote the interests of the Hereford breeders on the Pacific Coast by better acquaintance and a cordial relation among breeders of Hereford cattle, by the holding of public sales, and by promotion of exhibits at the state and county fairs and the live stock shows in general.

Any one who is a breeder of registered Herefords on the Pacific Coast is eligible to become a member of this association. This entitles him to place his surplus stock in the public sales which will be held as often as seems advisable. A small breeder of registered Herefords of quality, is sure of a winning proposition.

Los Angeles Live Stock Show

Premium lists for the Los Angeles Livestock Show, which will be held at Exposition Park in Los Angeles from October 18 to 26, are now ready for distribution at the office of secretary and manager C. R. Thomas at the Chamber of Commerce.

With an attractive program, ranging in variety from hundreds of exhibits of all breeds of livestock, poultry and pure-blooded animals to a harness and running race meet and a driving and saddle horse show, there will be nothing lacking to satisfy the interest and enthusiasm of the most exacting fancier or casual spectator

Prize money of $55,000 has been pledged, and of this sum $35,000 has been set aside for premiums and $20,000 for racing purses.

Judge Ed R. Smith, the veteran turf official, has been placed in charge of the sulky drivers and baugtails and he has announced a card of 12 top-notch harness events in addition to two daily running races. National Trotting Association rules will govern the trotters and pacers, with an

entrance fee of five per cent and five per cent from money winners. Running owners will be required to pay three per cent of purses, with events open to all. The $500 Live Stock Show derby will be a feature of the racing program. Entries for all events will close September 20.

In announcing the completion of the premium list Manager Thomas said:

"In presenting the premium list of the Second Annual Live Stock Show to be held in Southern California, the directors of this enterprise wish to assure exhibitors, breeders and the public that no effort has been spared to make the display one that shall reflect the best in every phase of the farm stock industry.

"While Southern California offers various advantages in breeding, it has not been until recent years that systematic, coordinated effort has been made to bring its herds to the high standards set by the older communities of the nation. It is believed that the second annual show will demonstrate conclusively that a wonderful beginning has been made toward bringing Southern California stock to the highest class to make it rank with the horticultural and agricultural products of this section.

"Our shows are cooperative enterprises designed to stimulate breeders to better efforts and to educate the people at large to the full meaning conveyed by the word "thoroughbred." We trust that exhibitors and the public will meet us in the same spirit and with equal enthusiasm in the cause."

Ample accommodations have been provided at Exposition Park for the largest herds and stables, and the location in itself is regarded as an important factor in assuring the success of the exhibit. It is in the heart of the city, with several five cent fare car lines tributary to it and spacious, paved automobile boulevards on all sides. Women and children visitors will encounter none of the hardships common with suburban locations as the modern, permanent pavilions at the park provide every comfort and opportunity for rest and recreation.

Every department and classification of beef cattle, dairy cattle, draft horses, saddle horses, mules, jacks, ponies, swine, sheep, goats, poultry, pigeons and rabbits will be judged, and substantial cash prizes have been provided for all. A special feature of interest to all breeders will be a public sale to be conducted by the California Holstein Breeders' Association at which from 40 to 60 head of the finest dairy animals in the West will be auctioned. The California Dairymens' Association will also maintain an elaborate exhibit at which milk foods and milk drinks will be distributed to the public and where everyone may obtain the most up to date information on dairy methods and intensive milk production.

The officers of the Live Stock Show are: E. W. Murphy, president; Clinton E. Miller, Walter P. Story, vice-presidents; C. R. Thomas, secretary and manager; Irving Hellman, treasurer.

The directors are: H. A. Jastro, L. M. Cole, F. E. Lewis, 2nd; Chas. H. Hill, Frank Simpson, W. I. Hollingsworth, H. B. Woodill, George M. Brown, E. W. Murphy, Clinton E. Miller, Fred H. Bixby, Harry Chandler, Frank Wiggins, Irving Hellman, Harold Braly, Walter P. Story, Walter M. Ross.

The members of the executive committee are: Fred H. Bixby, Frank Wiggins, H. A. Jastro, Harold Braly, Chas. H. Hill.

Why Herefords?

By J. I. Cazier, President, Pacific Coast Hereford Breeders' Association

TODAY, perhaps more than at any other time in history, there is the question, "Why?" Efficiency has been sought not only in the production of war munitions and equipment but in every line of industry. In the production of our foodstuffs efficiency has also become of utmost importance, and it is during this searching period for efficiency in food production that the Hereford has come into the greatest favor. It is not that it has just recently come to the top, but it is the critical comparison with other beef breeds that has brought the present recognition.

For efficiency in turning the vegetation of our vast open range into the finished product the Herefords have no equal. They have stood the test under the most trying conditions and have not been found wanting. There is no other sire so prolific as the Hereford and none other that will make the same improvement on our ordinary range cattle. The Hereford cow, though she has been criticized as a producer of milk, has that characteristic of bringing her calf through in better condition and at the same time retaining her own flesh to a higher degree than a cow of any other breed. This characteristic is very valuable in a range cow.

When we look into the purebred market we find Herefords at the very top. During the last year Herefords have set a world's record price for a single bull, a cow, a calf and a record sale average.

When we see breeding stock at the top we know there is a reason why. And when we review the fat stock market, the place where our beef breeds are finally appraised, we find Herefords again at the top. We find them at the top both as finished beef and as feeders.

This again brings the question, Why? And it is right here that the Herefords come to the front. The packers are not paying the premiums simply because the cattle have white faces but because by careful comparison the Hereford has proven to be the superior beef producing animal. Another factor very much in favor of the Hereford is its comparative freedom from disease. This also means dollars to the packer.

Figures taken from a bulletin of the bureau of animal industry credit Herefords with only 1.09 per cent of reactions to the tuberculin test, and other breeds run as high as 41.25 per cent of those tested. Quite a difference in favor of the Hereford.

When we come to the feeder we find that the Hereford not only matures early but conditions readily at any age. This gives it a foremost place in the production of baby beef.

Until late years our most productive lands were considered too valuable for cattle pasture. They were used for the growing of grains, fruits, etc. But since the improvement in the beef producing qualities of our modern Herefords they are proving a most valuable crop. We have found that they yield immediate returns as well as keep up the productiveness of the soil. And not only do they keep up the productiveness but there is no better or more profitable means of bringing up the fertility of our run down, or crop worn, lands than the production of Herefords.

They have proven themselves on our most rugged ranges and under the most trying conditions, and now they are proving the efficiency which gives them their place on our most valuable lands and warrants their handling of our most expensive feeds. Thus we find where scientific methods are pursued and efficiency is carefully considered from the range to the consumer, that the Hereford is given foremost place in the production of beef.

The Nevada HEREFORD RANCH

Has for fifteen years given its best efforts to the production of high class Herefords. During these years we have endeavored to work to one end; the production of the most efficient beef producing animal.

WE HAVE EMPHASIZED THE IMPORTANCE OF SCALE AND BONE

The $10,000 Beau Blanchard 76th at 10 months old

Herd Bulls

THE SELECTION OF OUR HERD BULLS HAS BEEN MOST CRITICAL BOTH AS TO PEDIGREE AND INDIVIDUALITY. At the present time we have at the head of our herd, HARRIS STANDARD 2nd, 425030, BEAU BLANCHARD 76th, 685487, DEBONAIR 64th, 616840, NEVADA LAD 8th, 697062. Four splendid sires that we believe are among the best that the breed produces. The cut of Beau Blanchard 76th shown above was taken at ten months and does not do him justice as he stands today.

Up to the present time we have offered only a few head of females for sale but we have now reached our pasture limit and are offering over ONE HUNDRED HEAD OF CHOICE COWS AND HEIFERS. They are all producing age and are bred to our herd bulls. Some have calves at foot and are rebred. They are a valuable lot of breeding stock and are offered at a very attractive price.

Por particulars address

Jno. H. Cazier & Sons Co.

Wells, Nevada

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. Duke, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

Is a Calf Worth 23 Cents?

For 23 cents you can insure your calves against death from Blackleg by having them vaccinated with PURITY BLACKLEG AGGRESSIN. (The Kansas Germ Free Blackleg Vaccine.) One treatment immunizes for life and there is no danger in introducing Blackleg into healthy herds of cattle. We also manufacture and sell PURITY ANTI-HOG CHOLERA SERUM, PURITY MIXED VACCINE for swine, and PURITY HEMORRAGHIC SEPTICEMIA VACCINES for cattle and sheep. Stop your losses and increase your profits—it's good business. For service that counts, and does not end by selling, write, wire or phone

PURITY SERUM CO., J. L. Thatcher, Manager (Successor to Thatcher Serum Co.)
Riverside, Calif. Sacramento, Calif.

Save Your Hogs

Raise Your Hogs and Cattle at a Profit
Assist Nature by Feeding
Economy Stock Powder
A general conditioner, a worm expeller and a disease preventive.
Send for FREE SAMPLE and our BOOK on LIVE STOCK.
ECONOMY HOG & CATTLE POWDER CO.
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The Oldest Dairy Supply House in the Southwest.

We Carry Everything in

Creamery Machinery

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O. J. WEBER CO.

759 So. Los Angeles St, LOS ANGELES, CAL.

"SAFETY FIRST"

"You Can't Keep a Good Thing Down."

That's why we're here. We've had our troubles, but the war is over.

Give our Aluminum pail and
REAL TEAT CUP the Once Over
at the STATE FAIR

"Calf-Way" Milker. Carlos S. Bullard
461 Market St., San Francisco, Calif.

Dual Purpose Shorthorns

Herd bull: NORTH STAR, a son of Brandsby's Coming Star, first prize bull at the 1911 London Dairy Show and the 1910 English Royal and imported to the United States at a cost of $4000. NORTH STAR is ideal in conformation and finish. See him and my females at the State Fair.

Chas. L. WEAVER, Tulare, California

My herd of POLAND-CHINAS is headed by KING OF THE GOLDEN STATE.

Have You Heard of the Great GOLDEN STATE KING?

Sire of size and quality Poland-Chinas, The high backed, deep sided, good footed, straight legged and right up on their toes, two good ends, good color and fine coated, long and tail, the kind that grow large, easy feeding and prolific, the fashionable kind.
Every one who sees them says they are great.
See them at the fair and you will say the same.
Some of them will sell at the breeders sale at Lodi, September 19, 1919.

W. A. Young Lodi, Calif.

The Pacific Herd of Big Type Polands.

Herd sire, King Hadley and A Wonder blood lines.
A few classy 5 months' old boars for sale.
Satisfaction or money refunded. Prices reasonable.

Mrs. C. H. Andrews
Route 1, Box 46. Modesto, Calif.

OUR ONLY AIM

is to produce big Poland-Chinas without sacrificing quality.
We sell only the tops for breeders—the others go for pork. I will consign four to the Breeders' Sale at Hanford, October 4th.
See my stock at the fairs.

W. T. DICE Hanford, Calif.

DUROC JERSEYS - - WANTED!

From one to thirty-five gilts. One young boar. Must be good individuals and reasonably priced. Immunized and subject to registration. In writing describe stock and state where it can be seen.

WILLIAM V. MONG
R. F. D. 2 Box 147 Whittier, California

Quick Action is Necessary

if you want this Jersey bull—a three year old son of Gertie's Lad—I won't have him long at the price asked. A few bull calves by Gertie's Son's Victor and Gertie's Golden Victor. Full particulars on inquiry.

A. A. JENKINS Tulare, Calif.

Studying Arizona Ranges

By M. E. Bemis

SOMETHING unique in agricultural short courses is being tried by the agricultural extention service of the Arizona college of agriculture this summer. Arizona is a big state geographically. Most of its many millions of acres is classified as grazing rather than agricultural land, notwithstanding that in the irrigated sections, the land produces crops second to none both in quantity and quality.

These vast areas of grazing land, varying as they do from the deserts, some of which are only a few hundred feet above sea level, to the plateaus of the north that are more than a mile above the level of the sea, present to the student a change in range conditions more marked than is found in states widely separated. The cattleman near the southwestern border has little in common with the man who is growing cattle or sheep in the mountains of Yavapai or on the plateaus of the painted desert country along the old Santa Fe trail near the northern boundary of the state.

Plastered and Lath Silo

Range squad looking at plastered silo, Salt River Valley Experiment Station.

As a means of studying the range and live stock conditions someone conceived the idea of a tour of the state in autos, making flying visits and brief stops with prominent stockmen in all parts of the state, seeing and hearing at first hands. This years' "live stock squad," as it is called, is experimental, and no one can say until it is completed and results analyzed, just how successful it will be or just what will be necessary to make next year's and succeeding years squads larger and more successful. At this time it seems very probable that it will be a permanent feature, but from the experiences of this season there will be evolved a method of handling the squad most efficiently and with greatest dispatch.

The squad is under the immediate direction of Dr. R. H. Williams, animal husbandman of the state agricultural college, and Capt. C. U. Pickrell, extension live stock specialist. Several members of the faculty of the college are accompanying the party as students though their technical knowledge in their respective branches is of material assistance. As this is in a way an experimental trip it was felt advisable to keep the number down to a minimum for this season, so the number of students was held at ten. Probably next year will see a considerable increase.

The trip began at Tucson, Monday August 11, visiting the great Continental Rubber plantation on the road to Nogales, and later to the Santa Rita Range reserve, where under the direction of the national forest reserve there is a fenced area comprising 50 sections. This was fenced in 1904, and at that time it required 60 acres to support one cow. At the present time, with range control, 20 acres will feed a cow in better shape than six did when it was first fenced. The Empire Ranch and the Rail-X Ranch were also visited.

At the San Rafael Ranch the students were given an opportunity to see in operation one of the largest pure bred Hereford cattle ranches in the world. This ranch is an original grant and comprises 20,000 acres divided into 27 pastures. The heifers on this ranch are kept in Mexico until two years old then taken to the home ranch and bred. Careful records of all breeding and the birth of calves are kept. Methods of keeping these records were explained. Swinging around a circle the students visited several ranches to the south and east of Tucson, returning to that city August 14. From Tucson the long journey into the northern ranges was begun August 15. The first day out the itinerary included several ranches, with brief stops at Mammoth and Oracle, following down the San Pedro River to Florence.

Near each county line the squad is met by the county agricultural agent of that county, and he accompanies it through his county. It was my privilege to be the guest of County Agent Heard when he took charge of the squad upon its entrance into Maricopa County. The Goodyear Cotton plantations en route from Florence were passed on the road to Chandler. Cotton to a range student is, of course, of only minor interest, but the by-products of cotton, cotton-seed meal, cake and hulls are of more and more interest as it becomes necessary to supply supplementary winter feed on the ranges or to finish cattle for the market.

The principal things of interest to the students in Maricopa County were the feeding and breeding farms. As a rather welcome change from chuck box rations, the students parked their autos on one of Mesa's broad streets and ate lunch at a restaurant. The Tweedy Ranch south and east of Mesa was next visited. Here about 300 steers are fed through the winter and some kept the year around. One of the interesting sights on this place was the trench silo. This is similar to a trench silo which I described for Cultivator readers several years ago. This silo is 150 feet long, 14 feet wide and 14 feet deep. The soil is rather heavy so that there is no trouble from caving, consequently cementing the sides has not been necessary. The silage is cut into the pit and a team with a scantling drag distributes it and tramps it. When full it is covered with straw and thoroughly wet and tramped. The spoilage is very small. In feeding a wagon is backed down an incline and loaded, the silage being cut down across the end instead of the usual method of feeding from the top. This is a cheap silo to build to fill and to feed from. The capacity of this one is 700 tons. Mr. Tweedy finds that there is most profit in feeding three year old steers. He feeds silage, alfalfa hay, ground milo and cottonseed meal. The students gave Mr. Tweedy close attention, taking notes on his methods.

At the state experiment farm west of Mesa the metal lath plastered silo was inspected and the construction explained by Superintendent Woods. This silo, which has the appearance of monolithic concrete, is considerably cheaper to build and is claimed to be just as satisfactory. The capacity of the silo at the station farm is 125 tons, and it is said that it can be put up now for $500. The sheep feeding pens at the station farm were inspected and results of last winter's feeding experiments given. Some 200 ewes were fed, ten different rations and combinations of feeds being used. Straight silage, which is a popular feed among sheepmen, has been found to be too fattening and does not give as good results as a combination of silage, alfalfa hay and some concentrated feed like barley and cottonseed meal. Speaking of silage for sheep, one sheep owner paid as high as $25 per ton for silage a year ago last winter. Ten dollars per ton is not at all uncommon and some are now contracting, for next season's feeding, silage at $8 to $9. One man is reported to have contracted for corn in the field at $4.

From the experiment farm the squad went to the Pollock Mule Farm

where a considerable number of mares are kept exclusively for raising mules. Some splendid young mules of all ages from four weeks to four years were seen. Mr. Ed. Hendricks, foreman of the ranch, gave an interesting talk to the students.

The Bartlett-Heard Ranch, where several hundred head of Shorthorns and Herefords are kept for breeding, was next visited. Bulls from this herd find a ready sale to range cattlemen at good prices. On this ranch is a battery of cement block silos, the capacity of each being 250 tons.

Other things of interest to the students in Maricopa County were the 400 ton silos on the Burnt Ranch near Glendale. These are built of cement staves. There are two of these big silos on each end of a feeding shed an eighth of a mile long. Here 1500 head of yearlings are finished for the market each winter. The desert country to the north and west of the Salt River Valley where a half million sheep are wintered and the shearing sheds where they are sheared were next visited.

Entering Yavapai the points of interest are the big goat ranches near Skull Valley and Kirkland, and the cattle ranch of C. P. Mullen, president of the Arizona Cattle Growers' Association. Dry farm methods will be studied on the farms near Prescott. The squad will traverse the Williamson Valley, then on to the big sheep ranches near Ash Fork. Several sheep ranches on the road to Williams where the Rambouillet sheep are raised are points that will furnish no little interest and instruction to the students.

Sheep and cattle ranches along the rim of the Grand Canyon afford a combined study of nature and ranching under conditions unlike those found anywhere else in the world. Some experiments of the biological survey in the extermination of prairie dogs will be studied. Two great national forests, the Tusayan and the Coconino, have headquarters on the route, one at Williams and the other at Flagstaff, and an opportunity for studying the methods of leasing these lands for grazing will be given.

The route leads along the Santa Fe over the plateau country to Winslow and Holbrook, thence south through St. Johns and Springerville, through the White Mountains to Globe, with an opportunity of visiting some well known cattle ranches. A public meeting will be held at Globe and another at Fort Thomas on the road through the Gila Valley. Some of the large cattle ranches in Graham and Cochise Counties will be visited, and with a visit to the dry farms of the Sulphur Spring Valley the squad will head back for Tucson, arriving September 6.

So far the schedule as laid out has been closely followed and unless unforeseen circumstances make a deviation necessary it will be closely adhered to.

All in all this range course seems well worth while. To the cattleman who needs some information about the ranges in other parts of the state it is a splendid opportunity and in addition it gives him a chance to learn methods of men that have made a success under circumstances and conditions where methods had to be studied and worked out. Many points are brought out at these meetings and discussions that would not be known otherwise. My guess is that the applications for the 1920 course will be considerably oversubscribed.

A Battery of Silos

A bunch of Hereford bulls waiting for a feed of silage on the Bartlett-Heard Ranch, Arizona.

Upper Photo—A Field of Mules on the Pollock Ranch, Arizona

Roselawn Shorthorns

One of the Oldest Herds in the West

Roselawn Champion

In our herd bull shown above, ROSELAWN CHAMPION, it is felt that we have a bull that is destined to write many brilliant pages of Shorthorn history. The breeding back of him is such as to give the greatest assurance. He was sired by the great breeding bull, EASTLAWN CHAMPION, a son of the Scottish winner, CHAMPION OF SCOTLAND. His dam MISCHIEF E 3d, was sired by VILLAGE BRIDEGROOM and her dam was MISCHIEF C, a daughter of DIAMOND REX. At the 1918 State Fair, ROSELAWN CHAMPION was junior champion and his dam was grand champion female.

Head your herd with a son of ROSELAWN CHAMPION—and be at the Front.

I Sell 45 Select Shorthorns Oct. 16

Many will be Bred to Roselawn Champion

H. M. ELBERG : Woodland, Calif.

Jack London Ranch

SHORTHORNS

The herd was founded with choice selections from the better herds of America, and has been managed in such a way that the improvement from year to year has been notable. For a number of years London Shorthorns have been conspicuous in Western show rings, and at the spring sale, held at Davis, this herd furnished the top consignment—averaging $1090. For Shorthorns of quality, prospective purchasers are invited to investigate this herd. At present, LONDON'S VILLAGE BEAU, a straight Scotch bull, sired by SITTYTON ROAN SULTAN and out of VILLAGE PRIDE 2d, a granddaughter of VILLAGER, is at the head of the herd.

SHIRES

The stud of Shire horses was established with especial regard to producing a class of horses that would meet the demand of the particular buyer. Much of the blood of Neuadd Hillside, three times champion at the California State Fair, is represented in the ready to use stuff, both stallions and mares, that we have to offer.

DUROC-JERSEYS

At all times we have a choice lot of Duroc-Jersey boars and gilts on hand that we offer at prices that are most attractive. The breeding is the kind that has proven to be most prepotent.

ELIZA SHEPARD, Manager — WALTER D. BUNNELL, Herdsman

Glenn Ellen (Sonoma County) Calif.

lovers of Shorthorns

are particularly invited to inspect, in our exhibit at the State Fair, several daughters of **Pacheco Lad 58th.**, a son of **True Dale.** **True Dale's** record as a sire of prize-winners in well known—that the ability to produce good ones does not end with him is proven by his granddaughters. We are confident that the improvement in our herd wrought by **True Dale** will be continued in even greater degree by **Pacheco Lad 58th.**

Pacheco Cattle Co.,

Hollister, Calif.

BEEF---MILK

COMBINE THE TWO

Breed Milking Shorthorns

Foothills' Pioneer

Our Senior Herd Bull is sired by GENERAL CLAY and is out of Imp. TASSEL, a cow that has a production record of 10,000 lbs. milk, and weighs 1700 lbs. GENERAL CLAY has 70 daughters and granddaughters in the R. M.

Many cows with records of 10,000 pounds of milk are in our herd.

Visit Our Herd at State Fair

Santa Rosa Stock Farm

Thos. H. Harrison

Box 108 **Santa Rosa, Calif.**

Some California Shorthorn Steers

By C. N. Hawkins, President, California Shorthorn Breeders' Association

Editor's Note: The following article by Mr. Hawkins, who is president of the California Shorthorn Breeders' Association, appeared in a recent number of The Shorthorn in America, and is published here through the courtesy of Frank D. Tomson. Through the use of registered Shorthorn bulls the Pacheco Cattle Co., managed by Mr. Hawkins, has succeeded in greatly increasing the weight and quality of the steers sold. Good bulls present the surest method of increasing cattle profits.

LAST February we had the very great pleasure of a few days' visit at our California ranch from Mr. and Mrs. C. D. Bellows. Needless to say we gathered enjoyment as well as profit from the visit. I don't mean by "profit" that we kept Mr. Bellows' pocketbook when he went away, but we profited by the advice and encouragement and inspiration of an experienced and successful Shorthorn breeder. I do not know of anything more helpful or more appreciated by the pioneer out on the fringe of creation than visits from the masters of the breed.

Mr. Bellows was much surprised, as are all Eastern visitors to California, to find fat cattle on the open range in the middle of winter, cattle that had never been in a barn or had a pound of grain in their lives, or even hay, except for a short time after weaning, absolutely grass fed and grass fattened.

And so it happened that when Mr. Bellows ended his visit to California and returned to the ice and snow of his beloved Missouri, he told your editor about the "wonderful" grass steers he had seen at our ranch; and as editors have to fill their publications in the easiest way possible, I am trying to accede to his request for a "story of the steers."

But there is nothing so very wonderful about the steers. The wonderful California climate and grass made them possible, and what we have done in taking advantage of what nature has thrown in our way can be done anywhere in California where the climatic conditions are favorable.

To begin at the beginning, when we acquired the ranch about 12 years ago we were not satisfied with the kind of bulls obtainable for the range. The cows were just a fair, ordinary bunch of California cows of all kinds of breeding, but showing perhaps more Shorthorn than any other blood. After worrying along for a couple of years we decided to breed our own bulls, and about ten years ago bought a little bunch of registered Shorthorns. As a consequence the grade of our range cows improved rapidly and all of our range calves for several years have been bulls. The best of breeds is reason number one for the "wonderful steers."

Next we fenced and cross-fenced the ranch so as to provide separate fields for different ages of cattle, both cows and steers. This enables us to make use of our rougher ground for the younger stock and to have a surplus of grass for the beef feeders. We try to stock reasonably light and to have plenty of feed for all our cattle and an extra allowance for the beef. Plenty of feed is reason number two for the "wonderful steers."

In California we have about six months of green grass and six months early in the winter, so that cow and calf both get the fullest benefit from the green grass. The calves are weaned about August and fed alfalfa hay for a few weeks and then allowed to run in a field of wild hay for two or three months. This is the only time in their lives that they get any hay. About November the steer calves are moved into the "yearling" field, the second year into the "two-year-old" field and the third year into the "beef" field, where they stay until sold. On June 15, we delivered about 153 three-year-old steers which averaged weighed full 1515 pounds. This compares with the usual weight of California cattle of the same age from 1100 to 1250 pounds.

Many good judges have pronounced these steers to be the best and heaviest lot of straight grass-fattened cattle they have ever seen. Needless to say the same result could never have been obtained by using bulls of any other breed. It takes the mother's milk, the scale, the easy-keeping quality of sensible disposition of the Shorthorn to produce the maximum results.

Southern California Fair

The Southern California Fair which will be held at Riverside October 7 to 11, promises to far surpass any of the previous meetings of this association in its seven years of successful experience. Preparations are being made to double the present capacity of hog and cattle pens and some wonderful herds will be shown. Pure bred dairy stock in Southern California counties has been increased in the past few months by a number of important shipments from the East, and the best specimens of this will be shown. In the swine department Duroc-Jerseys seem to lead, with Poland-Chinas closely following. Berkshires and Hampshires will be shown in larger variety than ever before.

The best live stock judges obtainable are being secured to act at this show. In addition some of the best live stock specialists in the West will be present and daily demonstrations in breeding and handling will be conducted. It is the intention of the management of this fair to measure up to the educational standard of modern agricultural and live stock exhibits. There are numerous new breeders in Southern California who are eagerly looking for information in better methods of handling, breeding and agricultural problems and they will be able to secure this information at the Southern California Fair.

A very successful goat show was held at Riverside last year, but the show this fall promises to exceed the one last year by over double the number of entries. The goat building will be more than doubled in size and the best equipment possible will be arranged for the comfort of these prize pets.

Very liberal prizes have been offered by the association this year for county exhibits, and these offers exclude Riverside County as an exhibitor. Communities from other counties may also compete for the very liberal community prizes. The is considered so free and inviting that a number of the counties of the southern part of the state are preparing wonderful exhibits. For this reason the association is very largely increasing its general exhibit quarters. The three judges for the agricultural and horticultural departments will be men with statewide reputation as specialists, and not only will they be able to properly place the awards but they will be at hand during the entire week to give any information in their power.

The race program has received special attention and some very fine events are scheduled

One of the big new features will be the farm bureau demonstration train. This will be both an interesting show and an educational adjunct to the fair. Here will be shown by specialists the proper handling and cooling of milk, the grade milch cow competition, testing milk for butter fat. There will be a miniature dairy and creamery maintained and a visual course in better methods given with special demonstrations. Also the pig club work will be shown and pigs will be shown live and judged, as well as poultry production, feeding and culling with demonstrative exhibit, seed selection and treatment and testing seeds for germination, pruning deciduous fruit trees, rodent control, septic tank construction and many other phases of better agricultural methods.

INTRODUCING

The Conaway Ranch Shorthorn Herd

In establishing the Conaway Ranch Shorthorn herd we were actuated by a desire to lay a foundation upon which could be built a herd of the very highest order, and a herd which it is hoped will play no small part in the up-building of the cattle industry of the West. The choice of breeds was made after a critical investigation in which we were convinced that no other breed held greater possibilities in all directions. The establishment of this herd was a business proposition and nothing more. Future development will keep constantly in mind the fundamental fact that utility is the real essential in breeding. Our aim will be to produce a superior class of cattle. Sound principles will govern all of our business dealings, believing that the foremost principle of success is based on the integrity of the breeder, which at all times must be safeguarded, else the breed will suffer. We expect to attract custom that will result in mutual benefit.

A Brother of Champions Should Sire Champions

CALIFORNIA MODEL 635776

The Highest Priced Bull of any Beef Breed Ever Sold on the Pacific Coast

Roan, calved October 27, 1917.

Dams	Breeders of Dams	Sires	Breeders of Sires
		....Sultan Mayflower 402251	.....Anoka Farms
Glenbrook's Marvel 138819	.....Paicines Ranch Co	....Glenbrook Marquis 337657	.....T. Johnson
Diamond Cup 34369	.....S. P. Emmons	....Lavender's Diamond 221079	.....D. R. Hanna
Rose Cupbearer	.....Milton E. Jones	....Cupbearer 91223	.....Wm. Duthie
Spartan Violet	.....Milton E. Jones	....Spartan Hero 77932	.....A. Cruickshank
Autumn Rose	.....S. T. Jones	....Harmony 56358	.....S. E. Prather
IMP. Autumn Queen	.....A. Cruickshank	....Ben Wyvis 19024	.....A. Cruickshank
Autumn Lady	.....A Cruickshank	....Senator (27441)	.....A. Cruickshank
Autumn Rose	.....A. Cruickshank	....Lord Ragland (13244)	.....M. S. Stewart
Rose Leaf	.....A. Cruickshank	....Matadore (11800)	.....W. Smith
China Rose	.....A. Cruickshank	....Hudson (9228)	.....W. Linton

SULTAN MAYFLOWER 402251, SIRE. Sultan Stamp 334974, by Whitehall Sultan 163573, out of IMP. Rachell's Daughter V62-747. DAM. IMP. Mayflower 16th 81259 by Eclipse 333167, out of Marjoram 3d V52-458E.

GLENBROOK MARQUIS 337657, SIRE. Glenbrook Sultan 243185 by Whitehall Sultan 163573, out of Victoria of Hill Farm 8th V46-256. DAM, Lucy of Pine Grove 3d V62-681 by Missie Champion 235025, out of Lucy of Pine Grove V57-638.

LAVENDER'S DIAMOND 221079, SIRE, Bapton Diamond 187000 by Augustin 156229, out of IMP. Bapton Pearl V48-368. DAM. IMP. Lavender Lily V48-500 by Augustin 156229, out of Lavender Cup V40-654E.

SOME FACTS: In selecting CALIFORNIA MODEL we believe we made our best business deal. Other bulls could have been purchased but we do not believe that any bull combines to a higher degree the qualities found in this bull. Sired by the University of California herd bull, SULTAN MAYFLOWER, admitted by all to be one of the greatest grandsons of WHITEHALL SULTAN, and from the cow, GLENBROOK'S MARVEL, whose record as a producing dam entitles her to rank among the first five living cows of the breed, coupled with an individuality that is suggestive of a true sire, we await the coming of his first calves with confidence. His great grand sire, WHITEHALL SULTAN, was the greatest bull the breed produced in years. SULTAN STAMP, his grand sire, was rated one of the best sons of Whitehall Suntan, and SULTAN MAYFLOWER is said to closely resemble Whitehall Sultan. His dam, GLENBROOK'S MARVEL, is a great-granddaughter of WHITEHALL SULTAN and BAPTON DIAMOND, both from BAPTON PEARL, recently referred to by Alvin H. Sanders as being his ideal Shorthorn female. The dam of CALIFORNIA MODEL produced the grand champion steer of 1916; and a full brother to our bull was grand champion at the Pacific International in 1917, and champion Shorthorn steer at the Chicago International in 1918. Obviously such a record is not a happenstance. Because we know the merit of the blood lines back of him, we have faith that CALIFORNIA MODEL will add much to the breed.

OUR HERD: We are building around CALIFORNIA MODEL a herd of females of equal merit. Only the best are to be given a place. They must be representative of the most acceptable modern type and be backed with proven blood lines. It is not our plan to maintain a large herd, but in addtiion to the herd of straight Scotch females we will maintain a herd consisting of good American families.

OUR PLANS: From such a collection we will be in a position to furnish breeding animals that will appeal to breeders and to those in the market for bulls for range work. As stated, the herd will be handled on a sound, practical business basis. Development will follow natural lines. The health of the herd will at all times receive the utmost consideration. The surplus productions will be offered for sale at prices based on real worth. Everything sold will be guaranteed as represented.

THE RESULT: It is our hope that by establishing the herd on such a foundation, and by conducting the business along the lines indicated that we will succeed in producing a class of cattle that will be appreciated and that the cattle interests will come to regard CONAWAY SHORTHORNS as representing the best obtainable and when in search of breeding material will turn to this herd with a full knowledge that what we may have to offer will be right in every way.

And Berkshires, Too

The Conaway Ranch is also establishing a select herd of **Berkshires**—a fact that should be kept in mind by those interested. The same high standard of quality found in our Shorthorns will be noted in our Berkshire herd.

C. HAROLD HOPKINS

WOODLAND, CALIF.

Do You Know?

Who holds the Pacific Coast sale record for Shorthorns? W. M. Carruthers.

Who owned the grand champion Shorthorn bull at the 1916 and 1918 California State Fair? W. M. Carruthers.

Who bred the highest priced Shorthorn female ever sold on the Coast? W. M. Carruthers.

Who topped the 1918 San Francisco sale on bulls and females? W. M. Carruthers.

Who holds the record for the five highest priced females sold at auction on the Coast? W. M. Carruthers.

Who was the Premier Exhibitor of Berkshires at the P. P. I. E.? W. M. Carruthers.

Who held the highest average Berkshire sale in 1916 and 1917? W. M. Carruthers.

Who bred the grand champion boar and sold the grand champion sow at the 1918 State Fair? W. M. Carruthers.

Who developed and sold the grand champion sow at the 1917 National Swine Show? W. M. Carruthers.

Who bred the only sow to defeat the 1917 grand champion sow? W. M. Carruthers.

Where to buy the best in Shorthorns and Berkshires?

W. M. Carruthers
Live Oak, Calif.

A. M. Easton William A. Ward

Blackhawk Ranch

Shire Horses

See Our Exhibit at the State Fair

We cordially invite those interested to visit our stalls and inspect our exhibit of Shire Horses at the State Fair. We have a number of Stallions for sale and we will be pleased to quote attractive prices. Good draft horses are fetching better prices today than ever before. There is a real shortage, and domestic and export demand is developing rapidly.

NOW IS THE TIME TO PREPARE.

Shorthorn Cattle

We have recently established a herd of high class SCOTCH SHORTHORNS representing the choicer families of the breed. From time to time we will have in offer breeding stock of a character that pleases buyers of the better sorts. Our cattle will not be seen at Sacramento this year but a few will be prepared for the later shows. In the meantime we will be glad to have the herd inspected at the ranch.

E. Lovell, Manager

P. O. Address

Diablo, Contra Costa County, Calif.

On a Permanent Basis

By Frank D. Tomson, Editor, Shorthorn in America

Editor's Note: The following article, while written primarily as a plea for stability on the part of Shorthorn breeders, is equally applicable to all other breeds of live stock. The business of live stock raising is based largely upon the element of time and the man who enters the business with patience is the man who wins.

THERE is a tendency in this country, more or less general, and one that developed quite naturally, to change from one activity to another, to place investment in one line for a period of time and then withdraw this investment, or much of it, and place it in some other line. This applies to nearly all lines of business activity, farming, live stock breeding, merchandising, banking, there is a long list. Following this fluctuating inclination inevitably results in sacrifice of a considerable part of the advantage which has been acquired. There is built up a good will that has its value, and in many business concerns this good will has actually a greater value, is in fact a more important asset, than all of the material investments of these concerns.

This is a matter, and a most important one, that is frequently overlooked entirely, or, if recognized, underestimated. There are many businesses that could lose all of their material assets, yet retain their good will and continue almost uninterrupted along a successful course. This may seem a radical assertion, but its truth has been demonstrated times without number. Professional men, lawyers, doctors and others, spend long years in becoming established, in acquiring good will, knowing that once this has become their possession, their success is assured.

In no other industry does good will have a greater value in relation to the business than in the pure bred live stock industry. If you are inclined on the spur of the moment to question this, think back over the names of far-sighted men who became well established and who created and possessed the good will that became a priceless asset in their business. Then, if you will, recall the names of those, and we can name them by the scores, who having obtained the advantage of good will and established reputation, tossed it aside and disposed of their herds. They sacrificed what it had taken many years to obtain and received in the final act of closing out a meager return therefor. This good will isn't an asset that can be readily turned to another. Its greatest value is in the continuity of the business of which it is a part.

It seems an unfortunate condition that so large a number of those who have engaged in the breeding of pure bred live stock, and this applies quite as forcibly to the Shorthorn as to other breeds, have failed to hold their position of advantage for the simple reason that they did not place the proper estimate upon the value of good will. The building up of a herd of registered Shorthorns cannot be accomplished in a day. The profits to be derived come in larger proportion after the herd is well established than at the outset. I do not mean to suggest that there are not safeguards for the beginner, for this has been widely demonstrated, and these safeguards are increasing as a result of the practice of Shorthorn breeders generally and the policies adopted by the American Shorthorn Breeders' Association, but I desire to emphasize the increasing advantages the longer one is actively and discreetly engaged in the business. Let us assume, for instance, that Amos Cruickshank could have lived and retained his herd intact to the present day. Is there anyone who would question the tremendous advantage he would have in patronage as the result of the good will which his operations warranted and obtained? Another example is the case of the late Colonel Harris' Linwood herd in Kansas. A turn in his affairs caused him to decide on short notice to disperse his herd. The months that had preceded this decision had not been especially prosperous, a condition that applied to all industries as well as agriculture. But it was evident just at that time that business was reviving. Yet the Linwood herd passed from his ownership when he was admittedly one of the most constructive breeders of his time, and the material which he had in hand was scattered to the four winds. Could this herd have remained in Colonel Harris' possession and continued under his direction, the measure of the financial success that in all probability would have followed can scarcely be estimated. So we might go on and enumerate, one after another, breeders who for one reason or another turned away from their established course and allowed their greatest possession to vanish, scarcely appreciating in ever so slight a degree the worth of this possession.

In what other line of business does this good will have so close relation to success and so large a proportionate value? I can conceive of no other line outside of the professions in which it plays so important a part.

At the outset I suggested that this fluctuating tendency was quite natural, and the reason is this: we have looked upon ourselves as a young nation, a new people in an undeveloped country, with boundless resources available almost without effort and without cost. A farmer acquired his land in Ohio, tilled it until it had increased in value beyond his hopes. Then he sold it and went farther west into Illinois and acquired a larger tract of land and began the development of new property. Again he saw his land increase in value to an extent that seemed to him beyond reason and he sold out and journeyed on farther west into Iowa where he was able to buy more extensively. Again he began the process of making and improving a farm, but the price moved always upward and he heard of cheaper land in Kansas, in Texas, in Nebraska, in the Dakotas and farther on So he converted his Iowa farm into cash and moved into some section where land was still available at a low price. This is just a sample of the condition that induced men to change their locations and in changing their locations there were offered alluring prospects in other channels, in merchandizing, banking, mining and numerous others. So it happened that many men, before they had reached middle life, had operated in numerous locations and invested in several lines. Some of them had prospered, but many others had failed to hold their capital intact.

But these alluring prospects have largely faded away. The cheap land all but a limited acreage, has been brought under cultivation and private ownership. The money that is now taken from a farm investment in Illinois buys but little more, if any, in any other section of the country. Conditions have become more stable. From now on success will be won with less fluctuation, with less changing of base, with a more continued effort directed in one place and along one line. The breeding of pure bred Shorthorns is taking on a stabilized condition. True, there are those who make investments on short notice and quick turns when the conditions are most favorable and realize a satisfactory profit, but even in such cases the profit realized is probably much less than if the investor had continued in possession of the cattle acquired and taken advantage of whatever prestige may have attached to them.

In the main, however, we are not speculators. Our farms are operated and improved to obtain better results if our activities are continuous. There are years when the profits will be larger than others so far as the cash income is concerned, but to the constructive breeder it often happens that what are regarded as the lean years are the ones in which they realize the largest profits. That is, they are able to make selections of breeding stock of the desired pedigrees and standards that enable them to work the hoped for improvement in their herds, and when the periods of greater prosperity come, and they invariably do come, the established breeder is in position to reap the larger cash profits which accompany these periods. These months and years of preparation are of vital relation to success.

Suggestions for Feeding Cows on Seven Day Tests

By J. E. Burnett, Dairy Husbandry Section, Michigan Agricultural College

IT should be remembered by the feeder that it is the natural tendency of the cow to give the heaviest flow of milk soon after freshening and he should do everything possible to stimulate this tendency with cows that are on official test. In the short time test we look for the largest production that the cow is capable of for a limited period, not the largest normal year around production, and the short time records should always be considered in this light. It should be the effort of the feeder to cause the cow to give him all she can during the test period.

It is not natural for a cow to come into her milk immediately after calving, and the seven-day record in which the largest flow of milk occurs, consequently, usually starts more than seven days after calving. The higher percentage of fat is usually found immediately after freshening, and the increase here usually more than makes up for the greater flow of milk that comes at a later period. The largest production occurs, however, when the feeder is skillful enough to hold the high test of the cow until the large flow occurs, when the two combine in a way that brings joy to the heart of all concerned.

More large records are made before the cow freshens than are made afterward. By this statement I mean that the feeder can do more toward helping his cow to make a large record by getting her in good condition before freshening than he can afterward. The cow on the seven-day test cannot eat enough, as a rule, to supply her with the necessary nutrients from which to manufacture the milk, consequently in order to get the nutrients she must take them from her body. In order that she may be able to do this they must be there in a form that is readily available. Therefore the cow should not only be in good condition at freshening time but should be fat and the fat should be soft enough to be consumed readily to furnish the energy necessary to make the milk. In order to have the fat soft it must be put on quickly within two or, at the most, three months of the time of freshening. Fat put on slowly comes off slowly.

A good ration to feed for fitting is bran, oats, corn or barley and oilmeal in equal parts by weight. If you can obtain hominy it is an excellent feed for this period and should be substituted for the corn, as the fat formed by this feed is softer and therefore more desirable.

About ten days before the cow is to freshen, change the feed to ground oats and bran or bran alone. If the bran and oats are used they should be in equal parts by weight. This change will put the cow in a laxative condition, will help to keep the fever out of her blood, and will help to reduce or prevent the congestion in her udder. In an hour or so after freshening give her a pail of warm water. Give only warm water for twelve hours after freshening. For feed, continue the bran and oats or the bran alone as the case may be, for two days when she may be gradually put on the regular test ration. Leave the calf with her for twenty-four hours. It will help to reduce the congestion in her udder and the calf should have the first milk. Do not milk her out completely for two days as a preventive against milk fever. Start in milking three times a day on the third day and four times a day on the fifth or sixth day or before, if necessary.

At the time of the starting of the test the cow should be getting grain at the rate of one pound to each four and a half pounds of milk produced. This may be slowly increased until the cow is taking all that she will with safety. How much, depends to a large extent upon the individual cow. Some cows will go off feed on one pound of grain to three and a half pounds of milk while other cows will take a much larger amount of grain. The amount to be fed is a question to be settled by the feeder himself and must be changed to suit the needs of each cow.

It is usually advisable not to make sudden changes in the feeding as cows are usually very sensitive to such changes. It is safest not to increase the grain more than a half pound per day. Care should be taken that the cow is not overfed. It is a good plan to always feed a cow a little less than she is evidently willing to take. The first sign that the cow is going off feed is that the coat is rough in spite of good grooming. Next the eyes appear glassy and staring and finally the cow refuses to eat all or part of her feed. The best way to treat this is to cut down the grain ration at once to half or to omit a feeding entirely, and if the condition continues, to give a dose of Epsom salts or call a veterinarian. A pound to a pound and a half of salts, depending on the size of the cow, is a good sized dose. The best way to give salts is to use a quart milk bottle as the wide mouth allows the air to enter readily and shortens the time necessary. Give the salts in plenty of water, at least a gallon of water to the pound. This gives better results than where only a small amount of water is used.

All the grain should be weighed to the tenth of a pound. All roots and silage should be either weighed or measured. This is very important because while it may be possible to feed a cow successfully without weighing or measuring her grain very few men are experienced enough in handling grain to accomplish this.

What the ration should consist of depends largely upon the feed at hand, the individual taste of the cow, and the length of time that it is expected to continue the test. It may be said, however, that it is the general plan to feed a rather narrow ration, one that contains a rather large proportion of protein. It is expected that the cow will balance the ration from her own body.

It is more important that the ration contains feeds that the cow likes than that the nutritive ratio be at any set figures. The digestible nutrients found in the feeding tables are only approximations of the nutrients contained in the feeds in question as they are the results of averages and the feeds on hand may be higher or lower than the figures given.

It is well to make a variation in the feed of a cow on test, that is, to change the ration. This should be done gradually as cows are very susceptible to sudden changes. All changes in the feed ration should be accomplished by replacing a small portion of the old mixture with an equal portion of the new. Cows do better when there is a large number of different feeds in the ration. They do not tire of it so quickly and will eat more of the mixture because of the variation. Give the cow all the water she will drink. The more she consumes, the better. If it is impractical to keep water before her all the time, she should at least be watered at every feeding.

It is a good plan to have plenty of beets or other roots on hand when starting the test. Red table beets are best if they are to be had. Cows will frequently eat a hundred pounds or more per day of these beets. If the red beets are not to be had, then mangels, sugar beets, carrots, rutabagas or turnips should be substituted. Cows that are not fed too heavily will eat rutabagas readily but under test conditions where it is desired to get all the feed into the cow she can handle, they soon tire of the rutabagas and refuse to eat but a very limited amount. Roots of any kind are usually found to be great stimulators to the flow of milk. They are fed for the laxative effect and the succulent value rather than for the food value that they may contain.

The best way to feed a cow for the seven-day test is the way that gets the best results and this will probably be a little different for each cow. The exact methods that will get the best

SHORTHORNS OF QUALITY

No Western herd has been assembled with greater care or with more regard to the breeding, individuality, character, breed type or real beef qualities. Time or money were not factors in the founding of the herd. The best herds in America were drawn upon as well as a few of the highest esteemed herds of England and Scotland. On account of a recent move the herd will not be represented at the State Fair, but a cordial invitation is extended to all to visit the farm and inspect the young stuff, both bulls and females, that we have to offer.

Herd Bulls

DIAMOND CHOICE, a roan son of the famous DIAMOND GOODS and from a QUEEN OF BEAUTY dam. A massive, thick fleshed smooth bull—right individually and a sire of note.

GREENDALE SULTAN, a white son of LESPEDEZA SULTAN, one of the greatest sons of Sultan Stamp, and out of a Victoria dam. Regarded by all as one of the real top bulls owned in the West. His calves are outstanding in any company.

The Breeding Herd

The breeding herd contains many of the most attractive matrons owned in the West. The majority of the females are high class representatives of the most popular Scotch families. Several are imported. Among them are a number of prominent prize winners at important American and British shows. The best evidence of their real worth is the class of calves they are dropping to the service of the above bulls.

If in the market for a young bull of herd heading qualities or for bulls to use in improving the quality of your range cattle, you will be interested in visiting this herd before making final selections.

T. T. Miller Hollister, Calif.

THE MARK OF QUALITY

HILLCREST STOCK FARM

a Pioneer Breeding Establishment

Hillcrest Shorthorns

For years this herd has been looked upon as one of the reliable sources for high class breeding stock. A history of our winnings at the leading Western fairs, would be a history of those fairs. Many of the greatest bulls to see service in the West have been important factors in the building of this herd. Today the herd is stronger than ever before. The needs of the breeder, or the range operator, can be taken care of to advantage.

Hillcrest Shropshires and Merinos

The part played by the Hillcrest Shorthorns has been duplicated by the flocks of Merinos and Shropshires. Wherever sheep are run in the West, the name of Glide is known.

Visitors are always welcome.

See My Exhibit at the State Fair

Thornton S. Glide

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A liniment that not only heals and cures Human Flesh, but for years the accepted Standard veterinary remedy of the world.

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Grand Champion Herd of Berkshires

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Hauser's Organic Fertilizers
Built for
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results with one cow will not with another. It is necessary to study each individual cow to learn her likes and dislikes and then try to follow them as closely as possible. Some cows do better for having a little exercise out doors each day while others do better in the barn all the time. Some cows do better if milked with the milking machine but most do better if milked by hand.

Doubtless there are many breeders that have had experiences that led them to take different views than the above, but these are the general rules that the majority of cows will follow, although as I have mentioned above. each cow is a study by herself.

Fake Tests Exposed

TO THE Members of the Holstein-Friesian Association: I had hoped to be able to wait until action had been taken by the executive committee or board of directors of the Holstein-Friesian Association before advising you on the status of the complaint against Charles Cole in testing animals for Advanced Registry.

This matter came to the attention of the writer at Brattleboro, Vermont, through a conversation with the man who has charge of testing for Advanced Registry in that state. This gentleman advised me that they had received information from a source that was reliable, that Charles Cole had attempted to make a fraudulent record on a cow that he owned and was then under test in Vermont, through the injection of cream into the milk, and that acting upon that information the state of Vermont had employed assistance and had sent three men to aid in having a re-test made. The description conveyed to the Vermont station described Cole as wearing a smock and overalls with a rubber bottle containing cream underneath the smock and a rubber tube extending from that down under his overalls, the tube being long enough to reach the pail when he was sitting over it milking. When visiting the farm Cole came to milk this cow under re-test with smock and overalls, and when he started to milk one of the supervisors suggested that he remove the smock. Cole declined to do that, insisting that it was not necessary. They watched him closely and when testing the milk it tested two per cent less and was considerably less in pounds that had been the previous milkings. Cole declined then, for reasons he advanced, to make any further attempt with the cow, said that the test was off, and refused to continue with the re-test.

The writer then suggested that the gentlemen come with him to the board of directors who were then in session at Brattleboro and he told the same story to them. At his suggestion the dean of the agricultural college was asked to come and meet with the directors He was advised by the writer, with the sanction of the board of directors, to go on and make his investigation and the Holstein-Friesian Association would pay the expense of it, that it looked as though with the information they already had that they would be better able to get additional information than any one else, that might, perchance, lead to further developments. It was agreed that the state would go on, employ whatever assistance was necessary, make a full and complete examination, and report to the superintendent of the Advanced Registry and the secretary of the Holstein-Friesian Association at the earliest possible moment, that the board of directors or executive committee might take further action.

It was felt then that publicity or notice might interfere with getting any further information. There evidently were rumors afloat in connection with it, and before either secretary or superintendent of Advanced Registry could get a report from the further investigations of the Vermont station, I received a telegram from the chairman of the executive committee that he had received a letter of great importance, asking if it would be possible for me to meet to him in Cleveland. I went to Cleveland on Monday, July 28, when Mr. Reynolds, chairman of the executive committee showed me a letter from Mr. J. Williams of Sterling, Illinois, to the effect that he had information that was certain, of the most startling character, and went on at great length without giving names or any specific information. We concluded to have him come to Cleveland and telegraphed him. He came to Cleveland the next day and advised the chairman of the executive committee, and the writer, that upon hearing the rumors about the condition in Vermont and still having full faith in Charles Cole with whom he had made a contract to test for him, he telegraphed Mr. Cole to meet him in Buffalo and he met Mr. Cole in Buffalo. Mr. Cole had with him his brother-in-law, Mr. Crawford.

During the conversation Cole admitted to him that he had been making some large fraudulent records and when Williams showed his astonishment Cole went to considerable length into the different animals that had made these records. Now the chairman of your executive committe and the writer had the rumors and partial reports from the Vermont station, had a report from Mr. Williams that he had talked with Mr. Cole when there were present only Mr. Cole, Mr. Williams, and Cole's brother-in-law, Mr. Crawford, and it was then deemed advisable to call a meeting, by telegraph, of the executive committee, for the 4th and 5th of August at Chicago, and at the same time the chairman of the executive committee should go with Mr. Williams and interview Mr. Cole, find out just what he was willing to tell and what he had to say in relation to the tests that he had been making, and any other information that he might have that affected the records of the association. Mr. Reynolds with Mr. Williams went and saw Mr. Cole who they reported was perfectly willing to tell all he knew about it, and just what he had done. Mr. Cole agreed to come to the meeting of the executive committee in Chicago on the 4th and 5th, and did come there. There, in the presence of the entire committee and a stenographer, he went on and told his story of the testing that he had done where he had started in the state of New York some years ago, went into his personal history, described many of the animals that he had tested at the Cabana Farm, explained fully how he had helped the cows, as he had described it, by putting cream in the milk. He told who was familiar with what he was doing, to whom he had imparted the knowledge of the way that the high records were made, and who he had helping him. He expressly stated, however, that Mr. Cabana had no knowledge whatever of what was going on. He described the large bonuses he received for making the records running into the thousands of dollars, of which he received two-thirds and Mr. Nieman, in charge for Mr. Cabana, received one-third. In one particular case the bonus was $3000 for a single record, in which case he had $2000 and Mr. Nieman $1000.

This statement, which took a large portion of a day, was reduced to writing, signed, and sworn to, and the committee at that time decided that these persons whose names had been mentioned in connection with this, who owned cows whose records Cole claimed were fraudulently made, should be notified before the board took any action, and they were telegraphed and requested to meet at Cleveland, to which place the committee adjourned to meet on the 6th.

At the adjourned meeting in Cleveland Mr. Cabana came before the executive committee, told them how surprised and grieved he was that such a thing should have taken place, and that it was absolutely without his knowledge except as to the bonuses. He stated that he had paid these bonuses because others had offered Cole the same amount, and that he felt with the large herd he had he was in position to pay as much as anybody for making records.

Mr. Nieman came before the committee, denied all knowledge of the fraudulent record episode, but did admit that he had been receiving one-

third of the bonus as described by Cole.

Mr. Brooks, who had been associated with Mr. Cole in the making of records and whom Mr. Cole claimed he had advised of the manner in which they were made, and the scheme by which they helped the cow produce the results, and who lived at Cole's house, claimed that the records he made were all right, that he never knew anything about Cole making fraudulent records, that so far as he knew the records were straight.

Mr. Bernhard Meyer of Finderne, New Jersey, appeared before the committee, chagrined and humiliated because of what Cole stated had taken place, while testing certain cows recently for him, but he had no knowledge of the facts, and the only thing that he knew about the way the cow had been tested was what Cole said about it.

Several of the persons notified did not appear, and as the time was short it was thought before acting the executive committee should give them further opportunity, and in the meantime get what further testimony was obtainable. The committee adjourned to meet on the 25th, at which time final action will probably be taken by the executive committee.

The committee realizes, and the breeders will readily appreciate, the tremendous scope and influence that the action of the executive committee or board of directors is bound to have not alone on the animals whose records may be expunged, but the offspring that have been sold in practically all the states. Thousands and thousands of dollars have been paid for the offspring because of the record of the dam, and calves of the offspring have been sold at large prices because of the record of the grandam, and the effect is already apparent in two or more generations.

The executive committee also realizes that the Holstein-Friesian Association of America is a Record Association, that one of its records is that of advanced registry; that the maintenance of the accuracy of these records is the reason for its life, and that while the expunging of frauds from our records may bring disgrace, anxiety, and loss to some of our breeders the necessity for quick and accurate action on the part of the executive committee or board of directors is conceded by all. The only question in the mind of any officer or member of the board of directors is what is the right in the premises, what does justice, equity, and good conscience demand, and that action will be taken.

There can be no possible question about the necessity of expunging records known to be fraudulent. The injury and wrong would only be continued to permit them to remain, and there will be no hesitancy whatever on the part of the board of directors to take action when in possession of all the facts.

We ofttimes hear people say what they would do. Some of us are overly willing to advance opinion when no responsibility is charged against us, but this is a momentous proposition for the Holstein-Friesian Association. The Herd Books of this great industry have been assaulted, and an insult and injury inflicted upon every breeder of the black and white wherever located, because in my opinion the man who has debauched our records has assaulted the good name and fame of the greatest breed of animals on the earth. There was no occasion for exaggerated. There was no occasion for fraud. The Holstein-Friesian cow has demonstrated herself on every occasion to be the most wonderful producer of milk and dairy products in existence, and this under legitimate and regular conditions.

I feel called upon to make this statement to the breeders at this time before action has been taken by the board of directors, because of publication occurring in papers in Boston and elsewhere, and it seemed to me that no additional harm could possibly come by giving the membership generally a history of the case, although my judgment had been that no report should be made until action was taken by the executive committee or board of directors and the particular animals affected specified, because the great bulk of animals tested by Cole are not questioned. It was only possible to perpetrate the fraud on one while testing six for advanced registry, and when certain supervisors were in charge at the Cabana Farm he made no attempt whatever to perpetrate the fraud. Consequently only a small number of the records made can be charged with fraud, and to have this information come out before full information could be given as to the animals that would be affected, seemed like causing a lot of anxiety among thousands of persons who had bought animals not knowing whether theirs were among the fraudulent ones.—D. D. Aitken, President, Holstein-Friesian Association of America.

TO MAKE GLENN COUNTY A DUROC CENTER

It is difficult to think of Duroc-Jersey Swine without thinking of the Uneeda Glenn County herd.

For a numer of years H. P. Slocum & Son have been breeding Duroc-Jerseys, the herd being under the active management of Clayton Slocum. Mr. Slocum states that it has been a hard, uphill fight, but by exhibiting at the leading fairs in this and other states, constant advertising and innumerable personal calls he has been able to thoroughly establish his herd and is just beginning to reap, to a certain extent at least, the reward of his efforts. Mr. Slocum recently remarked to a Cultivator representative, "There is scarcely a week that we do not make one or more shipments, aside from those we deliver here on the ranch. For instance, last week ke shipped to Mr. McCabe, Lompoc, a boar; to L. A. Lesh, Tulare, a boar; 10 gilts to F. R. Seccombe, Los Angeles; a boar to J. S. Gibson, Williams; a boar to Brownell & Marshall, Woodland; a boar to E. E. Brownell, Suisun, and a boar and three gilts to A. C. Holly, Dixon.

"If the present demand keeps up we will soon be entirely sold out with the exception of spring pigs, and we are not overly anxious to sell these at the present time." Mr. Slocum also states that he is planning an extensive trip through the East, where he will purchase a number of top sows for his own herd and in addition will select 50 or 60 for the farmers of Glenn County. Late this fall a meeting of a large number of farmers in Glenn County will be held at which time the Glenn County Duroc-Breeders' Association will be organized. Next year you can look for a number of public sales of Duroc-Jerseys in Glenn County.

WELL KNOWN KINGS COUNTY BREEDERS' SALE

On October 7 in Hanford, M. Bassett, J. H. Crawshaw and Fred Ross will sell 75 Poland-China bred sows and a few boars of sufficient merit to take their place at the head of some good herd. Mr. Bassett, one of the oldest breeders and considered the father of the breed in this state, will sell 40 sows by Model Chief and Model Fellow bred to such boars as Kings' Timm, Kings' Gerstdale Jones, Model Fellow Jr. and Model Dreadnaught. Mr. Bassett considers Model Dreadnaught a great boar and is expecting him to prove an exceedingly valuable sire. J. A. Crawshaw will sell 20 gilts by California Gerstdale and bred to Kings County Buster and Some Price, a son of Great Price, a half brother of Black Price, the 1918 grand champion at the National Swine Show. Fred Ross will sell 15 gilts by Rossmead Big Bob, a boar that was considered by many the best Poland-China boar in California. The Ross consignment will be bred to his new boar, Big Timm, recently secured from Robinson Bros., Morton, Illinois.

There is hardly a doubt that this sale will be one of the most successful Poland-China sales held this year.

LOOK OUT

- - FOR - -

Winsor Ranch Durocs

SEE THEM AT THE

STATE FAIR

We are breeding the largest sows in the west to

Winsor's Giant Orion

(By the world's champion Orion Cherry King Jr.)

Winsor's Giant Orion is 82 inches from between eyes to root of tail, 40 inches high and weighs 965 pounds. He is the largest boar in the west and is absolutely smooth.

Fred De Vore says:

"I tried to buy Winsor's Giant Orion for Ed Kern's own use before I learned you had an option on him."

Winsor's Giant Orion is assisted by

Great Model

(the most popular sire in the west) and

Great Sensation III

(the largest boned fall boar in the world. He is sired by Great Sensation and out of the $5000 world's record sow Uneeda Lady.)

Bred Gilts For Sale

A few Real Boar Prospects by

TOP SENSATION and GREAT MODEL

Winsor Ranch

address R. K. Walker, Bonita, San Diego Co.

Model Cherry Gano

Sire: ORION'S KING GANO. Dam: MAY ROSE by ANEEDA MODEL.

Being mated to daughters of UNIVERSITY WONDER and UNEEDA WONDER'S CHIEF. Write us for good UNEEDA MODEL.

R. E. Clifford Strathmore, Cal. Earl Houghton

Big Type Duroc-Jersey Swine

Herd Headed by

CALIFORNIA ORION KING, Sired by Orion Cherry King and out ofa Joe Orion 2d. Sow

If you are looking for size and quality combined you cannot afford to overlook getting some of his stock. My sows are DEFENDER and Colonel Breeding combined with ORION blood lines. I will tolerate nothing but economical feeders in my herd. Inquiries invited and visitors welcome.

Harvey M. Berglund Dixon, Calif.

Cummins' Good Enuff

our herd boar, represents what a good DUROC-JERSEY boar should be. I do not believe that better spring pigs can be found anywhere than will be seen at my ranch. You can see them at the fall shows. A sow from our herd was sold in the Tulare sale for export to Hawaii.

HENRY CUMMINS

COME HERE FOR GOOD DUROCS

Breeder of Duroc-Jerseys Visalia, Calif.

As Evidence

that we are breeding popular Duroc-Jerseys, we made the highest average in the July sale of the Tulare County Duroc-Jersey Breeders' Association. We topped the sale at $300.

Herd Boars: Lord's Orion Cherry King and Joe's Orion Cherry King 5th.

Joe N. Chinowth Visalia, Calif.

All Good---We Sell

No animal leaves our ranch for breeding purposes unless it is of the correct Duroc-Jersey type and breeding. That's one reason, and a mighty good reason, for our large business. Write me just what you want and I will send you full description and price them reasonable.

Allen Thompson Tulare, Calif.

Is $29.60 Additional Profit a Year Per Cow of interest to you?

Is an Additional Daily Gain of Approximately Five-tenths Pounds in Fattening Hogs of interest to you?

Is there a Lot of Roughage now on your Farm Being Wasted Just Because It Is Not Palatable?

You can make this additional profit; you can get this increased pork production, and you can turn what is now waste into profit by using that great Conservation Food,

PURE HAWAIIAN CANE

MOLASSES

Write us at once and let us tell you how.

W. H. YOUNG COMPANY

Holbrook Bldg. SAN FRANCISCO

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

California as a Field for Duroc-Jerseys

By V. F. Dolcini

WHEN one stops to realize that ten years ago there were but a couple of Duroc breeders in the state and that at the present time there are far over one hundred, one can imagine what tremendous strides the Durocs have made; and yet this is only the beginning. The most rapid strides have been made recently and the breed is going ahead faster today than ever.

California is considered by all live stock men to be the greatest state in the union for the growing of stock, and especially hogs. With 12 months of growing weather and with green feed practically every month of the year there is no reason to doubt California's future as a hog producing state. In the past California has not raised enough hogs to supply her own demands and at the present time there is a great shortage of hogs in the state. This simply means that we must raise more hogs than we have in the past.

It is a generally acknowledged fact that the Durocs outstanding strong points are their prolificacy and their ability to graze and rustle a large part of their own living. Since we have so much alfalfa for hogs to graze on and since there is so much stubble to graze on in the fall of the year, the Durocs, by reason of their extremely good grazing qualities, are particularly adapted to these conditions. From experimental data we find that hogs running on alfalfa make gains on one-third less grain than those fed in a dry lot, which means that we must have hogs that will get out and eat their share of alfalfa along with a grain allowance, and this we find Durocs are especially willing to do. When we come to real rustling, which means getting all of their feed from a stubble field and alfalfa pasture combined, it will be found that the Durocs are out eating and making gains when a great many other hogs are lying in some comfortable place asleep.

Aside from their rustling qualities, which is a big item, if there is one outstanding point which the Durocs have, it is to farrow big litters and raise them. Durocs are especially prolific as a breed, and it is because of this fact that they are so popular here in California. By big litters we do not mean an average of 12 or 15 pigs, but you will find most Durocs will raise eight good pigs twice a year.

These two points are simply mentioned as outstanding advantages of the Duroc, not that they are at all lacking in any of the good qualities which other breeds possess. If put into a feed lot they will make gains as economically and as rapidly as any other hog and will finish into a marketable hog excelled by none. The fact that four out of every seven hogs that went to the leading markets were Duroc or Duroc grades, and that some of the biggest butchers and packers in California have their ranches stocked with Durocs is proof enough of what they think of them as killers; and, on the other hand, if they were not making more money for them than other hogs they would not have them.

Durocs have come into California with a good many years handicap by other breeds and yet they have forged ahead and today are as popular a breed as we have. They have gone ahead here, as they have in all other places, because of their merit, and that alone. They are not a breed that has been boomed and pushed by moneyed men of influence, but because they suited the conditions and made more money for their owners.

Heretofore the Duroc has been considered from the farmers' and butchers standpoint, but the future of the pure bred looks even better. If there is one class of live stock that should be pure bred it is hogs, and we find men who bought pure bred boars to use on grade sows a few years ago are today getting rid of their grade sows and putting in pure breds. With pork up to and over 20 cents per pound they find it does not pay to use grades when it costs so little to get started with pure breds.

Then, too, with the extension work of the government and university aiding and encouraging boys' pig clubs there is a great demand for pure breds, and what is more, most of these boys want Durocs. One of the men in charge of this work said that more boys wanted Durocs than anything else. If they get them, they will boost the breed considerably. When you realize that the majority of these future hog raisers want Durocs you can readily see what the future of the Duroc is. It is unfortunate that all of these boys could not have been supplied, but California was simply short on Durocs during the past year. There was far greater demand for bred sows than the supply could fill. So it is evident that California must increase the stock of Durocs. If the Duroc breeders of California will get together and agree to sell only good hogs, and supply these boys' pig clubs when they want pigs, at a fair price, there will be such a demand for good Durocs in the future that it will keep all of the breeders busy raising enough good ones to fill the demand.

Up to the present time whenever a man wanted good Durocs he had an idea that he had to go East to get them. That was all very well in the past, but if we are to continue breeding Durocs it will be remarkable if we can't raise as good ones here as we can buy in the East. We can grow them as well, and all that is necessary is to get some good foundation stock and use a little judgment.

Another bright prospect for the fufuture is our outside markets for pure breds. By these, I refer to the Philippine and Hawaiian Islands, South America, and China and Japan. They are going to draw on us, as this is the logical place to get them, and we must have hogs that are good enough here in California to ship to these countries. We have already shipped a number to the Island and some to South America, and in the very near future some will be going to Japan. It is simply up to us here in California to raise the right kind of Durocs and raise them well, and we will always have a market for them. If all breeders would go into the business with the idea of boosting Durocs by only selling the good ones and by giving every man and every breed credit for what they have, California would soon be right up to the top as a Duroc state.

With the Durocs' present popularity here, as indicated by their number and distribution, with the price of pork as it is, and with the growing demand for good Durocs, no one can argue but that California is a good field for Durocs.

WINSOR RANCH GETS MORE EASTERN DUROCS

In a recent letter from R. K. Walker of the Winsor Ranch he writes as follows:

"I have just returned from my second trip east in the last six weeks. On the first trip I bought five outstanding sows, bred to, or sired by, Great Sensation, Great Orion Sensation, Pathfinder, Great Pathfinder and Top Sensation. These are real sows and cost me as high as $800 for some of them, not including express. On this second trip I bought 80 head of spring and fall gilts sired by the world's best boars, among them being gilts by Great Sensation; Great Orion Sensation; and Orion's Sensation, his litter mate; Great Wonder I Am, the largest boar in the world; Pathfinder; Grand Model's Type; King of Orions; Grand Model; Orion Fancy King and others. These gilts are mostly open and will be bred to our boar Great Model, and our two new herd boars, Winsor's Giant Orion and Great Sensation 3rd.

"Winsor's Giant Orion is all his name implies. He is the largest Duroc-Jersey boar on the Pacific coast and withal is as smooth as a pig and extremely mellow. He measures 82 inches from between eyes to the root of his tail, stands 40 inches high and weighs 965 pounds. After seeing the pigs he sired, Fred De Voro tried to buy him for Ed Kern's herd, but we already had an option on him. Every

one likes this boar. He has extreme size and shows remarkable depth, finish and easy feeding qualities. Has as good an eye as I ever saw on a hog, and, best of all, sires pigs like himself.

"Great Sensation 3rd is a son of Great Sensation, and the world's highest priced sow at public auction, Uneeda Lady. She is a Sensation-bred sow and the best sow I saw in the East. Ed Kern paid $8000 for five of her spring boar pigs and sold two of them again in a week for $8500. Great Sensation 3rd is out of her last September litter. He is the largest fall boar I ever saw. He stands 36 inches high, 65 inches from between eyes to root of tail and has full nine inch bone. Eastern breeders all admit he is one of the largest boned fall boars in the world.

MARSH-McCRACKEN POLAND-CHINA SALE

The announcement of the sale of Poland-Chinas to be held by Marsh and McCracken will, no doubt, create considerable interest, due to the prominence these two breeders hold in the Poland-China field. Hale I. Marsh of Modesto has for a number of years been one of the leading Poland-China breeders on the Coast. He has been a large exhibitor and a consistent winner at the leading fairs and live stock shows. Les McCracken of Ripon firmly established himself as a breeder of Poland-Chinas by the purchase last winter of the boar Kings' Big Bone Leader at the long price of $700. Probably no Poland-China boar on the Coast has a better standing as a sire or is more often referred to than Kings' Big Bone Leader.

On October 4, 50 head of bred sows and gilts selected from these two herds will be sold at public sale in Modesto. The offering will be made up of such blood lines, already popular and desirable, as Model Major, Kings' Big Bone Leader, Major Hadley Wonder, I. B. A. Wonder, Blue Valley Tecumseh, Lodi Giant and Joe's King. To those familiar with the most popular Poland-China blood lines, these names are significant of the kind of animals to be sold in this sale.

COMBINATION POLAND SALE AT HANFORD

On October 7 in the Bassett, Ross, Crawshaw sale there will be offered by Mr. Crawshaw, 20 gilts sired by California Gerstdale, out of large prolific dams representing such blood lines as Longfellow Special, Jumbo Equal, Long Wonder and President's Equal. These gilts have been carefully grown out, bred to Kings County Buster and Some Price, to farrow at 14 to 16 months of age.

STRINGY MILK

"Stringy milk can be prevented when old utensils, especially the strainer cloth, are boiled," says C. H. Eckles, chief of the dairy division of the University Farm. "If a tank of cold water is used for cooling," he adds, "it should be emptied and scrubbed with boiling water. If this treatment does not eliminate the trouble the fresh milk should be heated on the stove to a temperature of 150 degrees, then left standing 20 minutes at this temperature and cooled as quickly as possible."

Stringy milk is not caused by the feed or any abnormal condition of the cow, but by bacteria which enter the milk after it has been drawn from the cow. Milk affected in this way is not unhealthful but it is certainly not appetizing.

ROADHOUSE AT FAIR

Assurance is given of a successful exhibit of dairy products by the fact that Prof. C. L. Roadhouse will have charge of the dairy exhibits at the state fair. The association is offering medals and cash prizes amounting to $1000 for exhibits of creamery butter, cheese, market milk and cream. Three cash prizes on judging dairy products, amounting to $150, are offered. The money in this class applies on scholarships in the dairy manufacturers' short course at the University Farm, to be paid to the winner upon completion of the course.

HOG WALLOW A COMFORT FOR PORKERS

It is as natural for the hog to want to wallow as it is for the small boy to scurry to the old swimming hole with the first breath of spring. Hot weather is hard on fat animals, the portly porker included. That is why a well made, sanitary hog wallow is like a Coney Island bathing beach for the hogs. A popular and serviceable type advocated by the United States department of agriculture should be made of concrete about 12 inches in depth and large enough to accommodate the herd. The wallow should be supplied with a satisfactory intake and outlet so that it can be filled about two-thirds full of water and drained every few days or as often as is necessary to keep the pool fresh and cleanly.

Where natural shade and shelter are not available, the hog owner should put up a temporary shelter by building a framework about four feet high and thoroughly covering the top with brush, straw, grass, or hay. This inexpensive sunshade should be of sufficient size to protect a herd of hogs in comfort as they lie under it. As a rule the ordinary hog house should not be used for shade purposes during the summer. Each year hog mortality is comparatively heavy due to "porker sunstroke" induced by maintaining the hogs in the open without sufficient protection from Old Sol's furnace.

Geo. V. Beckman & Sons, Lodi, owners of the Lake Side herd of Poland-Chinas, have recently purchased from L. R. Glover of Missouri a March yearling gilt sired by Big Bob's Equal and bred to the noted Liberty Bond. The Beckmans are very enthusiastic over their purchase.

The New 16 Valve
Twin City Tractor
Pays Big Dividends

For the first time in the history of the tractor industry, the 4 cylinder, 16 valve engine (valve in head type) is now applied to a tractor. The TWIN CITY 12-20 with its 16 valve motor actually develops 25 per cent more than its rated horsepower.

This new 12-20 is a light weight tractor that will out-pull, out-last and out-dividend other tractors of equal rating.

Not built down to a price, but built up to a fixed ideal—to do the work assigned to it better than it has ever been done before.

The highest grade tractor will unfailingly prove the least expensive and pay the biggest dividends.

Frank O. Penstrom Co. DISTRIBUTORS
Van Ness at Golden Gate
San Francisco, Cal.
Los Angeles Stockton

Duroc-Jersey Pigs
from both
Eastern and Western Registered Sows of Best Blood Lines. Sired by LEADING BOARS
Ranch: Van Nuys, Calif.
W. Chas. Swett, 7256 Franklin Ave., Hollywood, Calif. Phone Holly 4115

DUROCS OF THE BEST BLOOD LINES
Bred sows, gilts bred and open. Have one very nice O. C. K. boar 9 months old. Dam sold for $1,100 and sire for $1,000 in last month's sale.
Jersey Queen Farm, San Jose, Cal.

MACHINERY
OF EVERY DESCRIPTION
Bought, Sold and Rented
BUTTRESS & McCLELLAN
205-7 N. Los Angeles St., Los Angeles

Greenwood
Duroc-Jerseys
Herd by the Great Young Boar
Johnson's Defender, Jr.

Sire—Johnson's Defender, Junior and Reserve Grand Champion at California State Fair 1917.
Dam—Cherry Chief Lady, Grand Champion State Fair 1917.
Both selected and shipped west by Fred Devore.

Johnson's Defender, Jr.

is being mated to a choice herd of sows, daughters and granddaughters of such famous boars as King the Col., Col. Protection, Model Col., King's Col., King of Orions, Burke's Good Enuff, Long Wonder Model, Crimson Monarch 2nd, Chief's Col. Jr., Model's Crimson Wonder.

Johnson's Defender, Jr.

is siring a uniform lot of long, stretchy, smooth pigs of the correct type. See some of his get at the State Fair, or, better, see them at the farm on highway 8 miles north of Marysville. Write us when you want real Durocs. Herd cholera immune.

Greenwood Farm
Witherow & Stafford, Prop.
Live Oak, Sutter Co., Calif.

California George Jr. Republic

Holsteins

A select herd that is being developed for yearly production. Our present herd sire is DICHTER SPOFFORD KORNDYKE LAD, whose four nearest dams average over 30 lbs. in seven days, and who was grand champion at the 1917 Riverside Fair.

Duroc-Jerseys

Our herd of Duroc-Jerseys is composed of strictly big type breeding. Herd headed by REPUBLIC'S ORION KING, a son of WALTS ORION CHERRY KING. We offer for sale now a choice lot of boars and gilts of March farrow. The prices are attractive.

California George Junior Republic
Chino Calif.
(R. A. Condee, Supt. of Livestock)

A Solid Foundation

Our sows carry the blood of Premier Gano, Uneeda Crimson Wonder and King the Col.

OUR HERD BOARS

King Orion Cherry
Uneeda King's Col.

See our herd at the STATE FAIR and note the kind of Durocs we are breeding. We will offer for your inspection convincing proof that we are right in type, blood lines and pork making qualities.

W. V. Bennett Nord, Calif.

A Complete Dispersal Sale

THE POLAND CHINA HERDS

Dimmick Bros. and C. G. DeRaad

The sale will consist of HERD BOARS, YOUNG BOARS, BRED SOWS AND GILTS, OPEN GILTS old enough to breed for spring litters, and SPRING PIGS of BOTH SEXES.

MR. DeRAAD has sold his ranch and DIMMICK BROS. are dissolving partnership, hence this sale and this opportunity. The sale will be held at the

Fair Grounds, Hanford, Tues. Sept. 30

Owing to the large number to be sold the sale will start promptly at 10:30 A. M.

Full particulars in a later issue of the CULTIVATOR.

DIMMICK BROS. : Lemoore : C. G. DeRAAD

Col. Geo. W. Bell

Tulare, Auctioneer

Look the Herds Over Then See Mine.

If I can not show you Poland-Chinas, viewed from any angle, that meet your ideal of what a good Poland-China should be, I can't expect your business. I will show you size, bone, type, good backs and all other essentials necessary to make a good hog.

No breeder can offer greater values than can be found in my herd. Dollar for dollar you are the winner. Come and see. .

I will sell five spring boars in the Lodi sale, September 19th, every one a real herd boar prospect.

See me at the State Fair.

J. F. Lehman **Lodi, Calif.**

Greatest Ever Assembled
My Herd of Poland-Chinas
NOW

Represents one of the Greatest Combinations of Superior Blood Lines Ever Assembled in the West

20 CALIFORNIA GERSTDALE GILTS

sell in the BASSETT, ROSS & CRAWSHAW SALE, HANFORD, OCTOBER 7th. These gilts are out of large, prolific dams rich in the blood of LONGFELLOW SPECIAL, JUMBO'S EQUAL, LONG WONDER and PRESIDENT'S EQUAL. They will be bred to

KING'S COUNTY BUSTER or SOME PRICE

SOME PRICE is out of ORANGE LADY 2ND, and by GREAT PRICE, a half brother to world's grand champion Poland-China boar. He is out of a litter of eleven; is black with six white points and is typical of what a great Poland-China should be.

Buy this kind and get into the hog business in a way that will win.

J. A. CRAWSHAW HANFORD, CALIF.

Why You Should Choose the Jersey

By Guy H. Miller

THIS article is particularly addressed to the man who is under the impression that Jersey breeders breed Jersey cattle just because they consider them the handsomest of cows and are in the business from the fancier's point of view. To all such I desire to present the following eminently practical reasons for selecting this well known breed:

The milk of the Jersey is superior in quality to that of any other cow. Why is it that you see the word "Jersey" on so many milk delivery wagons? And why is it that you so rarely see the name of any other breed of cattle on a milk wagon? The reason is that experienced dairymen and a large number of the consumers know that the Jersey cow gives the richest milk of any known cattle. Wherever real Jersey milk has been tried by the housewife it is without exception preferred to any other. There are many retail dairies that have the word "Jersey" on their wagons that have never sold any Jersey milk nor any that approached it. There are many retail dairies whose milk contains a small quantity of Jersey milk mixed with a large quantity of the poorer article for the purpose of raising their product to the standard required by municipal law. Such dairies using the word "Jersey" are using a substitute for the genuine article. They sell "watered stock" for the real thing. One of the surest signs of excellent quality in a product is that salesmen endeavor to use the name of this product to assist in working off on the public a product of poorer quality that has no reputation of its own.

The cream from Jersey cows needs no artificial coloring added to it in the churn.

The Jersey cow's milk is easier to churn than the milk of other breeds, for the reason that the globules of fat that rise to the surface to form the cream are larger in the milk of the Jersey cow than in milk of a poorer quality. For the same reason also her milk is easier to skim and skims more thoroughly, leaving a smaller amount of fat lost in the skim milk.

The skim milk from Jersey cows is more valuable for the reason that it contains a greater per cent of solids, besides the fat, than the milk of other cows. The average per cent of fat contained in the milk of 10,800 Jersey cows that have been officially tested for the period of a year is 5.37 per cent fat. This is considerably in excess in fat content of that produced by any other breed of cattle.

The United States bureau of animal industry's Bulletin No. 155 states that Jersey milk contains 14 per cent total solids. This is the highest amount of total solids produced by any dairy cattle. For this reason Jersey milk is the most valuable for cheese making. Owing to its high per cent of total solids more cheese can be made from 100 pounds of Jersey milk than from any other. More casein can be made from it, more dried or condensed milk.

The Jersey is the most economical producer of butter fat and of milk solids. She gives the greatest return for the amount of feed consumed. She has been entered in extensive competitive tests with other dairy breeds under supervision of well known dairy authorities and has unqualifiedly demonstrated her ability to produce dairy products at the least cost per pound. This fact should be carefully considered by every dairyman, particularly by the man just starting in the dairy business. At this time every known feed for dairy cows, unless it be wild grass pasture, is at a very high price. It is the amount of money left after the feed bills are paid that really adds to the bank account. The dairyman should never overlook this fact.

The Jersey cow comes into profit at an earlier age than the cows of larger breeds. A Jersey heifer at 24 months of age is as near maturity as the heifers of larger breeds at 30 months of age, thus saving an expense of six months in feed in raising the Jersey cow.

No cow is longer lived or a more regular breeder than the Jersey. Many Jersey cows have bred up to 18 and 20 years of age. Pogis Irene 2nd dropped a calf and started on a yearly test in which she made 590 pounds of butter fat beginning when but a few days under 19 years old.

The Jersey as a breed is most prepotent. Daughters of well bred Jersey bulls from all other kinds of cows give milk of higher quality than their dams and are more economical producers. This is because the Jersey has been bred for 200 years as an economical dairy producer.

That she is the handsomest of all bovine animals is universally admitted. She embodies beauty and utility in the highest degree.

In selecting a breed of dairy cattle, why not select the Jersey? By so doing you will secure the result of 200 years of time given by thoughtful breeders in establishing this greatest breed of dairy cattle.

SAN JOAQUIN POLAND BREEDERS TO HOLD INITIAL SALE

On Friday, September 19, the San Joaquin Poland-China Breeders Association will hold a public sale of Poland-Chinas in Lodi. As this is the time of year when the farmers and pork producers begin looking for boars for their fall breeding operations this association thought it would be a splendid idea to select a number of young boars for this sale. The sale will give those looking for boars an opportunity to make their selections without the necessity of visiting a number of herds to secure what they need. These boars have been carefully selected as to breeding, size and quality. Boar sales, for this very reason, are popular in the Eastern states, so why not in California? However, this sale will not be strictly a boar sale, but 25 high class sows and gilts will also be offered, bred to the already popular sires owned by members of the association. Col. Leachman will act as auctioneer.

TO DISPERSE POLAND HERDS

It is to be regretted that two such herds of Poland-Chinas as those of Dimmick Bros., and C. G. De Raad are to be dispersed. Mr. De Raad has sold his ranch and the Dimmick boys are dissolving a partnership existing between Oscar and Clarence, due to Oscar having moved to another county. These two herds have been built on a solid foundation and represent several years of hard work, much thought and the purchase of foundation animals at whatever price necessary to secure representative blood lines.

Both Mr. De Raad and Dimmick Bros. made purchases last spring from some of the leading herds, and these will all be sold in this sale. As these animals are of the most popular big type blood lines, both breeders and farmers will in this sale be afforded the opportunity of adding to their herds, at their own price animals of superior merit.

ANNUAL KINGS COUNTY POLAND SALE

One of the features of Poland-China circles in this state is the semi-annual sale of the Kings County Poland-China Breeders Association.

The next sale of the association has been set for Saturday, October 11, and at that time 80 head of bred sows, gilts and boars will be sold.

The following have made entries for this sale: G. I. McCune, G. Nehls, C. L. Newport, H. E. McMahon, W. L Haag & Son, T. J. Woodworth, R. G Hamblin, H. D. McCune, R. L. Walz, C. A. Vaughn, W. T. Dice, W. S. Hubbard, J. A. Crawshaw, M. Bassett, C. G. De Raad, C. Dimmick, J. M. Bernstein, E. G. Meyer, W. Bernstein and F. D. Ross.

Harvesting of Bartlett pears has begun in El Dorado, Nevada and Placer Counties. The crop is reported the best ever.

A large drying plant for grapes and prunes is soon to be erected at Cloverdale, Sonoma County.

THE BIG BANNER SALE OF 1919

40 Poland-China Bred Sows and Gilts 40

Fair Grounds, Hanford, Calif.

Wednesday, September 17

Lendorris Liberty Bond

JOHN M. BERNSTEIN and W. L. HAAG & SON a carefully selected lot of Poland-China bred sows and gilts of strictly *big type* breeding that will leave a lasting impression on the Poland-China breed in California.

The Yankee Jr.

LENDORRIS LIBERTY BOND brings to California the blood of one of the greatest living boars, being a son of L. H. Glover's world's famous boar, LIBERTY BOND. The thinking breeder will appreciate the opportunity for securing this blood.

THE YANKEE, "King of the Breed", sends to California one of his best sons in THE YANKEE JR., to assist in the production of better Polands. A. D. Severe and M. A. Dowling head their herds with sons of THE YANKEE. Get this blood in your herds.

The breeders who keep in touch with the world's best Poland-Chinas will realize that in these sows we are offering a real opportunity to strengthen their herds. Haag & Son will sell 17 sired by YOUNG JUMBO and bred to LENDORRIS LIBERTY BOND. YOUNG JUMBO has proved his ability to sire the kind that are in demand. His open gilts topped the October and February sales. A. D. Severe said, "You can pick out his pigs wherever you see them." Haag & Son will also sell two by KING'S BIG BONE LEADER, grand champion boar of 1918, bred to YOUNG JUMBO, and one by KING'S JUMBO ORPHAN, bred to LENDORRIS LIBERTY BOND. John M. Bernstein will offer four sired by Frazier's Timm 2d; five by GIANT JONES, selected from the E. D. Frazier herd. Mr. Frazier says of Giant Jones: "He is a great son of GERSTDALE JONES and from a GIANTESS and BIG BOB sow"; three by K's BIG PRICE 2d; one by CALIFORNIA SMOOTH JUMBO; two by MILLER'S LONG CHIEF; one by KING'S BIG BONE LEADER, and two by YOUNG JUMBO. All are bred to THE JANKEE JR. A daughter of BLUE VALLEY TECUMSEH sells bred to PRESIDENT.

The East no longer dominates the Poland-China field when such sows and gilts sired by the above well-known boars and bred to THE YANKEE JR. and LENDORRIS LIBERTY BOND can be bought at public auction in this state.

Breeders---Farmers

attend this sale and buy the kind of Poland-Chinas that will return you a quick profit. We expect these boars to create a national demand for their pigs and this is your chance to share in the prosperity. We feel confident that the wonderful development of the Poland-Chinas is on a permanent basis and we hope, by this offering, to assist the development.

After a careful review of this offering can anyone doubt that this will be the BANNER POLAND-CHINA sale of the year?

Write to either John M. Bernstein, Hanford, or W. L. Haag & Son, Hanford, for Catalogs and mark your selections

Sale will start promptly at 12:30. Lunch served at 11:30 A.M.

The Offering Has Been Immunized. *Come to This Sale*

John M. Bernstein W. L. Haag & Son

H. M. Bernstein, Auctioneer

Looking Forward

I am now planning for my Big SPRING SALE OF POLAND-CHINAS.

How Well? Look at these---

KING'S BLACK PRICE, a son of the WORLD'S GRAND CHAMPION BLACK PRICE, is one of my new herd boars.

KING'S BIG BEN, by BIG BEN, is another.

CHIEF'S DEFENDER CHOICE is the sire of a third boar.

I have also a choice lot of strictly big type gilts, including a daughter of BLACK PRICE

My next sale in the spring of 1920 will be unusually attractive

Wm. Bernstein **Hanford, Calif.**

The Greatest Herd

---OF---

Big Type Poland Chinas

on the Pacific Coast

Competent judges have pronounced this herd the best balanced, biggest boned, both sows and gilts, and strongest backed herd on the Pacific Coast.

King Jones Over

(See His Picture)

represents years of constructive BIG TYPE breeding and his pigs show these outstanding qualities. This premier sire mated with our big boned, high backed sows is siring Poland Chinas that should be on every farm on the Pacific Coast where profitable hogs are sought. As proof of these assertions see our herd at the STATE FAIR. You will then determine to get this blood in your herd.

McCarty & Starkweather

P. O. Box 2250, San Francisco

Ranch: Paradise Road, Modesto, Cal.

I Can Show You and Prove to You

that my BIG TYPE POLAND-CHINAS are superior. They make oprk and make it economically.

These are the kind you want—they make money.

EuGENE MINER **Lodi, Calif.**

WILL SELL SOME IN THE LODI SALE SEPT. 19th

MORE ABOUT the great GOLDEN STATE KING

As a Sire of Poland Chinas

combining all the desirable qualities such as high backs, deep sides, straight legs and big bone, up on their toes, two good ends, the kind that grow big—that make pork rapidly. We say again: as a sire of that kind he has

NO EQUAL ON THE PACIFIC COAST

Watch his get at the State Fair. Come to the public sale at Lodi, September 19th and buy a few of his pigs. See them and you will want them.

W. A. YOUNG. **LODI, CAL.**

Sound Live Stock Advertising

By R. P. Royce

NEXT in importance to the successful production of acceptable pure bred live stock one of the big problems that the breeder has to solve is the disposition of his product at satisfactory prices. The problem of distribution is the same tremendous factor in all lines of industry and is in no way different in the pure bred live stock business than in any other business.

The prime reason for entering the live stock business is to make money, and unless one's bank account shows a substantial growth each year the breeder can count himself a failure, no matter how good stock he may produce, unless, of course he had some misfortune.

All are familiar with that much quoted bit of philosophy that the world will seek out the maker of superior mouse traps regardless of location, and, while it is not so stated, the inference is that the mouse trap man will eventually be accorded wide patronage regardless of the amount of advertising he may do. It is perhaps true that one can acquire considerable reputation by word-of-mouth publicity, but it must be admitted that such a method is entirely dependent on the element of time, and that is money.

It is not the intention of the writer to make out a case for advertising, because the value of advertising is so generally admitted, but it is his intention to suggest that there is no reason why practically the same methods used for successful distribution of merchandise cannot be applied to the pure bred business, and to urge that breeders give more care and thought to their advertising space and copy.

Admitting at the start that advertising is a necessary part of any successful business, then it should not be regarded as an expense but as a part of the business, just as much as breeding, feeding and management, and money spent for advertising should not be regarded as useless expense, but as part of the investment.

Before a man can be a successful advertiser he must first be thoroughly sold on the value of publicity. He must regard advertising as a strictly business proposition, and he should give his publicity the same careful thought that he gives other of his business affairs.

Advertising space costs money, a fact that should not deter the breeder. When one glances through the advertising columns the impression is easy to acquire that the average breeder is paying slight attention to this copy. Some men are spending too much, others not spending enough and many are spending unwisely.

Most men pride themselves on their business ability. When they make any investment they expect to get value received. Yet there are any number of live stock breeders who apparently forget that when they buy advertising space they are spending money and that it is largely up to them whether or not they get the most out of their expenditure. One buys space to insert an advertisement; one inserts an advertisement for the purpose of attracting the reader with the idea of selling him. The advertisement that attracts the buying public and puts forth the best selling talk is the advertisement that pays.

It seems to the writer that live stock advertisers should consider their publicity from the following angles:

As stated above, the breeder must believe in the value of judicious advertising, else he will lack enthusiasm. He must understand that unless he is producing meritorious stock he can not expect to enjoy the best trade. A clever advertiser may succeed in fooling the public for a time, but he can rest assured that sooner or later he will be found out, and his herd or flock will be rated for what it is worth.

There is a streak in most of us that tends to elevate our own stock unduly and to depreciate the value of our neighbor's. It is well to think well of our own stuff, but it is fatal to develop a state of mind wherein we can not recognize merit wherever found and regard our own products at their real worth. Contact with other herds and flocks by personal visits, and attending sales and shows, is the best method for acquiring a sense of values and a true appreciation of one's own herd.

Once the breeder knows the legitimate values of what he has to sell, he is in a position to establish sound values and to estimate rather closely the volume of business he can expect to transact. This knowledge is highly essential to judicious advertising for the reason that one can then determine about the amount of money he can afford to spend in disposing of his annual surplus. No matter how much business one may do in the course of his fiscal year, if his operations fail to show a profit he has made a failure. One of the most successful live stock advertisers the writer knows has his business on a basis where he can estimate its probable volume for the year. He then sets aside a fixed amount that he feels he is justified in spending in order to transact that volume. This amount, once determined on, is regarded as necessary selling expense and is charged up to the general costs of operation.

A list of farm and live stock papers that his past experience has indicated are profitable mediums to use is made up and the amount to be spent with each paper is determined upon and space bought on that basis. The whole matter of newspaper advertising is then settled at once on a business basis, and knowing this, the advertising representatives know what to expect and work on that basis.

Having decided on the amount of advertising appropriation, the next problem for the breeder consists in the preparation of the copy. The value of an advertisement, aside from the medium used, depends solely on what is said, the manner in which it is said, and the attractiveness of the copy. In preparing advertising copy the fact should not be lost sight of that before an ad can sell, it must attract the reader's attention. Therefore the effort should be made to prepare a layout that lends distinctiveness to the copy, a make-up that sets the ad out from the others on the same page. This may be accomplished by the use of a cut, a distinctive border, the use of rule lines or by a special design and type face. There seems to be a growing disposition on the part of the keener advertisers to adopt specially made designs. These designs are the work of artists and the charge for such work is quite reasonable. The old idea of freak advertisements, based on freak headings and pictures, running the copy upside down, etc., has long since lost its force, if indeed such practice ever had force.

Another point to bear in mind is that force in an advertisement is not solely dependent on how much is said but rather on how it is said. Some advertisers proceed on the theory that in order to get the most out of advertising space it should be jammed as full as possible of reading matter. It is a mistake to attempt to crowd too much in a given space. Much effectiveness can be obtained by the use of white space. In the preparation of copy advantage should be taken of all legitimate facts calculated to create interest and convince the reader. Facts concerning the breeding and records of the herd, stated in a brief, clear and straight-shooting manner should always be used, and it has always seemed to the writer that the dominant note of profit accruing to the purchaser should be stressed. Most men buy breeding stock because they have been convinced that pure breds can increase their profits, and such being the case, it is up to the individual advertiser to convince the prospect that the herd in question can supply the breeding material that will meet his demands to better advantage than other herds. The same copy should not be used continuously, but should be changed frequently and always kept fresh. An advertisement

REMEMBER THE
HORSE-SHOE TREAD

The King of Farm Implements

Here's another King of farm implements. It's the new light draft, roller-bearing Brillion King Soil Pulverizer that's not only King in name but King for helping you raise bigger crops. With it you so crush every clod as to loosen up every plant food particle for quickest seed sprouting, growth and easier cultivation of young plant. Packs undersoil for holding the necessary moisture for quickest future growth, and greatest possible crop yield. Fine for early cultivation of all crops and packing wheat. Made for team or tractor. Price reasonable, light draft, strongly built. Get one.

AT ALL JOHN DEERE DEALERS

"Quality" Feeds

Nothing better. Made of the pure grains and meals. No filler, mill wastes or substitutes. Every sack tagged with guarantee of analysis and materials.

18-5 LAYING MASH, with Buttermilk. 18 per cent Protein, 5 per cent fat. High protein mash at a reasonable price

Quick-fat

Complete Hog Feed

with Buttermilk.

It makes 'em grow fast.

At your dealers or direct from the factory.

I. S. Chapman & Co., Inc.

Chapman Bldg., San Bernardino, Calif.

The Leading Live Stock Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

$35 to $165

2 and 4-wheeled
AUTO WRECKERS
1450 Central Ave, Los Angeles

obviously intended to sell boar pigs in the fall lacks force the following spring or summer. A "dead ad" suggests a dead advertiser.

The advertiser should realize the limitation of advertising. An advertisement should only be expected to bring a good class of inquiries. The matter of sales will depend very largely on the ability of the breeder to close the deal by proper handling of the inquiry. All inquries are entitled to prompt, full and courteous replies. Remember that you are selling in competition with other breeders and that the chances are strong that the prospect has written other breeders. The man who sells him will be the man who gets the most convincing letter in the shortest time. Confidence can be created by the letter written, the attractiveness of the stationery, the promptness of the reply and by straightforward detail statements.

Every inquiry received represents a possible buyer and is an asset to the breeder. Therefore a careful list of all inquiries should be kept, and a mailing list built from them.

The use of attractive herd catalogues and mail matter, showing and all other publicity should be taken advantage of, but should be regarded as supplementary to the advertising carried in high class farm journals, breed papers and newspapers.

To the question "When should a breeder advertise,' the answer is "always." Efficient advertising is continuous advertising. The theory of advertising is based on psychology and a continued campaign on the mind of the public to convince that the advertiser has what the public wants. Carefully prepared copy, persistently used, will in time force the public mind to associate a name with a particular thing. That the above is true is susceptible to abundant proof. But advertisers often reach a point when they feel that through persistent advertising they have established themselves in the public mind to such an extent that they can afford to drop out of the advertising columns. Such an idea is a fatal mistake—and a costly one. It is fatal to assume that the public will remember long, unless constantly reminded. The world moves rapidly and the public forgets easily. It is a costly mistake to believe that one can afford to drop out for the reason that when one does, and his advertisement no longer confronts the public, he is throwing aside all the money spent in building his standing. The value of advertising is cumulative. An advertisement is worth more the second year than the first, more the third year than the second, and increases in value proportionately to the length of time it appears.

The beginner faces the problem of when to start adverttising—and usually feels that he should not start until he has something to sell. Therein he makes a mistake. The time for a new breeder to begin advertising is before he has anything to sell. Naturally, it will take some time to establish himself with the public, and he should lose no time in doing so. If, on the other hand, he waits until he has something to sell before he starts his publicity, he will have to be content to wait until he establishes his name as a breeder before he can expect to attract buyers, and in the meantime he is forced to the expense of carrying his sale stuff longer than had he paved the way for sales while his stock was reaching sale age.

The man who feels that he cannot afford to advertise when he is sold out is losing sight of the fact that the discovery on the part of the inquirer that a breeder is sold out constitutes the best sort of advertisement because it indicates to the inquirer that the productions of the herd are in demand, and that knowledge will stimulate a desire to obtain stock from that herd when again in the market.

Another feature of herd management that can be made a useful form of publicity is the general air of neatness about the home place. It is not necessary that elaborate and costly improvements be made on a breeding farm. As a matter of fact, from a practical standpoint such improvements are to be discouraged—they add to the overhead charges and usually are constructed more with regard to the outside appearances than to the comfort and health of the stock. But there is no denying that a neat, clean

Get Ready for the Big

Poland China

SALE

Hale I. Marsh, Modesto — Les McCracken, Ripon

Modesto, Saturday, October 4, 1919

The POLAND-CHINA breed has had many triumphs the past several months and we expect this sale to add to the list.

50 Bred Sows and Gilts 50

representing the cream of these two herds, with a combination of blood lines rarely found in single offering. What does it mean to the Poland-China breed when you can buy at public sale daughters of such boars as MODEL MAJOR, first prize aged boar at Sacramento in 1916, grand champion at Modesto and Fresno and the sire of Major Hadley Wonder, grand champion at Sacramento in 1917? What does it mean when you can buy at public sale daughters of KING'S BIG BONE LEADER, grand champion boar at the 1918 California State Fair, and a boar whose fame has spread from one end of the Pacific Coast to the other, a boar that has more sons at the head of good herds than any two boars on the Coast?

As further evidence of this offering there will be daughters of MAJOR HADLEY WONDER, I. B. A. WONDER (reserve grand champion at the P. P. I. E.), BLUE VALLEY TECUMSEH, LODI GIANT, greatest son of I. B. A. WONDER, JOE'S KING by KING JOE and out of the great sow MISS BOB 2d.

What This Blood Means to Pacific Coast Poland-Chinas

is intensely magnified by the importance of the boars to which the offering is bred. Pay particular attention to the great array of boars to which these sows are bred—KING'S BIG BONE LEADER, grand champion at the 1918 State Fair; MAJOR HADLEY WONDER 2d, and BLUE VALLEY BIG BONE. None better bred—no better pedigrees can be written.

To make this sale we have refused orders all summer. We are offering sows and gilts in this sale that will command the respect of all breeders and every farmer who has the best interest of his future at stake.

It is of the greatest importance that you get your catalog early and acquaint yourself with the breeding of the offering.

Every animal in this sale is immune from cholera

The sale will start promptly at 10:30 A. M. Lunch served at noon.

Hale I. Marsh, Modesto — **Les McCracken, Ripon**

Auctioneer Col. Geo. W. Bell, assisted by Cols. Leachman and Clark

Oxbone Poland Chinas

Our Herd Boar

WONDERGERST

whose dam was that smooth 800-lb. sow **Giantess Wonder**, and sire **Big Jones**, the sire of a long list of Champions. Out of a litter of eleven he is breeding size, bone and prolificacy. Sows bred to him sell in the Tulare Sale, October 21st. Get one.

Oxbone Herd Poland Chinas

F. E. FAY TIPTON, CALIF.

McCune's Big Type Poland Chinas

HERD OF QUALITY

Hippety-Hop
Flippity-Flop
Watch King's Massive Orange Go Over the Top

No better boar in California than our senior herd sire, KING'S MASSIVE ORANGE. See that your next Poland-China comes from the quality herd.

See Our Herd at the State Fair.

H. D. McCUNE, Lemoore, Calif.

WATCH AND WAIT

I sell October 7th, Forty Sows, sired by Model Fellow and Model Chief. Bred to Kings Timm, Kings Gerstdale Jones, Model Fellow Jr. and Model Dreadnaught.

I consider Model Dreadnaught one of the greatest boars I ever owned.

See us at the State Fair.

M. BASSETT Hanford, Calif.

SEE WHIZ--BANG

our herd boar. See our breeding herd of **Big Type** Poland-Chinas and you will understand why our herd is referred to as the real big type herd. We have two litter mates to WHIZ-BANG ready for service in some good herd. All sired by Forest View Bob by Caldwell's Big Bob.

See these boars and our herd at the State Fair.

J. H. Cook **Big Type Polands** Paradise, Cal.

When writing advertisers, mention The Cultivator.

ranch, with well painted and repaired buildings and fences inspires confidence and respect in visitors. They suggest prosperity, and the visitor gets the idea that stock proving profitable to the breeder will prove profitable to the buyer.

The writer is conscious that he has touched only a few of the problems of publicity and that much more could be written. But becauses he recognizes that successful selling in the end is the most important of a breeder's operations, and because he knows that more careful attention to publicity will result in more sales, the above is offered for what it is worth.

THE POLAND-CHINA SALE AT FRESNO

The first consignment sale of the Fresno County Poland-China Breeders Association was held Wednesday, August 20, on the grounds of the Fresno district fair association. The sale was exceedingly satisfactory, and the results of this sale should prove to every breeder the stability of the live stock industry. Fifty-one bred sows and gilts were sold for a total of $6125, making an average of $120.10. The top came from the herd of A. Buckland & Son on Bonnie Mc., E. E. Lapelle of Caruthers being the purchasers at $335. As a special attraction a young gilt was given away, Mrs. T. J. Woodward of Stratford holding the lucky number.

Geo. W. Bell of Tulare was the auctioneer and although he was so ill he could hardly stand, held the crowd until the last animal was sold.

Following is detailed report of the sale:

CONSIGNMENT OF BUCKLAND & SON

1. Ira L Mason, Fowler, $240.
1. E. E. Lapelle, Caruthers, $335.
3. F. C. Morris, San Francisco, $165.
5. T. Bisel, Fresno, $155.
6. Mrs. Annie Donders, Fresno, $155.
7. W. A. Snelson, Chowchilla, $170.
8. Clarence Peterson, Bowles, $125.
9. Ira Mason, Fowler, $100.
10. C. E. Johnson, Turlock, $255.

CONSIGNMENT OF W. C. FICKLIN

11. Mrs. Annie Donders, Fresno, $125.
12. Hughson & Hall, Fresno, $105.
13. Hughson & Hall, $70.
14. Hughson & Hall, $85.50.
15. H. Joseph, Livingston, $70.
16. C. A. Sample, Fresno, $80.
17. H. Joseph, Livingston, $70.
18. Wm. Bernstein, Hanford, $80.
19. Geo. W. Hall, Fresno, $90.

CONSIGNMENT OF D. H. FORNEY

20. C. E. Dack, Fresno, $105.
21. J. A. Jones, Caruthers, $85.
22. Hughson & Hall, $75.
23. F. C. Morris, $90.
24. F. C. Morris, $80.

CONSIGNMENT OF THOS. CAESAR & SON

25. Hughson & Hall, $95.
26. A. Zurlingen, Chowchilla, $80.
27. F. C. Morris, $110.

CONSIGNMENT OF E. S. MYERS & SON

29. M. D. Moore, Raisin City, $80.
31. C. E. Johnson, Turlock, $130.

CONSIGNMENT OF E. R. EICHNER

32. Hughson X. Hall, $195.
33. W. Bernstein, $145.
34. H. A. Johansen, Fresno, $140.

CONSIGNMENT OF H. BARKEMA

35. W. C. Ficklin, Fresno, $105.
36. A. Buckland & Son, Fresno, $115.
37. A. Buckland & Son, $75.

CONSIGNMENT OF C. W. McCALLISTER

38. A. Zurlingen, $60.
39. A. Zurlingen, $60.

CONSIGNMENT OF WM. BURCHARD

41. Mrs. C. M. Clark, Fresno, $145.
42. J. H. Westrup, Clovis, $100.
43. Hughson & Hall, $95.

CONSIGNMENT OF W. L. CHAISSER

44. A. Zurlingen, $65.
45. C. E. Giles, Sanger, $55.

CONSIGNMENT OF J. W. JONES

46. Mrs. Annie Donders, $145.
47. M. D. Moore, Raisin City, $135.

CONSIGNMENT OF C. E. DACK

48. H. Joseph, Livingston, $120.
49. Mrs. C. M. Clark, $75.

CONSIGNMENT OF IRA T. MASON

50. Carl W. McCallister, Fresno, $225.
51. Mrs. F. W. Wright, Selma, $145.

CONSIGNMENT OF G. W. PFOST

52. A. Zurlinger, $85.

CONSIGNMENT OF VERN FULLERTON

53. M. Bassett, Hanford, $145.

CONSIGNMENT OF H. N. ASKOV

54. W. A. Snelson, Chowchilla, $125.

CONSIGNMENT OF A. J. VAN CLEEF

55. E. E. Lapelle, Caruthers, $165.

EXTRA

Boar pig—H. Joseph, $55.
Boar pig—L. Schramm, $27.50.

X X X

CROSS BROS.

Merced, Calif:

We are establishing a herd of exclusively big type Poland-Chinas. We have drawn on many of the leading herds for our foundation sows. We have a son of Golden Gate King, the phenomenal sire of A. D. Severe. Negotiating for the purchase of a son of one of the greatest Poland-China sires in America.

We will soon be in a position to supply foundation stock of real

Big Type

Poland-Chinas

Where the BIG ONES Are Bred

My big type Poland Chinas are found in nearly every county in the state. Model Fellow, a boar that has accomplished great things for the breed, came from my herd. Present herd boar Cantrall's Ideal by Big Joe. He has been mated with such sows as Model Lady, an 850 pound sow by Long Model; Blue Valley Mollie by Blue Valley Again, and others of equal quality.

Such matings suggest why my Poland-Chinas are in such strong demand by breeders and farmers.

A few outstanding spring pigs of both sexes that I will price reasonable. Complete description on request.

NATE HAUCK

Big Type
Poland Chinas

ALTON
Humboldt Co., Calif.

Eighth Semi-Annual Sale

of

Kings County Poland-China Breeders Association

Saturday, October 11, 1919

80 BRED SOWS, GILTS, BOARS

Selected from the leading herds of Kings County where the best Poland-Chinas are bred.

For Catalog address:

Fred D. Ross, Secretary.

Ben. A. Rhoades, Los Angeles, Auctioneer.

Two Matchless Sires

Where will you find, in one herd, two such matchless sires as

Matchless Big Boy

by Big Bob Orange, one of the best sons of the noted BIG BOB ever brought to the West.

Lakeside Defender

by Chiefs Defender's Choice whose litter mate sold for $1200 in the Meharry sale.

We have a grand lot of big type sows, a recent addition being a junior yearling gilt from the Glover herd, bred to the world's famous boar, Liberty Bond.

No herd can offer greater possibilities in young stuff. We sell seven boars and two gilts in the Lodi sale, September 19th.

Lakeside Stock Farm

GEO. V. BECKMAN & SONS

LODI CALIF.

Top Sale of the Season

Bassett, Crawshaw and Ross

Combine to Sell

Tuesday, October 4th, 1919

75 Poland-China Bred Sows and Herd Boars

The greatest assemblage of the best blood produced in Poland-chinadom.

For Catalog address:

Fred D. Ross, Secretary, Hanford, Calif.

Ord L. Leachman, Auctioneer.

Such Matings Will Sell

CHOICE QUEEN, a daughter of the highest priced POLAND-CHINA sow in California, bred to MADERA MODEL, a son of the grand champion sow at the P. P. I. E.

BUSTER'S SUPREME WONDER, a daughter of CALIFORNIA JUMBO BUSTER, bred to that famous son of THE JANKEE, THE YANKEE, JR. Others as good. Two sow pigs and two boar pigs ready for shipment now. Full description on request.

WALTER C. FICKLIN Route A Fresno, California

BUY YOUR

Poland China Boar or Bred Sow

at the

San Joaquin Co. Poland China Breeders' Association Sale

LODI, Friday, Sept. 19th, 1919

35 Young Boars - all Tops

25 Bred Sows and Gilts

Farmers

this is the time of year when you want good boars. For your convenience we will sell 35 in this sale, thus saving you time and trouble in visiting numerous herds to find what you want. The kind you will buy will be in this sale.

BREEDERS, a number of these boars will make profitable investments. There are a number of real herd boars among them.

The quality of the offering is indicated by the character of the consignors—YOUNG & CLARK, GEO. V. BECKMAN & SONS, J. F. LEHMAN, EUGENE MINER, JOHN HAGEL, N. K. HORAN, J. E. STEELEY, LANGHORST BROS., J. W. WAKEFIELD, YOUNG & BARTON.

In this sale you will find the blood of such noted boars as: MAJOR HADLEY WONDER, grand champion at the 1917 State Fair; MATCHLESS BIG BOB, one of the best BIG BOB boars in the West; BIG BONE BOB, a 1000 pound boar that is a real sire; GOLDEN STATE KING, one of the best sires on the coast, and BIG URSUS, the half ton kind with quality.

Remember the Date and Plan to be There.

San Joaquin County Poland China Breeders Ass'n.

J. F. LEHMAN, Pres. S. W. BECKMAN, Sec'y.

For Catalog address the Secretary.

Ord L. LEACHMAN, Auctioneer.

King Morco Alcartra 176000

Sire: Segis Pontiac De Kol Burke 97472

Dam: Tilly Alcartra 123459

His dam and sire's dam average:
Two Years: Butter 2289.00 lbs. Milk 59,342.2 lbs.
One Year: Butter 1203.68 lbs. Milk 30,750.6 lbs.
Seven Days: Butter 36.52 lbs. Milk 813.1 lbs.

His Dam—
TILLY ALCARTRA 123459

One Year: Butter 1332.25 lbs. Milk 33,424.80 lbs. Six Years: Butter 6141.36 lbs. Milk 156,776.1 lbs. Seven Days: Butter 40.78 lbs. Milk 783.7 lbs. World's record for milk one to six years. Only cow that has made over 1100 lbs. butter three different years; only cow that bas made over 1000 lbs. butter four different years; only cow that averages over 1000 lbs. butter for six years; only 40 lb. cow that has made over 1300 lbs. butter in one year.

His Sire's Dam—
RIVERSIDE SADIE DE KOL BURKE 70708

Two Years: Butter 2065.29 lbs. Milk 54,808.2 lbs. One Year: Butter 1085.13 lbs. Milk 28,826.4 lbs. Seven Days: Butter 32.29 lbs. Milk 902.1 lbs. One daughter with 954.23 lbs. butter in one year; another with 885.72 lbs. butter in one year. One granddaughter with 932 lbs. in one year as a senior 2 year old, another with 851 lbs. in one year as a junior 2 year old.

King Aaggie Mead 221694

Sire: King Mead of Riverside 50290

Dam: Aaggie Acme of Riverside 93957

He is full brother to Aaggie Acme of Riverside 2nd, who holds the world's strictly official record for butter in one year. Her Records:
Two Years: Butter 2426.88 lbs. Milk 44,267.3 lbs.
One Year: Butter 1331.78 lbs. Milk 24,690.0 lbs.
Seven Days: Butter 35.68. lbs. Milk 627.3 lbs.

His Dam—
AAGGIE ACME OF RIVERSIDE 93957

Two Years: Butter 1861.98 lbs. Milk 35,387.4 lbs. One Year: Butter 1053.14 lbs. Milk 20,354.8 lbs. Seven Days: Butter 28.35 lbs. Milk 558.1 lbs. Dam of the world's record cow Aaggie Acme of Riverside 2nd: Two Years: Butter 2426.88 lbs. Milk 44,267.3 lbs. One Year: Butter 1331.78 lbs. Milk 24,690.0 lbs. (World's strictly official one year butter record). Granddam of Miss Aaggie Acme Burke: Seven Days: (at 2 yrs.) Butter 26.18 lbs. Thirty Days: (at 2 yrs) Butter 106.53 lbs. This heifer now on yearly test promises to make well up to 1000 lbs. butter in one year with first calf.

His Sire's Dam—
DE KOL OF VALLEY MEAD 51218

Seven Days: Butter 25.01 lbs. Milk 563.9 lbs. Dam of DE KOL OF VALLEY MEAD 2ND: Two years: Butter 1987.98 lbs. Milk 38,035.7 lbs. (World's record for 2 yrs. butter at 3 and 4 yrs. when made). One Year: Butter 1011.71 lbs. Milk 20,326.4 lbs. (At 4 yrs.) DE KOL VALLEY MEAD 8D—One Year: Butter 845.11. Milk 19,690.4 lbs. DE KOL OF VALLEY MEAD 4TH—One Year (at 2 yrs.) Butter 707.66. Milk 15,987.7. Granddam of Miss Valley Mead De Kol Walker, 1113.58 at 3 years.

The World's Yearly Reco

The yearly records of milk and butter producti and heifers in this herd are not closely approa breed in the world, and that broad claim is bac totals compiled from the Holstein-Friesian B the Holstein-Friesian Association of Ameri

149 Yearly Records in this Herd Sho of 2,605,217.1 Pounds Milk, a

8 records average over 1200 pounds butter in one year.
20 records average 1149.33 pounds butter in one year.
38 records average 1002.25 pounds butter in one year.
73 records average 901.04 pounds butter in one year.
123 records average 802.99 pounds butter in one year.

Some Notable Individuals and Gro

The first cow to make over 28000 po
The first cow to make over 30000 po
The only cow to make over 33000 po
The only cow to make over 63000 po
The only cow to make over 93000 po
The only cow to make over 120000
The first two cows to make over 5000
The only 40 pound cow with over 130
The only cow that has made over 11
The only cow that has made over 100
The only cow that averages over 10
The only 1100 pound cow that has tw
above 1100 pounds butter in one year
The only cow that made 25 pounds but
that has a daughter and granddaughte

Go over the above records of wonderful dairy produ relation to wha

In the process of our yearly test work we have learned the producing abilities of the various families within our herd more thoroughly than would be possible under any other method.

We have been guided in our matings and selections by the figures which the Babcock test and the scales have shown us, coupled with a full measure of attention to type, vigor, and reproductive qualities. In our breeding operations we have never for a moment lost sight of the fact that the function of a dairy cow is not to produce largely for 7 days or 30

Link Up Your Own He

The breed families that have made these wonderful production records in our herd have outshown in the show ring, outsold in the sales ring, and outproduced in the production lists, all other breed fam-

Our Four Herd Bulls

are all bred in the very strongest lines of th remember that they are being mated with t similar families. From these matings we a from the highest class herd bull for a breedi dairy cows.

Breeders

The demand for our top bulls is such that they rarely reach service age on our farm. If interested in a top-notch sire it would be well to secure information on our present matings and bull calves.

A. W. Morris &
Woodland

reatest Herd
'd Holsteins

made by registered Holstein-Friesian cows
d by any other herd of dairy cattle of any
up by the following figures, which are
Book, the official record of production of

the Tremendous Total Production
113,129.28 Pounds Butter

he entire 149 records average 759.25 pounds butter
nd 17464.5 pounds milk in one year.
ncluded in the 149 records averaged above are 52
ecords made by 2 year old heifers with first calf, the
2 averaging 639.97 pounds butter in one year.

s among these Record Makers:

s milk in one year
s milk in one year
s milk in one year
s milk in two years
s milk in three years
ds milk in four years
unds milk in two years
unds butter in one year
ounds butter three times
ounds butter four times
unds butter for six years
ughters and a granddaughter each

n 7 days eight months after calving
vith like records

on again carefully, and then consider them in to follow

ays or six months and then quit, but to produce a
rge volume of milk and butter fat throughout a
ng lactation period and be able to drop a calf of
reater dairy inheritance than her own.
onsider then that the fabric of our breeding herd
strongly woven in the families that we know to
e most productive and reproductive, that through
ur years of test work and study of matings we
ave removed as much as possible of the guesswork
breeding, and that the breeding animals we offer
oday represent the families that have made the
emendous records noted above.

With These Winners

ies ever developed in the west, and they have done
ese things strictly upon their merits as dairy pro-
ucers and breeding animals.

own on These Pages

ngest families we have yet developed, and
st females we have bred and developed in
eeding individuals that will fill any need,
erd, to the bull fit to head a herd of good

Dairymen

ou can secure from this herd dependable bulls,
red in the lines of our biggest producers, and at
rices will within their value. Come and see us or
rite your needs.

ons Corporation
California

Sir Aaggie De Kol Acme 185724

Sire: Aralia De Kol Pontiac Segis 112077

Dam: Aaggie Acme of Riverside 2nd 164167

His three nearest dams average:
Two Years: Butter 2127.28 lbs. Milk 43,555.7 lbs.
One Year: Butter 1175.74 lbs. Milk 24,378.2 lbs.
Seven Days: Butter 31.25 lbs. Milk 642.5 lbs.
His son sold for $11,000.00 at Philadelphia in June.

His Dam—
AAGGIE ACME OF RIVERSIDE 2ND 164167
Two Years: Butter 2426.88 lbs. Milk 44,267.3 lbs. One Year: (Strictly official) Butter 1331.78. Milk 24,690. (World's official butter record for one year.) Seven Days: Butter 35.23 lbs. Milk 627.30 lbs. Dam of Miss Aaggie Acme Burke who made 26.18 lbs. butter in seven days, 106.53 lbs. in 30 days at 2 yrs., and promises to make around 1000 lbs. butter this year with first calf.

His Sire's Dam—
ARALIA DE KOL 55194
Two Years: Butter 2093.01. Milk 51,012.6 lbs. One Year: Butter 1142.32. Milk 28,090.0 lbs. (World's milk record when made.) Seven Days: Butter 30.14. Milk 742.30 lbs. She has one daughter with a strictly official record of 1215 lbs. butter in one year, another with semi-official of 1100 lbs., a granddaughter with 1161 lbs. butter in one year, and a granddaughter that made 932 lbs. butter in one year as a 2 year old with first calf. A son of this heifer sold for $11,000 at Philadelphia in June. She is the only 1100 lb. cow that has two daughters and a granddaughter above 1100 lbs.

Sir Aaggie De Kol Mead

Sire: Sir Aaggie De Kol Acme 185724

Dam: Miss Valley Mead De Kol Walker 250936

Five of his seven nearest dams average:
Two Years: Butter 2040.75 lbs. Milk 41,537.9 lbs.
One Year: Butter 1130.50 lbs. Milk 23,087.4 lbs.
(Including his dam's 2 and 3 year old records, one granddam's 3 and 4 year old records, and one granddam's 4 year old record.)
His seven nearest dams average:
Seven Days: Butter 30.54 lbs. Milk 626.3 lbs.

His Dam—
MISS VALLEY MEAD DE KOL WALKER 250936
Two Years: Butter 1903.95. Milk 38,966.70. (Record made at 2 and 3 years, both short years because of calving within 12 months of previous freshening.) One Year: (At 3 yrs.) Butter 1113.58. Milk 21,975.8. (Second highest butter record in class when made.) Seven Days: (At 3 yrs.) Butter 36.81 lbs. Milk 688.60. One of the greatest heifers of the breed. Won California Dairy Cow Competition over all ages and breeds. Broke world's records in 3 months after calving divisions both as 2 and 3 year old.

His Sire's Dam—
AAGGIE ACME OF RIVERSIDE 2ND 164167
Two Years: Butter 2426.88 lbs. Milk 44,267.3 lbs. One Year: (strictly official) Butter 1331.78. Milk 24,690. (World's official butter record for one year.) Seven Days: Butter 35.28 lbs. Milk 627.3 lbs. Here is one of the best individuals and producers of the breed. Her first daughter to freshen as a junior 2 year old made 26.18 lbs. butter in seven days, 106.53 lbs. in 30 days, and is the heaviest milking 2 year old we have yet bred. She is now on yearly test and promises to make well up to 1000 lbs. butter this year.

Holstein Comment

R. F. Guerin, Visalia, has an unusually choice lot of registered Holstein heifers just coming to milking age. Most of these are sired by Sir Veeman Korndyke Pontiac, 30-pound son of Sir Veeman Hengerveld. One of the first of them to freshen made over 20 pounds butter in seven days as a junior two year old, and there are many others fully as promising. One of the star attractions of the herd is the $3950 cow K P Tola, who is a 33.98 pound daughter of King of the Pontiacs. The herd sire is King Sadie Vale Idyl Segis, son of King Korndyke Sadie Vale 27th and the 35 pound state record junior four-year-old, K P Idyl Segis. From a small beginning, and with good management, Mr. Guerin has built up one of the most successful western herds. We recollect offhand that in three public sales he has made sales aggregating something over $42,000 and believe that he will concede that he has the best bred and most promising lot of heifers he has ever owned right on the ranch today. One strong factor in this success is the fact that good herd bulls have always been selected, an effort having been made to have each succeeding head of the herd better than the one before.

R. C. Sturgeon, Tulare, is making substantial progress with his herd of registered Holsteins. The beginning of official testing in the herd has shown some satisfactory records, including a 19 pound junior two-year-old, and several more good ones may be looked for during the coming season. The $3200 head of the herd, Segis Pontiac Abbekerk, is developing beautifully and is growing into a flash fellow of great size and quality. He is by Segis Pontiac De Kol Burke, one of whose daughters sold at Philadelphia for $11,200 last June. His dam is Changeling Tidy Abbekerk Gem, who has one record above 35 pounds in seven days, and she made over 34 pounds at the previous freshening. His first calves are choice, and his daughters can be expected to become great producers.

T. J. Gist & Sons, Tulare, have a well bred herd of registered Holsteins that rank among the leaders in the San Joaquin Valley. There are many cows and heifers with creditable official records in the herd, and more will be placed on test during the coming season. Their herd is headed by King Sadie Vale Rose, a son of the great King Korndyke Sadie Vale and out of the great producing cow Queen Rose Paul who has several records above 26 pounds butter in seven days, her last one above 27 pounds. He has developed noticeably within the past year, and his calves are a well marked, straight lot of high promise.

Things just naturally grow at Jane Garden Farm, owned by Fred W. Kiesel, Sacramento. The ranch produces tremendous crops of alfalfa and corn, and these are in turn helping to a wonderful crop of registered Holsteins. From a well selected foundation herd of females, mated with the three outstanding bulls, Sir Aaggie De Kol Acme, Prince Gelsche Walker Korndyke, and King Korndyke Pontiac, a herd of unusual merit is being developed. One of the big factors in the herd is the growthiness of the young things, and while the real program of official testing has not yet gained full headway in the herd, yet the daily milk sheets and the official records that have been made indicate that no mistake has been made in the selection of individuals and blood lines.

Seventy-five granddaughters of Tilly Alcarta ought to be a whole herd by themselves, but that number is only part of the herd of registered Holsteins owned the J. S. Gibson Company, Williams. These seventy-five are all daughters of Prince Alcarta Korndyke, son of Tilly Alcarta, who has for some years headed the Gibson herd. Two of them are now going at the rate of around 1000 pounds butter, after having made over 30 pounds and over 31 pounds butter in seven days respectively, at the beginning of their lactation periods as senior four-year-olds. It is likely that a substantial number of official records will be reported from this herd during the coming season.

James McGillivray, Sacramento, now has one of the largest herds of registered Holsteins on the Pacific Coast, right up around 350 head. Official testing will again be taken up in the herd this season, and the material is most promising. Three bulls of unusually rich breeding now head the herd, Yolo Valdessa Hengerveld, a 30 pound son of King Valdessa; Prince Echo Sylvia Segis, a grandson of May Echo Sylvia; and Rag Apple Walker Korndyke, a grandson of Rag Apple Korndyke 8th. James Sullivan recently became herdsman in the McGillivray herd.

The tremendous records of milk and butter production made in the herd of registered Holsteins owned by A. W. Morris & Sons Corporation, Woodland, form one of the most interesting chapters of modern dairy history. The Morris firm will always live in dairy history as a pioneer in yearly record development, and they have consistently practiced what they have preached, that the yearly record is the truest indication of a cow's ability to produce. Because they have followed their original ideas so closely, they have today what is unquestionably the greatest herd of yearly record cattle in the whole world, and practically all of the cattle are of their own breeding. They have found it possible even to breed their own herd bulls, not entirely from choice in every instance perhaps, but rather from necessity, for it has not been possible for them to go outside of their own herd and secure bulls of greater yearly record backing than they themselves were producing. Finally they have developed certain families within their herd to a point of certainty that makes bulls of their own breeding within these families the logical bulls to head their own herd. The four bulls at present in service represent the very best families they have developed to date, and probably never in the history of their breeding operations have they had so many outstanding heifers approaching milking age. All of the young stock in the herd is raised on pasteurized milk, a practice that has been followed for several years in the herd, and a great deal of attention is given to raising the young stock under the most healthful conditions.

H. E. Spires, Caruthers, has at the head of his herd a son of the great King Segis Pontiac Count, whose daughters have been breaking records consistently in Senator Hackney's herd in Minnesota. To mate with him Mr. Spires has a herd of well selected females of approved breeding, and the herd is gradually growing in numbers. The presence of this richly bred sire at Caruthers means much to that good dairy section.

H. H. Sisson of Sunnybrook Ranch, Willits, writes: "We have recently bought from Broad Meadows Farms, Pawling, New York, a remarkably well bred bull calf, a son of The Mighty Monarch, Mr. Brady's famous herd sire. The sire of The Mighty Monarch is King of the Pontiacs, and his dam, Segis Hengerveld Fayne Johnson, who recently sold at the Cabana sale for $40,000, the highest price ever paid for a dairy cow at public auction, and who is half sister to Rag Apple the Great, who sold for $125,000 at the same sale, he being the higest priced bull in the world. The grand dam of The Mighty Monarch is Segis Fayne Johanna, the first cow in the world to make 50 pounds of butter in seven days. The Mighty Monarch's dam has a seven day record of 47.35 pounds of butter and 699.1 pounds of milk; his grand dam's record is 50.68 pounds of butter and 730.8 pounds of milk in seven days; 95.42 pounds of butter, 1459.1 pounds of milk in 14 days, and his great grand

Continued on Page 263

Willowmead Holsteins

325 Registered Individuals of Choice Breeding

Headed By

Yolo Valdessa Hengerveld 184353

His Sire: KING VALDESSA, whose dam was the first cow to make over 41 lbs. butter in 7 days and over 164 lbs. in 30 days. His sire is out of K P Pontiac Lass, the first cow to make over 44 lbs. butter in 7 days and over 171 lbs. in 30 days.

His Dam: FINDERNE HENGERVELD SOLDENE, with official records of 30.44 lbs. butter from 537.6 lbs. milk in 7 days as a senior 4 year old, she a granddaughter of Hengerveld De Kol and out of a daughter of De Kol 2nd's Butter Boy 3d.

YOLO VALDESSA HENGERVELD carries some of the very greatest producing and transmitting blood of the breed on both sides of his pedigree, is almost white in color, and an individual of high excellence. The records of his dam, his sire's dam, and his sire's granddam average:

Butter 30 days	149.68 lbs.
Milk	2536.20 lbs.
Butter seven days	38.83 lbs.
Milk	606.00 lbs.

Prince Echo Sylvia Segis 247369

His Sire: CHAMPION ECHO SYLVIA PONTIAC, who is by a son of the first 44 lb. cow, K P Pontiac Lass, and is out of the world's record cow May Echo Sylvia, the only cow to make over 1000 lbs. milk in 7 days, and she the dam of the $106,000.00 bull Carnation King Sylvia.

His Dam: PRINCESS STELLA SEGIS, who who made 29.88 lbs. butter from 507.2 lbs. milk in 7 days as a senior 4 year old, she a daughter of King Pieter out of a 31.70 lb. daughter of King Segis.

PRINCE ECHO SYLVIA SEGIS is a splendid individual, evenly marked in color. No better blood lines have yet been developed in the black and white breed, large milk production with desirable per cent of butter fat appearing consistentiy on both sides of his pedigree. The seven nearest dams of Prince Echo Sylvia Segis average:

Butter seven days	31.75 lbs.
Milk	582.55 lbs.
His fourteen nearest dams average:	
Butter seven days	29.45 lbs.

Rag Apple Walker Korndyke 266362

His Sire: RAG APPLE KORNDYKE COLANTHA, who is by the $60,000 bull Rag Apple Korndyke 8th, out of Colantha Pietertje Korndyke, a 30.80 lb. junior 4 year old daughter of Pontiac Korndyke.

His Dam: ABBY HARTOG CLOTHILDE 2ND, a 27.16 pound 4 year old daughter of Admiral Walker Gelsche and the great 31.39 lb. producing and breeding cow Abby Hartog Clothilde. She has five A. R. O. daughters, her dam has five A. R. O. daughters, and her sire's dam has five A. R. O. daughters.

RAG APPLE WALKER KORNDYKE is the youngest of our three herd sires, and promises to develop into an individual of great merit. Five of his seven nearest dams average:

Butter seven days	31.30 lbs.
Milk	578.28 lbs.

Five of his seven nearest dams have produced a total of 22 A. R. O. daughters, six of which have official records above 30 lbs. butter in seven days.

These three richly bred bulls are being mated in this herd with females of most substantial breeding, a large number of which are daughters of Dutchland Sir Korndyke Colantha, who is by Dutchland Sir Pontiac Rag Apple, full brother to Pontiac Clothilde De Kol 2nd, the first cow to produce over 37 lbs. butter in seven days and over 1270 lbs. in one year, and to the former world's record cow Pontiac Rag Apple, the dam of Rag Apple Korndyke; daughters of King Pontiac Ruby Burke, proven son of King of the Pontiacs; daughters of King Mead of Riverside, whose daughters include the world's record cow Aaggie Acme of Riverside 2nd; and to daughters of other sires of the best breeding.

We can supply you with a good bull to improve your herd at a price you can afford to pay. Come and see the herd or write your wants.
The farm is two miles south of Sacramento City limits on paved Freeport Road. Go straight south on Twenty-first Street out of Sacramento.

James McGillivray
Sacramento, Calif.

COMBINATION SALE

Henderson Company
Sacramento, Calif

Bonita Stock Farm
Lodi, Calif.

65 Registered Holsteins

Stockton, California, Thursday, September, 18, 1919

HENDERSON COMPANY herd at present contains 333 head of registered Holsteins of splendid breeding, and the herd has now reached a size where it is possible to offer surplus breeding stock regularly.

BONITA STOCK FARM herd now numbers 160 head of registered Holsteins, which is about the carrying capacity of the ranch, and from now on regular offerings of breeding stock will be made.

The present offering from both herds contains a desirable lot of young cows and heifers, among them some of the heaviest milkers in the herds, EVERY FEMALE OF BREEDING AGE IN THIS SALE IS EITHER FRESH OR WELL ALONG WITH CALF TO A GOOD SIRE. This fact makes it an especially good sale for the buyer who wants to start with a few head of substantially bred, young cows or heifers in calf to some of the greatest bulls in service in California.

Many of the Females are Bred to these Four Great Bulls

King of the Black & Whites

The first bull whose seven nearest dams averaged over 30 pounds butter in seven days, six of them 30 pound cows, and four of them with 30 pound daughters that have produced 30 pound daughters, each with above 126 pounds butter in 30 days.

KING OF THE BLACK & WHITES has the largest list of A. R. O. daughters of any bull on the Pacific Coast. One of his daughters recently made over 800 pounds butter from over 20,000 pounds milk in one year as a junior 2 year old, and another made over 30 pounds butter in seven days.

A daughter of KING OF THE BLACK & WHITES sold for $2000.00 in the last Philadelphia sale and her heifer calf sold for $2100.00. There are now 27 daughters of this great sire in the Henderson herd and it is not the intention of the owners to offer any of them for sale. They are of excellent type, with a quality of udder that is an outstanding characteristic.

King Pontiac Segis Inka

A son of the great bull King of the Pontiacs, who has more 40 pound daughters, more 30 pound daughters, and more A. R. O. daughters than any other sire.

The Dam of KING PONTIAC SEGIS INKA is Segis Inka 3d, a daughter of the great sire De Kol 2nd's Butter Boy 3d and Segis Inka whose daughter A & G Inka McKinley is the dam of King Segis, one of the greatest sires the breed has ever produced.

As an index to the excellence of the nick in this breeding it is significant that K P Segis Inka, a daughter of King of the Pontiacs and Segis Inka, produced over 26 lbs. butter in seven days and over 811 lbs. in one year as a senior 2 year old.

The get of KING PONTIAC SEGIS INKA are unusually satisfactory. Both his sons and daughters show an unusual degree of quality, and dairy type that is both pleasing and promising. A large number of his young daughters are now in the Henderson herd where they will be given an opportunity to make records as they freshen.

King Lillian Walker Segis

A son of King of the Black & Whites, our senior herd sire. His dam is Lillian Walker Pietertje 2nd, who made 24.69 lbs. butter in seven days as a senior 4 year old, she by King Segis and out of the 30 pound cow Lillian Walker Pietertje, whose dam is the 30 pound cow Beauty Pietertje, daughter of the famous foundation cow Prilly.

The breeding of KING LILLIAN WALKER SEGIS combines closely the great producing ancestry of King of the Black and Whites with the blood of King Segis and the richest direct line to Prilly, one of the foremost transmitting cows of the breed.

The calves from KING LILLIAN WALKER SEGIS are among the best in the Henderson herd, and his daughters look fully capable of making a large place for themselves in the production lists when they come in milk.

Supreme Glista Pietje

A bull of superb individuality and rich breeding. He is by Woodcrest Pietje Ormsby, whose sire is a son of Pietje 22nd, 31.62 lbs. butter in seven days, 566.68 lbs. butter in six months, the highest records ever made by an imported cow.

The dam of SUPREME GLISTA PIETJE is Glista Englantine, who has twice made over 32 lbs. butter in seven days, she being the full sister to Glista Erica with records of 35.29 lbs. butter and 32.65 lbs. butter to her credit in seven days in to successive lactation periods. She is also three-quarter sister to Glista Ernestine, one of the three cows of the breed to have five seven day records averaging over 33 lbs. butter in seven days.
ter in seven days.

SUPREME GLISTA PIETJE is called "The King of High Testers" by his owners, the butter fat test of his nearest female relatives ranking at the very top. He heads the Bonita Stock Farm herd where a large number of his young daughters are coming on and will be tested as they freshen.

Bulls For The Breeder and Dairyman

There will be an excellent selection of young bulls in this sale, by the great herd sires listed above, and out of dams of sound breeding, type, and production. Among them is the show bull MODEL DOMINO GLISTA, a richly bred bull ready for service. There is also a son of King of the Black & Whites out of a 26 pound dam, good enough to head a herd of purebred females. His dam is one of the best cows in the Henderson herd and should increase her present record.

Every animal in this sale is positively guaranteed to be a breeder

No animal in this sale is tuberculin tested

Sale will be held at DARBY'S BARN, East Lafayette and Pilgrim Sts., Stockton, Calif., and will begin promptly at 10:00 A. M.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneers: Col. Ben. A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare

Sunnyside Holsteins

Headed by

King Sadie Vale Idyl Segis

His sire: KING KORNDYKE SADIE VALE 27TH, whose sire is King Korndyke Sadie Vale, the only 40 pound bull with a 40 pound daughter and a 40 pound sister. The three nearest dams of King Korndyke Sadie Vale 27th average 34 pounds butter and 591.7 pounds milk in seven days, 132.6 pounds butter and 2464.6 pounds milk in 30 days.

His dam: K. P. IDYL SEGIS, 35.57 pounds butter in seven days, 132.13 pounds butter in 30 days as a junior four year old. She is by the greatest A. R. O. sire of the breed, King of the Pontiacs, and is out of a daughter of Sir Gelsche Walker Segis who has two daughters above 38 pounds butter in seven days.

Five of the seven nearest dams of KING SADIE VALE IDYL SEGIS average 33.08 pounds butter in seven days, 128.96 pounds in 30 days.

K. P. TOLA, the 33.98 pound daughter of King of the Pontiacs now in Sunnyside Herd.

Besides daughters of such sires as King of the Pontiacs, King Morco Alcartra, King Walker Segis, and King Korndyke Sadie Vale 27th, this herd is made up largely of daughters of Sir Veeman Korndyke Pontiac, 30 pound son of Sir Veeman Hengerveld. His heifers are just now coming in milk and one of them recently made 20.32 pounds butter in seven days as a junior two year old.

WE HAVE SOLD MOST OF THE SONS OF SIR VEEMAN KORNDYKE PONTIAC BUT NOW OFFER TWO GOOD ONES, BOTH READY FOR SERVICE, AND BOTH WELL GROWN, GOOD INDIVIDUALS.

Come and see them or write for prices and pedigrees.

R. F. GUERIN, Owner **Visalia, Calif.**

King Sadie Vale Rose

Heads Our Herd

His Sire: KING KORNDYKE SADIE VALE, generally conceded to be one of the greatest sires ever produced by the black and white breed. He is the only sire having a 40 lb. dam, a 40 lb. daughter, and a 40 lb. sister. He already has seven daughters with records from 30 to over 40 lbs. butter in 7 days, and has a large number yet to freshen in good herds.

His Dam: QUEEN ROSE PAUL, with official records of 27.98 lbs. butter from 533.50 lbs. milk in 7 days, and her dam is the great producing and transmitting cow Highland Rose Paul, who made 32.41 lbs. butter from 550.2 lbs. milk in 7 days and has 5 A. R. O. daughters.

The three nearest dams of KING SADIE VALE ROSE average:

Butter 7 days	34.00
Milk	591.70
Butter 30 days	132.62
Milk	2464.60

In the first three generations of his pedigree we find the great sire King Segis, the first 30 lb. cow of the breed, Sadie Vale Concordia, and that wonderful producing and transmitting foundation cow Pontiac Clothilde De Kol 2nd, the first cow to make over 37 lbs. butter in 7 days and over 1200 lbs. butter in one year.

KING SADIE VALE ROSE is siring calves of unusual promise and in our herd is being mated with highly bred heifers and cows with official records up to over 31 lbs. butter in 7 days. Come and see us or write your needs when you want a good young bull.

T. J. Gist & Sons

Holberk Stock Farm

Tulare, California

Average Costs in University of California Dairy Herd

The dairy division of the University of California has recently issued some figures covering the cost of butter fat production, obtained from records kept on eight cows in the university herd. The figures are not intended to be representative of or applicable to all cows, by any means, or to be "bomb proof." Many cows are making decidedly better showings, but at the same time a large number are not doing so well. The figures are not given out as indicating what might be expected of the average California cow, they simply indicate the performance of eight average cows in the university herd. In view of the fact that the average production of the eight cows was 324.6 pounds fat, and that the average production for California cows is less than 200 pounds fat, and that with production of 324.6 pounds fat a profit of only $8.50 could be shown, after making proper charges, it would seem that the charges of profiteering among dairymen can hardly be established by the facts. The figures should also demonstrate to the average dairyman the necessity for raising the production of his herd through the use of good bulls, a method that is certain.

With an average production of 324.6 pounds of fat and a feed charge of $152.57 per cow, the average feed cost of a pound of fat was 47 cents and the average milk production of 8527 pounds had a feed cost of $1.78 per hundred weight.

The following tables show the detailed method used for arriving at the average cost of maintaining the cows for a year. Charging all items and crediting her with the butter fat and milk produced and placing a value of $10.00 on the calf, the net profit was $8.50 per cow. It should be pointed out that the cow was not given credit for the manure.

Average cow valued at	$150.00	
Interest at 6 per cent on $150.00 cow	9.00	
Depreciation on cow	5.00	
Loss from death—failure to breed	15.00	
Interest on money invested in buildings	4.00	
Depreciation and wear on equipment and buildings	5.00	
Service of bull	3.00	
Feed of cow when dry	12.00	
Labor	45.00	
Feed cost	152.00	
342.6 pounds fat @ 65c		$211.00
7500 pounds skim milk @ 50c per cwt.		37.50
Calf		10.00
Total	250.00	258.50
		250.00
Profit		8.50

The above tables are of interest to all dairymen, and while they are not representative of the better cows of the state, they at least suggest the paramount necessity for improving the quality of the average California cow.

FEED OF EIGHT COWS IN UNIVERSITY FARM HERD, 1918-1919

Name, Breed	Months in Milk	Alfalfa Hay	Silage	Bran	Barley	Oats	Linseed Oil Meal	Cocoanut Oil Meal	Molasses	Dried Beet Pulp	Cotton Seed Meal
Inka, Holstein	10½	8,224	5,115	878	609	345	72	206	98	878	142
Wopusa, Gr.-Holstein	14½	8,371	1,505	540	348	130	6	384	..	1124	111
May Rose, Guernsey	8	6,160	2,275	495	345	216	10	92	..	552	45
Antoinette, Gr.-Hol.	9	6,589	4,390	911	462	269	14	186	..	547	105
Ramona, Gr.-Hol.	11	7,967	5,398	933	492	341	16	193	..	552	93
Piet. 2d, Holstein	12	9,805	7,289	1295	788	322	58	319	38	733	183
Isabella, Gr.-Ayr.	12½	8,637	6,678	539	308	134	6	54	..	514	27
Carmen, Gr.-Hol.	13½	8,342	9,439	578	346	125	6	435	..	1193	127
Total	91.0	64,095	42,089	6169	3598	1882	188	1869	136	6093	837
Average	11.37	8,012	5,261	771	449	235	23	233	17	761	104

The following table shows the production of milk and butter fat for each of the cows and the average production for the eight:

Name, Breed	Months in Milk	Pounds Milk	Pounds Fat
Inka, Holstein	10½	10,992	406
Wopusa, Gr.-Hol.	14½	9,166	331
May Rose, Guer.	8	3,851	180
Antoinette, G.-H.	9	8,082	256
Ramona, Gr.-Hol.	11	8,506	390
Piet. 2d, Hol.	12	11,873	398
Isabella, Gr.-Ayr.	12½	7,125	320
Carmen, Gr.-Hol.	13½	8,624	316
Total	91	68,219	2597
Average	11.37	8,527	324.6

The feed charge of $152.57 was arrived at by figuring the average amount of feed consumed by each cow at the following prices:

Feed	Price Per Ton	Price Per Cwt.	Lbs. Fed	Cost
Alfalfa hay	$18.00	$ .90	8012	$ 72.11
Silage	6.00	.30	5261	15.78
Bran	45.00	2.25	771	17.34
Barley	55.00	2.75	449	12.34
Oats	55.00	2.75	235	6.46
Linseed Meal	75.00	3.75	23	.86
Cocoanut Meal	45.00	2.25	233	5.24
Molasses	35.00	1.75	17	.30
Dried beet pulp	50.00	2.50	761	19.02
Cottonseed Meal	60.00	3.00	104	3.12
Total				$152.57
Feed cost per pound of butter fat				.47
Feed cost per 100 pounds of milk				1.78

THE INTERNATIONAL BELGIAN HORSE SHOW

The rapidity with which the Belgian horse has gained popularity in all classes of draft work and especially its excellent performance in the army should make the First International Belgian Horse Show, to be held September 22 to 28 at Waterloo, Iowa, the greatest single breed horse show ever held. Another important factor which adds special significance to the show is that Belgium, stripped of her foundation stock, has become an importer instead of an exporter of the breed of horses which has made her famous. It has already been announced that a special commission from Belgium will attend the show for the purpose of purchasing stock upon which to rebuild the Belgian breed along the most approved lines in its native land.

The $5500 cash premium list offered has been increased by a number of substantial individual offers which add greatly to its attractiveness. The classifications have been carefully worked out by the show committee with the following objects in mind; First, to develop the Belgian horse industry in the most approved manner; second, to encourage the small breeder as well as the large breeder to show; third, to make the show of greatest educational value to the breeder and the general public.

The horses will be adequately housed in three new barns which will be completed by August 15. Exhibitors who are on the circuit and who do not have a fair at which to exhibit a week or ten days before September 22 are invited by the management to occupy the barns. A new judging pavilion with an arena 100 by 200 and a seating capacity of 6500

people will be ready for occupancy at the opening of the show. These buildings are being constructed as the permanent home of the International Belgian Horse Show on the grounds of the Dairy Cattle Congress which will be held on the same dates.

The judges who will pass upon the 300 head of horses that are expected to be exhibited are Samuel Bell, Wooster, Ohio; Eli Sprunger, Saginaw, Michigan; A. P. Coon, Lincoln, Nebraska. Wm. Crownover, the well known breeder, will act as superintendent of the show. The arrangements are in charge of Dr. T. U. McManus, Charles Irvine and J. H. Van Nice.

CATTLE AND SHEEP ON NATIONAL FOREST RANGES

The great live stock industry of the West is so largely dependent on the grazing lands within the national forests that the right management of these lands is of importance to every one who eats beef or mutton or wears shoes and woolen garments. A recent bulletin of the department of agriculture, "Range Management on the National Forests," by James T. Jardine, inspector of grazing, and Mark Anderson, grazing examiner, gives the results of the 14 years' experience in range management which the forest service has had since it assumed charge of the forests.

During these years the forest service has been working steadily to increase the country's supply of meat, wool and hides by developing methods of handling stock on the range which will allow as large an increase as possible in the number of sheep and cattle grazed without injury to the forests. With this bulletin as a guide, grazing can be made more uniform on different ranges, and the best principles can be put into actual practice.

Classification of the range to determine the areas best suited to the different classes of stock is the first important step toward the best use of the grazing resources. Cattle and horses use a different sort of range from sheep. Sheep relish tender, green foliage and the grains of many grasses, while cattle consume the coarse grass forage. Cattle prefer level or rolling country, and altitude makes little difference if the stock have been raised on the range. Sheep do best on smooth range and where the summers are cool. They can go from several days to several weeks without drinking, depending upon the abundance of succulent weed forage, the temperature, and the amount of rain and dew. Cattle need water oftener—at least every two days.

STUDY SHEEP ON WESTERN RANCH

Several results of importance to western sheepmen have been ascertained by experiments at the government sheep ranch near Dubois, Idaho, which has been in operation two years. Formerly it was customary for range sheep men to discard ewes which did not bear lambs when two years old. Extensive investigations by the department of agriculture have developed that such ewes are just as valuable for future breeding as those which bear lambs as two-year-olds.

Individual records are kept on the government sheep ranch relative to the weight of fleece, length of fleece, character of fleece, fineness of fiber, and mutton quality of each animal, while detailed account is maintained of the offspring of each ewe. The particular utility of the results obtained arises from the fact that the flock is handled just as are all similar bands of sheep in the hands of Wyoming stockmen.

Experiments are being conducted to develop a type of sheep more suitable to the western range conditions than the types now prevalent. It is hoped to extend this work in both mutton conformation and length and weight of fleece.

There are at present about 1500 head of pure-bred Rambouillets, Lincoln Rambouillets, Cotswold Rambouillets, Leicester Rambouillets, and Romney Rambouillets on the government ranch. Crossbreeding experiments are being conducted with all these breeds and crosses, as well as the use of pure-bred Corriedales, which have been mated with cross-bred ewes.

Sir Aaggie De Kol Acme 2nd, 221668

One of the most richly bred bulls of the Holstein-Freisian breed heads our herd

His Pedigree is an unbroken line of wonderful producing and transmitting dams and outstanding sires

HIS SIRE

SIR AAGGIE DE KOL ACME

Sired by a son of the former world's record cow Aralia De Kol, and out of the present world's strictly official yearly butter record cow Aaggie Acme of Riverside 2nd. Owned jointly by A. W. Morris & Sons, Woodland, and Fred W. Kiesel, Sacramento, in whose herds he is being given a large opportunity.

His Sire's Dam

AAGGIE ACME OF RIVERSIDE 2ND

Butter 1 year..... 1331.78
(World's record, strictly official.)
Milk 24690.00
Butter 1 year at 4 years..... 1095.10
Milk 19577.30
Butter 2 years..... 2426.88
Milk 44267.30

HIS DAM

ARALIA DE KOL 3D

Butter 1 year..... 1100.47
Milk 24554.10
Butter 1 year at 2 years..... 772.93
Milk 17509.50
Butter 2 years..... 1973.40
Milk 42063.60

His Dam's Dam

ARALIA DE KOL

Butter 1 year at 11 years..... 1142.32
Milk 28090.00
(World's record when made.)
Butter 1 year at 12 years..... 950.69
Milk 22922.60
Butter 2 years..... 2093.01
Milk 51012.60

His Sire's Dam's Dam

AAGGIE ACME OF RIVERSIDE

Butter 1 year at 11 years..... 1053.14
Milk 20354.80
Butter 1 year at 6 years..... 808.82
Milk 15032.60
Butter 2 years..... 1861.96
Milk 35387.40

Consider This Tremendous Production

Five of the seven nearest dams of Sir Aaggie De Gol Acme 2nd have two yearly records each, the other two were never run on yearly test, and those two are Juliana De Kol, former world's record 2 year old in the 7 day division and she was junior champion at the St. Louis Exposition, and Aralia the dam of Aralia De Kol.

Five of the seven nearest dams of Sir Aaggie De Kol Acme 2nd have two yearly records

Butter 1 year..... 1154.00
(Highest in world for bull of service age.)
Milk 25055.80
Butter 2 years.....2089.65
(Highest in world for bull of service age.)
Milk 44748.70

The ten yearly records made by five of his seven nearest dams total 10448.26 lbs. butter and 223743.5 lbs. milk, an average for the ten records of 1044.82 lbs. butter and 22374.3 lbs. milk, average test 3.73 per cent, and these ten records include one 2 year old record, one 4 year old record, two 11 year old records, and one 12 year old record.

We believe that no bull in the world is the superior of Sir Aaggie De Kol Acme 2nd judging him from the volume of production of his nearest dams, their proven persistent production, their large milk flow with high per cent butter fat, the splendid individuality of all of his nearest ancestors, and best of all the unusually good individuality of the calves he himself is siring.

We shall have some of his young sons to offer, out of well bred, good record dams. Write now or come and see what we have on hand. This blood has made Holstein history already and is being used extensively in the best herds in the west, not forgetting the $11000.00 son of Sir Aaggie De Kol Acme now heading two of the best herds in New York.

A few approved cows will be accepted for the service of Sir Aaggie De Kol Acme 2nd. at a fee of $100

Eldorado Herd

Alex. Whaley, Owner **Tulare, Calif.**

Sir Pietertje Ormsby Mercedes 43d

SENIOR HERD SIRE

His sire: SIR PIETERTJE ORMSBY MERCEDES, the greatest sire of yearly record daughters of any breed. Twenty-two of his daughters, most of them under mature age, average over 1000 pounds butter in one year; three have records above 1300 pounds butter in one year; eight have records above 1000 pounds butter in one year; fourteen out of his 66 A. R. O. daughters have records above 30 pounds butter in seven days; two have records above 40 pounds butter in seven days.

In the Minnesota Breeders' sale last June three of his daughters sold for over $30,000 and one sold for $65,000.

Production and show ring records establish him as the breed's premier sire of producers and show ring winners.

His dam: AAGGIE WAYNE PEEP, one of the outstanding cows of the breed.

Butter one year	1,250.35 pounds	Butter seven days	34.59 pounds
Milk one year	27,762.50 pounds	Milk seven days	657.20 pounds

She has Produced in Four Years

Milk	88,509.70 pounds	Average per year Butter	999.85 pounds
Butter	3,999.43 pounds	Average per year Milk	22,127.40 pounds

She is a full sister to Early Dawn Peep 2d, 1287.72 pounds butter from 26,204.1 pounds milk in one year; and half sister, by the same sire, to Ona Clothilde Wayne, 1,266.65 pounds butter from 27,091.5 pounds milk in one year, and Jennie De Kol Veeman Wayne, 1,003.21 pounds butter from 20,876.3 pounds milk in one year.

Junior Herd Sires

SIR AAGGIE MEAD

Sire, Sir Aaggie De Kol Acme. Dam, Aralia De Kol Mead.

His dam and sire's dam each have strictly official yearly records above 1,200 pounds, averaging 1,273.49. pounds, which can be said of no other bull.

His dam, dam's dam, and his sire's dam average 1,229.76 pounds—a world's record average.

His three nearest dams each have produced over 2,000 pounds butter in two consecutive years, averaging over 2,200 pounds, which can be said of no other bull.

Five of his seven nearest dams average 1,177 pounds butter in one year—a world record average.

Five of his seven nearest dams average 2,112.14 pounds butter in two years—a world's record average.

You can't beat this long distance ancestry.

FINDERNE SOLDENE VALDESSA

Sire, King Valdessa. Dam, Finderne Soldene Hengerveld.

His sire is a son of the first 41 pound cow and a grandson of the first 44 pound cow.

His dam, a 35.34 pound three-year-old, (World's record for heifer with first calf), is a daughter of King Hengerveld Aaggie Fayne, one-third of whose daughters have exceeded the 30 pound mark, and who is a brother to the 50 pound cow Segis Fayne Johanna.

His dam is a sister to the World's champion yearly producers of the junior three-year-old and junior two-year-old classes. Also a three-quarters sister to a 1,075 pound three-year-old.

The Health of Our Herd is Under State Supervision

We have over 200 head, including cows with yearly records up to over 1,100 pounds butter, and daughters of large yearly record cows. Also 10 cows and heifers with records above 30 pounds butter in 7 days, and a large number with records from 25 to 29 pounds butter in 7 days.

Every Female in the Herd will be Given a 305 or 365 Day Record.

Visitors Cordially Invited to the Farm.

TOYON FARM ASSOCIATION

Farm: Los Altos, California **Office: Mills Bldg., San Francisco**

HOLSTEIN COMMENT

Continued from Page 258

dam has a record of 39.42 pounds of butter and 613.82 pounds of milk at 14 years of age, making the average for these three, 45.82 pounds of butter.

"The dam of this calf is Springdale Segis Fayne, who also traces directly to King Segis, the sire of the 50 pound cow, Segis Fayne Johanna. She has a seven day record at three years of 20.44 pounds butter, 497 pounds milk. Her dam has a record of 17.84 pounds butter, 445.6 pounds milk at three years. Her grand dams have records of 32.03 pounds butter, 675.8 pounds milk and 31.22 pounds butter; and her great grand dams have records of 31.46 pounds butter, 24.35 pounds butter and 33.2 pounds butter.

"The calf is a splendid individual of beautiful conformation and nicely marked, being about three-fourths white. He weighed over 100 pounds at birth and is a strong, big boned fellow with fine straight top lines."

HOLSTEIN ASSOCIATION TO SECURE A CENSUS

The Holstein-Friesian Association of America has taken a very important step in attempting to secure a census of the living registered cattle of this breed. If it is generally complied with, and there is no reason why every owner should not answer the inquiries, it will afford a fund of valuable information in addition to the mere enumeration of the cattle.

President Aitken stated, referring to this matter of a census, in his annual address:

"The knowledge that could be gained by an accurate census of the Holstein-Friesian animals would be of inestimable value to the association in hundreds of ways. It would teach us the longevity of the breed, their years of usefulness on an average, and the number that we might expect each year from nature's production.

"I think it would add largely to the value of Holstein-Friesian animals if we knew more about their history and about the number of years of usefulness we might expect from a Holstein-Friesian cow.

"State and Holstein clubs should cooperate in this census and would find it a point of vantage in their work to be able to point out to buyers the extent of the herds of their membership."

Reports from various parts of Arizona indicate the range country to be in excellent condition, with plenty of feed and water to carry stock through the fall and winter.

"CASTLEVIEW" PLAN SHOULD PUT "BERKSHIRES ON EVERY FARM"

By J. Francis O'Connor

"Berkshires on Every Farm" has long been the slogan of the American Berkshire Association and every progressive Berkshire breeder in America. The comparatively high cost of properly developing pure bred breeding stock has put the selling price slightly beyond the reach of the average farmer. Aside from price, there is the educational feature necessary to demonstrate to the present owners of ordinary hogs the great advantages of owning pure breds. It is quite true that the pure breds are slowly but surely replacing the common hog, and it appears that this work is being accomplished through the younger men, the boys. The boys pig clubs, bred sow clubs and similar organizations have done wonders during the last few years.

It seems logical therefore to shape any modern plan of introducing pure bred hogs on the ranch along the lines of interesting the boy. The fact that the ordinary boy on the ranch possesses little or no capital makes the "Castleview" plan feasible, though it works equally well with the small rancher. The plan in detail is as follows:

A suitable number of sow pigs are selected at weaning time and developed for breeders. When four or five months old, they are placed with high school boys or others and a contract covering the following points is drawn up.

Each boy agrees to take a pig and properly feed the same until breeding time, when the animal is returned to the breeder. The boy then takes the pig home and feeds it until farrowing time, when the breeder is notified to call and check up the litter. After the pigs are weaned, the following options are given the boy.

Accept the full ownership of sow and surrender the pigs to the breeder, or

Accept the litter of pigs and surrender the sow to the breeder, or

Accept one-half ownership of sow and keep one-half of the litter, or

Sell to breeder at price per pound previously agreed upon, the one-half interest in sow and pigs. This option is a provisional one in the event of the boy finding it necessary to change residence to some other county.

The above plan gives the boy or rancher an opportunity to secure pure breds without the payment of a dollar down. It is assumed that the boys selected have access to plenty of skim milk. This plan means more and better pigs for the breeder, as the best pigs of future litters can always be purchased at mutually satisfactory prices. If the boy makes good, the news soon spreads, with the result that the breeder feels an almost immediate demand for pure bred stock. The work of interesting the boys can easily be done through the agricultural teacher in the high school. If the breeder feels inclined to offer three prizes in the shape of medals for the boys making the best showing, better results can be obtained.

L. M. Harrison, the Arizona field agent of the bureau of crop estimates, states that crop conditions August 1 were better than at any time during the season. He estimates the wheat crop this season to be 1,120,000 bushels. The condition of various crops August 1, 1919, compared with August 1, 1918, is as follows: Cotton, 93 and 95 per cent; alfalfa, 94 and 88 per cent; pasture, 103 and 77 per cent; grain sorghums, 93 and 87 per cent; beans, 90 and 85 per cent; apples, 90 and 85 per cent; peaches, 90 and 75 per cent.

TRAINING THE BOYS

The Letterman General Hospital at San Francisco is filled with a great number of boys who went across and returned either wounded or incapacitated and are now getting a grip on themselves and being restored to normal physical condition. Where desired they may take a vocational training course and are aided in every way.

One of the features of the hospital is a hospital newspaper, "Listening Post," edited and managed by the disabled soldiers who are still in the hospital. An annual of this paper is soon to be published which will contain information as to the activities at the hospital, photographs of the grounds and buildings and a complete history of the hospital service. Copies of this special will be mailed to anyone if 25 cents is sent to "Listening Post," Letterman Hospital, San Francisco, California. The proceeds are all to go to the amusement of the soldiers.

ESCALON HERD
Registered Holstein - Friesians
HEADED BY
Prince Gelsche Walker 11th 202257

His Sire: PRINCE GELSCHE WALKER, whose daughters have held more state and world's records than the daughters of any other sire yet developed in the west.
His Dam: MISS FILLED KORNDYKE, with official records of 29.67 lbs. butter from 615.1 lbs. milk in 7 days. As a 2 year old she made 563.14 lbs. butter from 12634.9 lbs. milk in one year. She is a daughter of Korndyke Queen De Kol's Prince, 90 A. R. O. daughters with records up to over 1090 lbs. butter in one year and over 35 lbs. in 7 days.
PRINCE GELSCHE WALKER 11TH is full brother to Miss Gelsche Walker Korndyke, whose record of 23.17 lbs. butter in 7 days as a junior 2 year old was a California record in class when made. He is getting some extra fine calves, nicely marked, and good straight individuals.

I offer two of his young sons, 6 and 7 months old, out of dams with 20 and 23 pound 3 year old official records. They are good ones and priced right.

J. M. CAMPBELL
ESCALON, CALIF.

The Victory Herd
Registered Holstein-Friesian
Herd Sire:
Sir Piebe De Kol Segis Pontiac No. 135795
A Son of King Segis Pontiac Count. Nuf sed
H. E. Spires Hillcrest Farms
Caruthers, Calif.

HOME OF THE "ORMSBYS"
THE HIGHEST TESTING FAMILY OF HOLSTEINS IN THE WORLD FROM ONE DAM
DAM OF JUNIOR SIRE

SENIOR SIRE
GRAND CHAMPION
KING KORNDYKE HENGERVELD ORMSBY
7TH H. F. B. 78623

We have several young bulls, sired by our senior and grand champion sire, out of high producing dams, that we would like to see go to head some good herd.

FINDERNE SOLDENE FAYNE
Butter 7 days 33.28 lbs.
Milk 7 days 597 lbs.
24th Prize for Butter 1916

JUNIOR SIRE
KING KORNDYKE AAGGIE FAYNE

ORMBSY
means
quality
and
production

KOUNIAS REGISTERED STOCK FARMS
MODESTO, CALIF.

The World's Greatest Dairy Production Backs Our Two Herd Bulls

Prince Alcartra Korndyke

His Sire: KORNDYKE QUEEN DE KOL'S PRINCE, who has 90 A. R. O. daughters with records up to over 1090 lbs. butter in one year and over 35 lbs. in 7 days. His sons and daughters have transmitted notable production and a uniformity of type not excelled in any family of the breed.

HIS DAM--

Tilly Alcartra

Butter 6 years	6141.36 lbs.
Milk	156776.10 lbs.
Butter 1 year	1322.25 lbs.
Milk	33424.80 lbs.
(World's record.)	
Butter 7 days	40.78 lbs.
Milk	783.70 lbs.
Her records for six consecutive years average:	
Butter	1023.56 lbs.
Milk	26129.30 lbs.

She is the only 40 pound cow that has made over 1300 lbs. butter in one year; the only cow that has made over 33000 lbs. milk in one year, over 63000 lbs. milk in two years, over 94000 lbs. milk in three years, over 120000 lbs. milk in 4 years, over 156000 lbs. milk in 6 years; the only cow that has made over 1100 lbs. butter in one year three times; the only cow that has made over 1000 lbs. butter in one year four times; the only cow that averages over 1000 lbs. butter per year for six years; the greatest winner of association prize money.

Her yearling daughter, the only one ever offered for sale, sold for $11200.00 at Philadelphia in June, being exceeded in price by only one female, a world's record cow.

PRINCE ALCARTRA KORNDYKE is transmitting the production of his great dam in a marked degree. Only five of his daughters have completed yearly tests so far, and these five at an average age of 2 years 5 months average:

Butter one year	668.47 lbs.
Milk	15245.40 lbs.

Two of his daughters, freshening as senior 4 year olds, made 31.16 and 30.39 lbs. butter respectively in 7 days, and are both going at a rate on yearly test that promises to carry them right around the 1000 lb. mark. We have around 75 of his daughters in the herd at present, all of which will be put on test.

Winnie Korndyke DeKol Alcartra

His Sire: PRINCE ALCARTRA KORNDYKE, our senior herd sire, whose dam is Tilly Alcartra, the world's greatest dairy cow. Note the tremendous records behind him (shown on this page) and the splendid records his daughters are making.

HIS DAM--

Winnie Korndyke Cornucopia De Kol

Butter one year (California record when made)	1201.06 lbs.
Milk	31034.20 lbs.
Butter seven days	28.73 lbs.
Milk	789.00 lbs.

She is by Aaggie Cornucopia Johanna Lad, 106 A. R. O. daughters, whose dam was the great foundation cow Aaggie Cornucopia Pauline, whose records of 34.32 lbs. butter in 7 days and 137.62 lbs. in 30 days as a senior 4 year old stood as world's records for eight years. Her dam is a daughter of Korndyke Queen De Kol's Prince, that sterling sire of producers and good individuals.

The dam and sire's dam of WINNIE KORNDYKE DE KOL ALCARTRA have the great average of:

Butter one year	1266.55 lbs.
Milk	32229.50 lbs.
(Highest in world)	

The records of his sire's dam, his dam, and her sire's dam average:

Butter 30 days	2997.00 lbs.
Milk	2997.00 lbs.
Butter seven days	34.61 lbs.
Milk	743.90 lbs.

WINNIE KORNDYKE DE KOL ALCARTRA is a strong, vigorous individual of good type and quality, and we believe he is certain to hand down the tremendous dairy production which he inherits on both sides of his pedigree. His first calves will soon be coming, and he will be bred to a long list of highly bred cows and heifers in our herd.

Bulls to Head Any Herd

We have on hand a number of bulls good enough to head registered herds and the very best herds of grade cows. They are growthy, vigorous, and good individuals. Write us your needs—we may have just the bull you want for your herd.

We Stand Squarely Behind Every Animal We Sell.

The J. S. Gibson Co.

Williams, Colusa County, California

Grains for Forage

IN the issue of August 2 we gave illustrations and a few facts regarding better grains for forage and silage. The illustrations and the facts were obtained from a test plot on a city block in Los Angeles with hard clay soil and with irrigation. H. L. Musser now gives report of the behavior of these plants up to the end of July. Most of the planting was done early in April and Mr. Musser's report shows results three or four months after planting.

One point we do not understand as given by Mr. Musser in the second paragraph: "Indian corn and millet are slightly hardier than sorghums." The greater hardiness of Indian corn, at least, has been questioned in the past, for sorghums had the reputation of standing all kinds of grief and still recuperating when moister days came back.

Mr. Musser's report follows:

Demonstration of millets, grasses and sorghums planted first week in April in red clay soil.

1. The sorghums, saccharine and non-saccharine suffered because of cool nights and foggy mornings during April which resulted in their going to seed prematurely and before the proper growth was attained.

2. Indian corn and millet are slightly hardier than sorghums.

3. All trials showed the effect of uneven irrigation due to the fact that red clay soil does not subirrigate readily.

4. It was found necessary to use a sprinkler as irrigating by a furrow midway between rows was not sufficient.

Irrigation alone will not suffice; cultivation is essential.

6. To germinate fine grass seeds in heavy clay soil it is necessary to prepare the soil to a proper fall of four inches to 100 feet. Corrugate it using four inch by four inch pieces with which to make furrows 20 inches apart for irrigating. Then keep the water flowing through the furrows continuously or at least sufficiently to keep the surface perpetually moist until the seed has germinated and the plant is well established. This seems excessive labor, but it is economy to follow closely this method on clay or adobe soil.

7. Common hog millet matured seed in 64 days and a second crop in 90 days and continuously thereafter throughout the summer. This variety is similar to Russian red millet with loose heads and branching stalks.

8. Japanese, brown top and Indian millets are similar in habit of upright growth, abundance of succulent foliage and numerous stools seeding freely. Indian millet exceeds in tonnage grain and forage. Japanese variety matures seed two weeks earlier.

Penciliaria or Pearl millet is taller, has coarser foliage and stools freely, the seed has little value. The forage would be better silage than fed dry.

9. One Napier joint planted April 3 was cut July 10. It had grown to a height of eight feet, had 61 stools, in thickness from the size of a lead pencil to three-fourths inch in diameter and weighed 14 pounds. The entire plot showed remarkable growth and in August it was well above ten feet tall and every clump more than 12 inches in diameter. The foliage and stems are tender and succulent at this writing, August 1. Because of the low germination of the seed and fineness of it, it is impractical to grow it from seed. One plant in one year may produce 1500 to 2000 joints and plants. Freezing weather destroys the foliage but not the crown.

10. The Wonder Forage Plant is something entirely new, presumably a cross pollination between Sudan grass and Black Amber cane. Its growth was unchecked by the cold weather in April as was the growth of the sorghums. It was planted April 3 and at this writing many plants are 12 feet tall, having from 20 to 75 stools, seeding freely. The crowns at the base are ten to 14 inches in diameter. Foliage is narrow and more succulent than that of sorghums. The stems are not as thick and coarse, it will yield probably twice as much silage as any sorghum and may be cut twice a season. It seeds freely and grows, if irrigated, readily from seed.

11. Guinea grass promises to produce an A-1 crop of coarse grass with numerous spreading seed panicles. It is greatly valued in the Gulf states and Mexico because it affords an abundance of forage during the winter months and endures pasturage to a wonderful degree.

12. Smilo (Oryzopsis miliacea), the grass for the desert range of the Southwest. The seed is slow to germinate. The introducer, Mr. Stead of San Diego, advises sowing the seed broadcast just before the rainy season sets in and then forget all about it. In the spring you will be surprised at the growth you will find. It stools and seeds freely.

13. Rhodes grass (Chloris Virgata). This plot demonstrates that Rhodes grass is a wonderful grass for pasture. Mr. Renfrew, manager of the Beatty and Renfrew Rhodes Grass Ranch at Niland, where they have growing 320 acres of Rhodes grass, is authority for the statement that one acre will pasture 25 to 30 hogs, seven cuttings of hay of 1½ tons per cutting in one year. It is perennial where the thermometer does not range below 18 degrees. When frosted the field turns brown but the grass is as good roughage as so much cured hay. This is important to know because one may feed all the tender crops, saving the Rhodes for winter pasture. Space is too limited to state all its merits.

14. Teff grass (Eragrostis Abyssivica), an annual, grows readily from seed and may be pastured in one month or cut for hay two months from the time of planting. It stools and seeds freely, may be cut three times a season or pastured all summer with ordinary irrigation.

15. Fog grass. We wish to call the attention of visitors to the trial of Fog grass, planted June 1. It has grown blades 30 inches long. These blades stand 13 inches high and droop on all sides until the tops nearly touch the ground and, at this date, August 1, no sign of seed. In the early morning the entire plant is a mass of dewdrops, so far in excess of other grasses that the name of fog is at once suggested. It is velvety to the touch, much more so than any other grass on the plot.

NOVEL FEATURE AT DAIRY CATTLE CONGRESS

An original feature and one which is thought will add greatly to the educational value of the Dairy Cattle Congress to be held at Waterloo, Iowa, September 22-28 is an "official information man" for each the Holstein, Jersey, Guernsey and Ayrshire breeds. A special man for each breed will be stationed in the cattle pavilion for the purpose of explaining in a brief way the characteristics and advantages of the particular breed he has in charge.

Thousands of city and town people, who know little or nothing of the great importance of the dairy industry nor are even able to distinguish the various breeds, attend such shows. The management of the Dairy Cattle Congress believes that the majority of these people will appreciate the voluntary information offered and that a keener interest will be aroused in dairying as a result. Technicalities will be eliminated by the men when talking to such people, and only the elementary principles of dairying and the vital part that dairy products play in the human ration briefly explained.

LOS ANGELES PREMIUM LIST

Secretary C. R. Thomas of the Los Angeles Live Stock Show is mailing out premium list rules and regulations of the second annual which is to be held at Exposition Park, Los Angeles, October 18-26. It is a beautifully printed booklet with its title cover in raised gold letters. Mr. Thomas says this is to be the greatest live stock show yet held on the Pacific Coast. The cash premiums aggregate $34,000, with an additional $20,000 for prize racing program.

Sir Aaggie Korndyke Alcartra

194050

Heads Our Herd

His Sire—PRINCE ALCARTRA KORNDYKE, son of Tilly Alcartra, the world's greatest dairy cow, and Korndyke Queen De Kol's Prince, who has 90 A. R. O. daughters with records up to over 1090 lbs. butter in one year and over 35 lbs. in 7 days. The first five 2 year old daughters of Prince Alcartra Korndyke to complete yearly records average 668.47 lbs. butter from 15245.4 lbs. milk at an average age of 2 years 5 months. Two of his daughters made 31.16 and 30.39 lbs. butter respectively in 7 days as senior 4 year olds and are both going at a 1000 lb. rate on yearly test.

His Dam—HAZEL AAGGIE OF OAKWOOD DAUGHTER, a granddaughter of the famous imported bull Jetze Zwarthak, who was a show bull of great merit and a sire of big producers. She made 860.91 lbs. butter from 21208.5 lbs. milk in one year as a junior 3 year old, and has a daughter, full sister to Sir Aaggie Korndyke Alcartra, that made 636.52 lbs. butter from 14392.4 lbs. milk in one year, freshening at 2 years 4 months.

The Dam and Sires' Dam of Sir Aaggie Korndyke Alcartra average:
Butter one year----1096.58 pounds
Milk one year----27316.60 pounds

His calves now coming on in our herd are all nice straight individuals, showing good constitution and excellent type. One of his sons will introduce the world's greatest producing dairy blood into your herd.

Females and Males from A.R.O. Dams For Sale at all times

ALL ANIMALS GUARANTEED

Ranch is 1½ miles north and ½ mile west of Ripon, San Joaquin County. Visitors always welcome.

Leeman & Kilgore

Ripon, California

Sturgeon Stock Farm
HOLSTEINS

Headed by SEGIS PONTIAC ABBEKERK

His sire: SEGIS PONTIAC DE KOL BURKE, son of the former world's record cow Riverside Sadie De Kol Burke, who made 902.1 lbs. milk and 32.29 lbs. butter in 7 days, and in one year made 28,826.4 lbs. milk and 1085.12 lbs. butter.

Segis Pontiac De Kol Burke now has 21 A. R. O. daughters, one of them with 932.44 lbs. butter in one year as a senior 2 year old, another with 851.01 lbs. butter in one year as a junior 2 year old, both California records in class. Another daughter recently made 26.18 lbs. butter in 7 days as a junior 2 year old, and promises to make a very large yearly record.

A daughter of Segis Pontiac De Kol Burke sold for $11,200.00 at Philadelphia in June, and in the same sale a son of one of his daughters sold for $11,000.00, they being the second highest priced female and male respectively in a sale composed of picked tops from fifty of the best herds in the United States and Canada.

His dam: CHANGELING TIDY ABBEKERK GEM. As a 4 year old she made 767.36 lbs. butter from 19,389.9 lbs. milk in one year. As a 5 year old she made 34.74 lbs. butter from 501.2 lbs. milk in 7 days, and the following year made 35.07 lbs. butter from 639 lbs. milk in 7 days. She is the only 35 lb. cow in California with a record above 34 lbs. at a previous freshening. She is a daughter of the century sire Changeling Butter Boy and is out of a 31 lb. daughter of Tidy Abbekerk Prince.

SEGIS PONTIAC ABBEKERK as an individual speaks for himself, and the wonderful production of his nearest relatives justly entitles him to be rated as one of the best of the younger sires of the breed. He is being mated with a large number of highly bred cows and heifers in our herd and we now have some of his young sons to offer.

Visitors Welcome
Correspondence Invited

R. C. Sturgeon, Tulare, Cal.

Tulare Holstein Farm

Herd Headed by

Prince Riverside Walker

His Sire: PRINCE GELSCHE WALKER, whose daughters have held more world's records and state records than the daughters of any other bull yet developed on the Pacific Coast, and have averaged higher in the sales ring than a like number of daughters of any other bull in the west.

His Dam

Aaggie Acme of Riverside

Butter two years ..... 1861.98 lbs.
Milk ..... 35387.40 lbs.
Butter one year ..... 1053.14 lbs.
Milk ..... 20354.80 lbs.
Butter seven days ..... 28.35 lbs.
Milk ..... 558.10 lbs.

Dam of AAGGIE ACME OF RIVERSIDE 2ND—

Butter two years ..... 2426.88 lbs.
Milk ..... 44267.30 lbs.
Butter one years ..... 1331.78 lbs.
(World's record strictly official)
Milk one year ..... 24690.00 lbs.
Butter seven days ..... 35.68 lbs.
Milk ..... 627.30 lbs.

And she is dam of MISS AAGGIE ACME BURKE—

Butter seven days at two years 26.18 lbs.
Butter 30 days at two years..... 106.53 lbs.

This heifer has now been on yearly test for over five months and is milking over 80 lbs. per day, promising to make right around 1000 lbs. butter this year.

King Korndyke Pontiac 20th

His Sire: KING KORNDYKE PONTIAC, who is by the foremost A. R. O. sire of the breed, King of the Pontiacs, who has 32 two year old daughters that averaged 769.01 lbs. butter in one year. The dam of King Korndyke Pontiac is a three-quarter sister to Prince Gelsche Walker.

His Dam

Miss Valley Mead De Kol Walker

Butter 342 days at 3 years 5 months.. 1113.57
(Second highest in class when made)
Milk 22021.10
Butter 7 days 8 months after calving 25.14
(World's record in class)
Butter 7 days at 3 years 5 months... 36.80
Milk 688.60
Butter 257 days at 2 years 6 months... 790.37
Milk 17010.90
Butter 7 days 8 months after calving 21.33
(World's record in class when made)
Butter 7 days 2 years 6 months..... 25.68
Milk 534.00

She was unable to finish a full year either as a two or three year old having been bred early both years and milking both years right up close to calving, yet her production for the two short years is:

Butter ..... 1903.95 lbs.
Milk ..... 38986.70 lbs.

She won the California Dairy Cow Competition over all ages and breeds and on her breeding, type, and production is widely rated as one of the greatest heifers ever developed in the Holstein-Friesian breed.

These two exceptional bulls are being mated with highly bred, heavy producing females in our herd. Here are some of the records made by our cows and heifers during the past year:

Name of Animal:	Seven-day Test. Butter.	Milk.	Thirty-day Test Butter.	Milk.
Coloma Beauty Butter Maid, Jr. 4 years	34.77	575	121.82	2566.8
Madrigal Mooike 2d, Sr. 3 years	32.91	567.5	.....	.....
Thelma Hartog DeKol, 7 years	31.13	525.3	118.91	2649
Leda Heng. DeKol Korn, 6 years	30.87	645.3	119.62	3092.7
Pauline Soldene DeKol 3d, 5 years	30.84	571.2	.....	.....
Melba Hengerveld, 6 years	30.36	619	.....	.....
Mona Fobes, 4 years	26.61	527.4	108.77	2255.1
Blanche Nudine Clothilde 2d, 4 years	28.03	527	.....	.....
Troutbrook Pontiac Starin, 5 years	26.57	562	110.27	2382.3
Wayne of Rock, 7 years	26.46	540	108	2400
Leda Hartog Ormsby 2d, 6 years	25.43	522.2	.....	.....
Lady Pontiac Holingen Jewel, Jr. 2 years	21.90	504.5	85.5	2140.63
Blanar Segis, Jr. 2 years	21.72	394.6	.....	.....
Parthenea Lady Princess, Jr. 3 years	20.36	427.7	.....	.....
Lady Lilith DeKolzer, Jr. 2 years	20.16	506.5	.....	.....
Heng. DeKol Segis Cornucopia, Sr. 2 years	19.46	453.9	.....	.....
Wayne of Rock Martha, Sr. 2 years	19.98	437.7	76.84	1809.2
Yearly Records.				
Hertinga Willis, 8 years			103	23,960
Coloma Beauty Butter Maid, Jr. 3 years			875	20,239
Madrigal Mooike 2d, Jr. 2 years			755.95	20,160

We are putting other cows and heifers on test regularly as they freshen, and besides the above list we have a large number of females in our herd with records up to over 30 lbs. butter in 7 days.

Bulls rarely reach service age on our farm, so large is the demand for sons of our herd sires. If you want a young bull of good individuality and the very best of breeding, come and see the herd or write your needs.

Our Entire Herd Is Tuberculin Tested

Tulare Holstein Farm

W. J. Higdon, Owner, Tulare Calif. Harry L. Redd, Herdsman

DETAILED ESTIMATES EACH MONTH

Up to this time the United States department of agriculture has issued a single estimate in January of each year, showing how many head of the various kinds of live stock there are in the United States, and one estimate a year showing losses by disease. Now the whole system is to be changed. As soon as the machinery can be got in operation by the bureau of crop estimates there will be 12 live stock estimates a year instead of one. Instead of being made for the 48 states they will be made for the 3000 agricultural counties in the United States. Instead of showing merely that there are so many horses, so many cattle, so many sheep, and so on, they will be made by age and sex classifications. That is, they will show what proportion is breeding stock, what proportion growing stock, and what proportion "marketable stuff." They will show quality as well as numbers—the proportion of pure-bred animals, of grade animals, and of scrubs.

A great deal more than that, even, is to be done under the new system. These surveys will show, besides actual live stock figures, a great many things pertaining to the live stock industry. They will show how many silos there are and what they contain, how much feed is on hand and in prospect, available for feeding to live stock; and the condition of pastures and ranges throughout the United States. This showing will be made every month in the year.

GRAND CHAMPION HAMPSHIRES

Popularly known as the Grand Champion Herd of Hampshires is that owned by Gordon & Langdon at Perris, F. A. Langdon, manager. The grand champion sow Sioux Queen, of P. P. I. E. fame, gave name to the herd. The blood of this famous brood and show sow is strong in the herd today as well as in the numerous offshoots from the herd in various parts of the country. However, one of the strong features of the herd is in the diversity of blood lines it embraces. One of the fine sires in service at this time is Honest Lad. His sire California Lad is now doing service in the Dupee herd at Santee. His dam is the great brood sow Cleopatra, a daughter of Gen. Tipton Again and Sioux Queen. The well known big boar Goldmine is still in use for the older sows in the herd. Prince is a yearling son of Gen. Tipton Again, and out of Sioux Queen. The sows in herd are close up descendants of Goldmine, Mose Messenger, Pat Maloy, Cherokee Plummer, Gen. Tipton, Gen. Allen's Masterpiece, California Lad, Blythedale Jim and Distributor. The herd is in fine thrift, is a real producer of good things, and sales are reported to have been good. Mr. Langdon will have some good "pen holders" out at the fairs, though he makes no pretense at being a professional showman. He invites inspection every day in the year. Two hundred pigs are in evidence, and plenty of prospects ahead.

FARM MANAGEMENT

"Farm Management," by Jacob H. Arnold of the office of farm management, United States department of agriculture, published by the Macmillan Company, New York, at $1.25.

"It has been only in recent years that much attention has been given to the study of farm management. However, from the standpoint of practical farming it is probably the most important phase of agricultural study. The subject being new, it is somewhat difficult to present in as logical and clear a manner as may be done when presenting other phases of agricultural science to which more attention has been given."

This is Mr. Arnold's first statement in the prefatory note. He then proceeds to discuss: What a Farm Is; Types of Farms; Advantages of Situation; Farm Crop Problems; Live Stock; Farm Organization; Efficiency of Organization; Business Methods Applied to Farming; Farm Administration; etc. It is a book of nearly 250 pages admirably demonstrating that the handling of a modern day farm means modern day business methods.

King of the Black & Whites

Has 45 A. R. O. daughters, the largest number of any bull on the Pacific Coast.

One of his daughters at the Philadelphia Sale sold for $2,000.00, and her heifer calf sold for $2,100.00.

Another daughter, as a junior 2-year-old, has just completed a record of over 20000 pounds milk and over 800 pounds butter. This is excelled by only two daughters of the great bull King of the Pontiacs, at the same age.

KING OF THE BLACK & WHITES' daughters are ranking among the foremost, both in production and type. R. E. Haeger of Illinois has one in his famous show herd which has won prizes for him in all the big shows.

Asa Morris, of Woodland, in describing Prince Gelsche Walker, characterized him by saying that he was second only in breeding to KING OF THE BLACK & WHITES.

He was the first bull of the breed whose seven nearest dams averaged over 30 pounds of butter in 7 days, six of his seven nearest dams being 30-pound cows, four of which have produced 30-pound daughters who in turn have produced 30-pound daughters, all of which have 30-day records above 126 pounds of butter.

He is noted for his prepotency and the persistent milk production of his offspring. He already has one daughter above 30 pounds butter in 7 days, and the first daughter to be tested sired by his son King Lillian Walker Segis, made over 17 pounds butter in 7 days as a 2-year-old.

A son of **KING OF THE BLACK & WHITES,** out of a good record dam in our herd, will breed improved production into any herd.

HENDERSON COMPANY

716½ K Street **Sacramento, Calif.**

OUR HERD NOW CONTAINS 333 REGISTERED HOLSTEINS

IT WILL PAY

The Breeder or Dairyman who is trying to get a higher percentage of butter-fat in milk to investigate

Supreme Glista Pietje

KING OF HIGH TESTERS

His dam, her full sister and seven nearest dams have an average test of 4.5%

His dam, GLISTA EGLANTINE, has two 32 pound 7 day records and her sister, Glista Ernestine, has recently completed her fifth consecutive record of over 30 pounds of butter in 7 days. This wonderful performance has been equalled by only one other cow in the United States.

BONITA HERD is composed of young, high-testing individuals with A.R.O. records ranging from 18 pounds of butter in 7 days at 2 years old to 27 pounds of butter in 7 days at four years old.

You will find that a son of SUPREME GLISTA PIETJE, from one of these A.R.O. cows, will be a valuable addition to your herd.

To induce the more extensive use of pure bred sires, we will give very liberal terms on young bulls.

Bonita Stock Farm

J. M. Henderson
Proprietor

Sacramento,
California

Economic Status of the Jersey Cow

By Dr. H. W. Hand, President California State Jersey Breeders' Association.

THE Jersey cow is an important factor in the development of any state, especially a state like California where her fitness is becoming more appreciated every year. Because of our climate and our soil and the cultural tastes of our people, California is fast becoming the home of the small rancher. Our great landed estates are rapidly being subdivided. The great dry farm era is passing, to give place to irrigation with its accompanying phases of agricultural and horticultural evolution.

In California all our natural conditions of soil, climate and environment conspire to impell the average citizen "back to the soil." There is nothing that so strongly appeals to the average city man, who has toiled for others for years, who is tired of the daily grind, and whose family probably needs the freedom of the country, than a small, intensely cultivated ranch in some quiet country side, with its abundance of fresh eggs and poultry, its fresh and health-giving milk and butter and its beautiful and interesting live stock.

There is no animal that takes so kindly to small quarters as the Jersey cow. She enjoys the frequent visits of her keeper. She loves to grace, with all her beauty, the farmyard or the lawn, and the more we pet her the more rich product will she give in return. She prefers the small paddock to the large pasture and yields correspondingly greater profits for the lesser investment. And when the people of the larger cities get to the point in their education where they will demand that the value of milk be based on the nutritive value it contains, that its selling price shall vary according to the butter fat it contains, then the Jersey will have truly come to her own for her milk contains an average higher percentage of fat, nutritive solids other than fat and essential vitamines than the milk of any other breed.

There is no animal that returns a greater profit to her owner or contributes more to the health and happiness of the family. There is no food that is so cheap to consume nor is there any food that so surely insures fine growth and development of children as milk. All the great French scientists agreed early in the world war that to feed the front trench soldiers with a cup of good wholesome milk, stimulated the boys to the highest and best action. It may therefore be truly said that milk, and not beer, won the war. There are many substantial and sound economic reasons for the coming supremacy of the Jersey cow.

At the state fair last year the Jerseys on exhibit outnumbered any other breed. The California State Jersey Breeders' Association is buoyant over the fact that the breed is growing in both numbers and popularity each succeeding year. More people visit the Jersey exhibits at the fairs and evince greater enthusiasm than was ever dreamed of by the officers of this breed association. More and more sales to new Jersey breeders are recorded every year.

The history of the Jersey breeding business in California and the West is indeed unique. Most of the men engaged in the Jersey business are men who have made all they have from the Jersey herself. When a breeder once learns the merits of the registered Jersey he never goes back to another breed. Universally, they become convinced that she is the most efficient machine in the dairy business today because she can manufacture more milk and butterfat out of less feed than any other machine in existence.

In one single county on the Pacific Coast there are 47 independent herds of registered Jerseys. At Orland, scarcely any other breed can be found. The whole community is like a little Island of Jersey. There are many strong, active Jersey associations springing up all over the Pacific states.

At the world's fair in Chicago in 1893 a great test was made of all the dairy breeds. The Jerseys demonstrated their ability to return a greater net profit than any other breed. At the world's exposition test at St. Louis in 1904 the Jersey produced one pound of butter fat for every 12 pounds of food consumed, while the Holstein required 14.83 pounds, the Shorthorn 15.52 pounds and the Brown Swiss 16.91 pounds. In the great Ohio test, conducted by the Ohio University, extending over a period of one year, 131 Jerseys and 157 cows of another dairy breed were tested. The results of this test were: Jerseys consumed 18.2 per cent more nutrients and produced 1.2 per cent more milk, 25 per cent more solids and 59 per cent more fat than the other breed. See official report.

Why shouldn't every Jersey breeder wear that complacent smile that won't rub off?

I am glad to note that more and more of our Jersey breeders are conducting yearly authenticated tests in their herds. This is very commendable in all breeds. Several breeders carry no other females in their breeding herds than such dams as have proven their real ability to produce by the register of merit test. This record making greatly assists the prospective buyer in the selection of the best and the proven ones. He does not have to depend on the pedigree solely nor on the statements of the breeder, for it is an easy matter to look up the records for himself. In this way he is not only able to trace the merits of the animal he wishes to buy, but its ancestry for several generations, if it be a good one. This record making is proving of inestimable value to all beginners when purchasing foundation stock.

The persistent and consistent efforts of the best breeders of the West are now being recognized. Some of the greatest breeders of the East are taking back with them some of the choicest animals of the Western families. The world's record Jersey cow Viva La France was bred, reared and developed by an Oregon man on Oregon grown feed and she still lives within 40 leagues of the Western Coast. The herd of Jerseys holding the world's record for herd production was reared and received its sustenance within 60 miles of the Pacific. When we stop to think, and do finally realize the blessings of our gentle, salubrious climate, our wonderful fields of alfalfa and vetch, and the superior richness of our grains in the essential nutrients that make beautiful animals and abundant butterfat, we feel quite confident that with continued, intelligent breeding, feeding and handling of the wonderfully efficient Jersey that we can make the Pacific states the dairyland of the world. The time is not far distant when our superior natural advantages for the production of fine animals will become more broadly recognized, and this region will go over the top for quality, type and production, the ideal and desired goal of us all. Henceforth, let us "Keep on a keepin' on."

Let us "Keep on making them better."

SOME CHEESE

If you don't believe it here are the facts, for it is the largest cheese in the world: weight 31,964 pounds, height eight feet, diameter 10½ feet, circumference 33 feet, value $16,000, weight of container 8000 pounds, milk used 357,500 pounds, salt used 800 pounds, rennet used 1251 ounces, three bandage cloths used, valued at $260, each measuring 33 feet long and 16 feet wide, factories furnishing the curds 59, made by 73 cheese makers and helpers, value of cheese factories, about $400,000, milk taken from 12,000 cows on 1800 farms.

This cheese, larger than any ever attempted before, was made to be exhibited by Armour and Company at the National Dairy Show to be held at the International Amphitehater, Chicago, October 6 to 12, 1919.

The community stock sale of the Grass Valley, Nevada County, farm bureau, which was to have been held the first of September, has now been postponed to the last of the month.

HEAVY PRODUCTION

The Result of Right Breeding

The real test of a bull is the performance of his daughters.

Senior Herd Bull

KING PONTIAC
Netherland Segis 3d

Thirty of his daughters are now in our herd and all will be officially tested.

As the test of any bull is the ability of his daughters to show heavy production, **King Pontiac Netherland Segis 3rd**, our senior herd bull, has proven his ability to transmit to his daughters heavy production. Three of his daughters as Junior two-year-olds have made better than 21 pounds butter in seven days, and seven more now on test promise equally as well.

Dam Senior Herd Bull

GERBEN ABBEKERK MAID

A twice 34 pound cow sired by Sir Skylark Ormsby Hengerveld, who has 27 A. R. O. daughters.

You cannot fail to be impressed with the wonderful breeding ability of our senior herd bull, and the tremendous combination of individuality and breeding represented in his sons. With this in mind you are certainly convinced that your herd bull should come from **Rosamaines Ranch.**

Come to the ranch and select one of his sons from one of our high producing cows.

All inquiries answered promptly.

Rosamaines Ranch

STALDER BROS., Owners Riverside, Calif.

June Acres Stock Farm

Do You Realize?

Holsteins

1. That our herd sire is one of the best bred bulls of the breed?
2. That five of his seven nearest dams average 1096.28 lbs. butter in a year?
3. That five of his seven nearest dams average 30.89 lbs. butter in seven days?
4. That ten of his nearest 14 ancestors, old enough to have daughters to finish a lactation period, have produced 1000 pound daughters?
5. That June Acres is the place to get high producing Holsteins?

Durocs

1. That June Acres Stock Farm won the Futurity in 1917 and again in 1918?
2. That in 1918 June Acres won almost twice as much money as any other exhibitor at the State Fair?
3. That the tops of these winners constitute our breeding herd?
4. That every animal in our herd is either a winner or has produced a winner?
5. That June Acres is the place to buy real good Durocs?

V. F. Dolcini

DAVIS, CALIF.

Santa Anita Rancho

Anoakia Breeding Farm

Registered Holstein Cattle

The herd is headed by PRINCE WALKER CORNUCOPIA, the highest record son of Prince Gelsche Walker. Prince Gelsche Walker justly ranks as the greatest Holstein sire yet developed on the Pacific Coast. His daughters have broken more state and world's records than those of any other Pacific Coast sire, and have proved themselves producers and breeders of the first rank. In public sales in California, seven sons, seven daughters, four grandsons, and five granddaughters of Prince Gelsche Walker, have sold for a total of $28,670.00 or an average of $1246.00 per head for the twenty-three head, an average not closely approached by a like number of descendants of any other bull in the west.

Prince Walker Cornucopia

The dam of PRINCE WALKER CORNUCOPIA is Alba Sadie Cornucopia Creetia, the only cow in California with a record above 36 lbs. butter in 7 days having a previous record above 34 lbs. butter in 7 days. She also has a record of 866.28 lbs. butter from 18,849.4 lbs. milk in 338 days. She is sired by Sir Sadie Cornucopia, whose dam was the first cow to make over 30 lbs. butter in 7 days, Sadie Vale Concordia, and she is the dam of the 40 pound cow Sadie Vale Concordia 4th, who is the dam of one 38 pound daughter, and the great sire King Korndyke Sadie Vale who has also sired a 40 pound daughter.

Among the females in our breeding herd are twenty-three daughters of Prince Gelsche Walker, some of them just now coming into milk; a large number of good record cows and heifers of substantial breeding; and a choice lot of granddaughters of Winnie Korndyke Cornucopia De Kol, the first cow in California to make over 1200 lbs. butter in one year.

We are blending and developing the blood lines that have produced some of the greatest animals of the breed, and offer a number of young bulls that should work improvement in your herd.

Registered Poland-China Swine

Our swine breeding is now confined exclusively to one breed—Poland-Chinas—and the herd is composed of over one thousand head of registered individuals of this breed. A very large number of the females are daughters of BANKER'S BOY, the $1000.00 Junior Champion at Panama-Pacific Exposition. He has proved himself one of the great sires of the breed, and his daughters are being bred to ANOAKIA CHIEF, son of the prize winning boar I B A Wonder. Steady demand for breeding animals has kept the herd sold down close, and intending purchasers will do well to communicate with us well in advance of the time delivery is wanted.

Registered Percheron Horses

The Percherons at Santa Anita were selected with strict regard to quality, and the type to meet California demand. Our stallions and mares have been prominent and consistent prize winners wherever shown, and we are now in position to offer a few very desirable young stallions at attractive prices.

Registered Mammoth Jacks

The foundation of this herd was laid with big, broody jennets, and headed by the best jacks that money could buy. We now have for sale a number of two and three year old jacks of exceptional breeding and quality.

Arabian Thoroughbreds

Out of our choicest Thoroughbred mares, and sired by our famous imported Arabian stallion, Ibn Mahruss, we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and by Don Castano, five gaited saddle stallion, winner in many prominent shows.

Correspondence Given Prompt Attention

Santa Anita Rancho

Santa Anita, California

Anita M. Baldwin, Owner W. H. Taylor, Supt.

Making a Start With Pure Breds

By Frank B. Anderson

WHEN people ask me for advice about going into the hog business I do not begin by telling them that I started with less than $800 worth of hogs two years and a half ago, sold about $5500 worth in that time and now have a herd easily worth more than $5000. I usually start out by telling them the hard-work side of farming, the money it takes and the long hours with little time for pleasure during the period necessary to become established. I sometimes do not get as far as telling about the returns. Often the embryo hog man gets another notion into his head when I first relate the hard work attached to getting a farm started. Mine, however, was a case of pioneering as I took virgin land in a densely overgrown section of a reclamation district, so perhaps my lot was a little more severe than the average and maybe I should not assume that every beginner will have the difficult task I had to develop a breeding farm.

However, as the readers of this paper for the most part are either farmers or city people owning land or farms, they will be more interested in the live stock story, as sought by the Cultivator.

I first equipped my place for hogs, having already made up my mind to enter the pure bred Berkshire business. I bought six registered sows at the Western Berkshire Congress sale at Davis in February, 1917. One of these proved barren, so the breeder consigning her gave me a good herd boar in her place. My initial purchases were $560. Since then I have bought a couple of hundred dollars worth of pigs, but my entire cash expenditure for foundation stock, including transportation charges, came under $800.

Being a beginner, I had a little hard siedding when it came to getting the prices I thought I should receive for the first crop of pigs. I put a fair price on them, and what boar pigs I could not sell I turned into barrows and sent to the pork market. Sows I did not offer for sale until after a year or so, as I kept these to make up a larger herd.

I was therefore not much in shape to sell many pigs until the current year. I have, however, sold about $5500 worth of breeding and pork hogs, and my herd as it stands today would bring considerably better than $5000 in a public sale, so I would feel that others similarly situated could assume from this that the pure bred hog business, if given one's real earnest attention, can be made a good business.

My receipts would perhaps be greater and my herd larger had I had better success with my sows, some of which did not breed regularly, and had I not had a bad attack of pneumonia among my fall pig crop last winter, but these are all some of the hazards of the live stock business. The live stock business cannot be figured out with pencil and paper and made come up to the mark. It takes hard work and lots of it and constant attention, but I know no other branch of farming which is as fascinating as the growing of pure bred live stock, and it will pay well if given the right sort of attention.

As an appended story I might mention the purchase of a pure bred Holstein cow for $200 in the A. W. Morris & Sons sale at Woodland last November. I was offered $500 for her heifer calf before it was dropped, as the cow, which had a nice record, had been bred to King Mead of Riverside. On April 2 a heifer calf was dropped, but I declined the offer. Frank Morris told me recently that a three-quarter sister of this heifer made 1215 pounds of butter in a year's strictly official test, so this heifer is going to stay in my small dairy herd as a foundation animal, because this kind is not purchasable, and when one does change hands it is usually at around four figures. The dam will pay for herself in milk alone this year and is bred back to King Sadie Vale Elzevere, another great sire of the breed.

I have this to suggest—get good foundation animals, give them proper care, and they will pay you for it. I have often noticed at public sales that the higher priced animals are more eagerly sought after than those that go at low figures. It costs no more to develop the good ones, so let your initial investment be in good animals and your earnings will be far greater than if you start out with mediocre stuff that brings little better than grade prices.

An "IDEAL" Silo Pays for Itself

"My IDEAL GREEN FEED SILO is the biggest money-maker on my farm, and I wouldn't be without it for ten times its cost. My saving on feed bills the first year has more than paid for it." So writes a man who has learned by experience that the "IDEAL" silo returns big dividends.

Before buying a silo, investigate the "IDEAL." Get acquainted with its superior features. Learn why it is more economical, lasts longer and makes better ensilage than any other.

Only the choicest lumber goes into the construction of the "IDEAL" silo. The staves are of selected California Redwood, tongued, grooved, bevelled and splined by special machinery.

Refrigerator doors with "three point contact" make the "IDEAL" absolutely leakproof. They come flush with the inside walls of silo, thus preventing air pockets and spoiled silage. The ladder is securely fastened to the silo at one side of the doors. This permits easy access.

Heavy, soft-steel hoops, placed thirty inches apart, bind the silo into a true circle. Malleable iron lugs and long upset threads allow easy adjustment. Self-supporting roof—air-tight, watertight foundation joint and other features too numerous to mention here—put the "IDEAL" in a class by itself.

Fill out and mail the coupon. It will bring you, free of obligation, a valuable booklet on silos.

Insure Your Water Supply

The best way to maintain a constant, never-failing supply of water is by means of a Pacific Redwood Tank.

Pacific tanks have the everlasting qualities of the redwood of which they are built. As everyone knows, water preserves instead of deteriorating this wood. The patent non-shrinking system with which our tanks are fitted absolutely prevents leakage under all conditions.

Pacific Machine—Banded Wood Stave Pipe is the best and most economical for irrigation systems and pipe lines on the farm. Made in all sizes from 2 inches to 30 inches in diameter. Write for wood pipe circular and specifications.

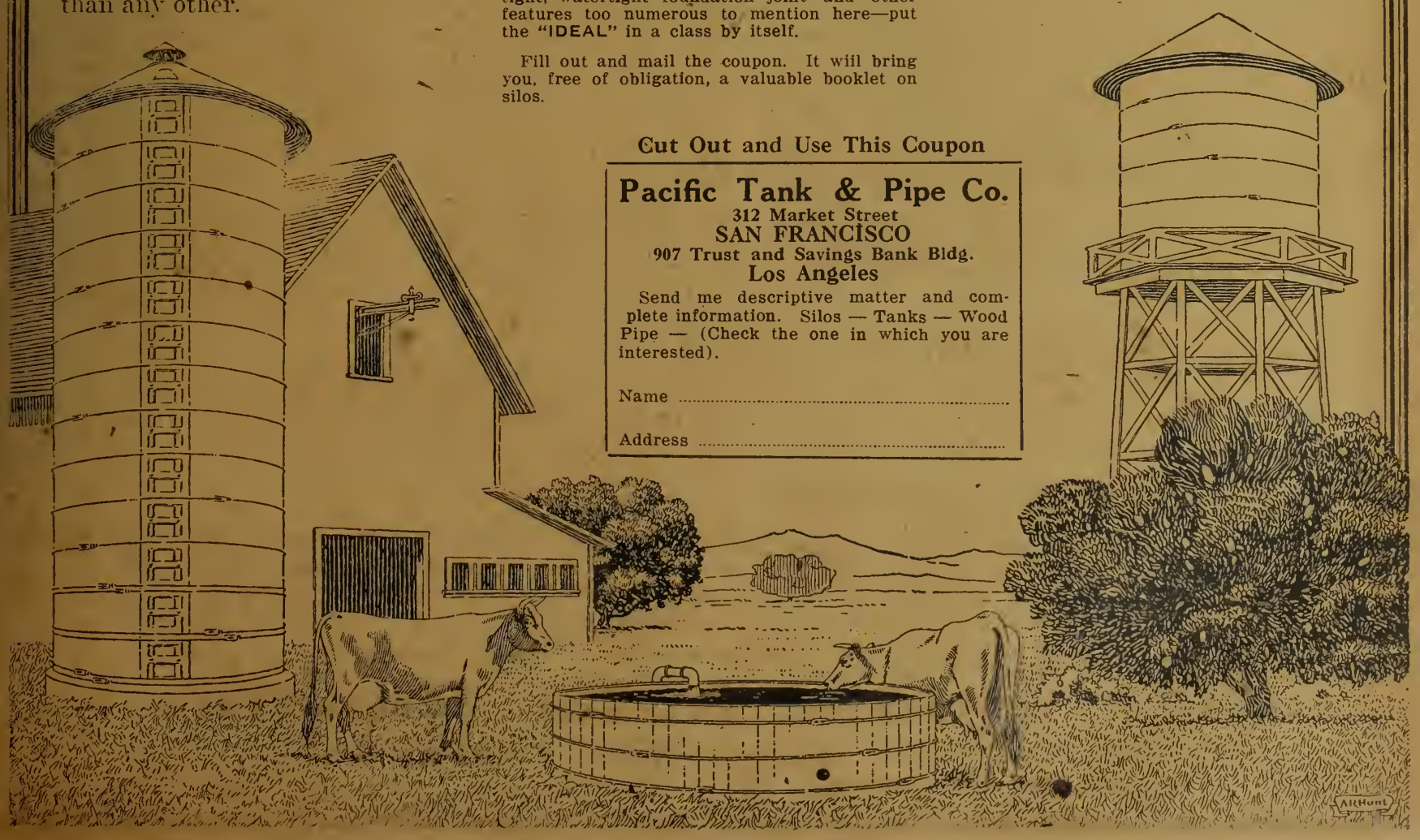
Cut Out and Use This Coupon

Pacific Tank & Pipe Co.
312 Market Street
SAN FRANCISCO
907 Trust and Savings Bank Bldg.
Los Angeles

Send me descriptive matter and complete information. Silos — Tanks — Wood Pipe — (Check the one in which you are interested).

Name .....

Address .....



Packwood Farm Holsteins

Headed by the 41 pound Bull

King Abbekerk Johanna Segis

In placing KING ABBEKERK JOHANNA SEGIS at the head of our herd we secured the highest record bull ever sold on the Pacific Coast. His dam is Adirondac Wietske Dairy Maid, 41.01 lbs. butter from 831.7 lbs. milk in 7 days, 158.30 lbs. butter from 3603.1 lbs. milk in 30 days, both of her butter records the highest ever made on the Pacific Coast.

His sire is King Segis Alcartra Abbekerk, son of the $50,000.00 bull King Segis Pontiac Alcartra, whose daughters are making splendid records in both short and long time tests. The first daughters of King Segis Pontiac Alcartra are now coming in milk and are making very substantial records.

The dam and sire's dam of KING ABBEKERK JOHANNA SEGIS average:

Butter seven days	35.64
Milk	666.20

Our herd is composed mainly of daughters of PRINCE HISKE WALKER, full brother to the 34 lb. 4 year old Lady Hiske Walker, and all of these will be mated with KING ABBEKERK JOHANNA SEGIS.

All we have to offer at present are some choice young sons of Prince Hiske Walker. Order early if you want one; as there are only a few left.

W. F. MITCHELL Owner, Visalia, California

King Ormsby Canary Johanna

Heads Our Herd

His Sire: SIR PIETERTJE ORMSBY MERCEDES, the greatest sire of producers and show ring winners of any breed. He has 66 A. R. O. daughters, 14 of them with records above 30 lbs., 2 with records above 40 lbs. in 7 days, 8 with records above 1000 lbs. butter in one year, 2 above 1300 lbs. butter in one year, and 20 of his daughters, mostly under mature age average over 1000 lbs. butter in one year. Three of his daughters sold for $10,000.00 or more each, and one of his sons for $65,000.00 at public sale last June.

His Dam: GLEN CANARY DE KOL, 34.59 lbs. butter in 7 days, 139.83 lbs. in 30 days as a senior 3 year old. (World's record when made). She has 3 A. R. O. daughters, including the great heifer Glen Canary De Kol 2nd, and one proven son whose first six daughters to freshen at an average age of 2 years 1 month have official records averaging 19.76 lbs. butter in 7 days.

His Full Sister: GLEN CANARY DE KOL 2ND:

Butter one year at 4 years 5 months (Second highest in class)	1323.36 lbs.
Milk	25590.60 lbs.
Butter at 24 months (Highest in world at age)	951.05 lbs.
Milk	17584.20 lbs.

Most of the females in our herd are granddaughters of Colantha Johanna Lad, and all of them are being mated with KING ORMSBY CANARY JOHANNA.

We have For Sale Young Bulls of This Popular Breeding

Longheath Farm

Fallon, Nevada

Diseases Caused by Improper Feeding

REFERRING to the high hog prices, an issue of the Berkshire World of some months ago, in fact, at a time when hog prices were not so high as at present, the editor of the World said:

"It is nothing short of a crime for a hog man to allow his hogs to contract diseases through carelessness. In keeping disease out of the herd the owner must be ever watchful and on the job. The following information on diseases given out by the Pennsylvania College is well worth consideration."

Prices have increased, we believe the need of the world has increased, until the words are truer today than when spoken, so we give some of the hints as to diseases caused by improper feeding, which may save more dollars today to the pork producer than when they were written.

Constipation

This may be a symptom or complication of another disease or may be caused by an improper combination of feeding stuffs and is in the latter case a disease in itself.

Symptoms: Notice straining and attempts to defecate. Hog dull, listless, loses appetite. Droppings hard and dry.

Treatment: Change feed to a sloppy diet containing bran. Give doses of castor oil or Epsom salts. Rectal injections assist in a more rapid recovery.

Rachitis

This disease is brought about by the lack of mineral matter in the feed. It occurs in growing hogs that are fed daily upon corn. Close, crowded quarters encourage the condition.

Symptoms: Animal seems unable to bear any weight upon hind legs. Bones in hind limbs may become fractured or bent. Distortion of bones of face may take place; this condition being commonly known as "snuffles".

Treatment: Prevention lies in feeding properly balanced rations to the growing hogs. Use with corn a feed which supplies protein and mineral matter in sufficient amount. Feeds which supply protein and mineral matter are tankage, oil meal or buttermilk. Provide comfortable quarters and plenty of room for exercise.

Diarrhoea

Like constipation, it may be a symptom of another disease or it may be brought on by irritant feeds. Sudden change from dry to green feed or irritation from intestinal worms may bring on condition. Treatment consists in avoiding conditions which are favorable to it; if a symptom of another disease, treat the original ailment first. Give light, sloppy diet and physics. Craig advises a preparation of bismuth subnitrate (one-quarter ounce), bicarbonate of soda (one-half ounce), Salol (one-quarter ounce). Give a teaspoonful in drench three or four times a day.

Poisoning

This is a fairly common condition amonge swine, largely growing out of the impression that a hog can thrive on any kind of refuse and waste material. The common forms of poisoning are caused by feeding meat brine, wash water and cottonseed meal. Meat brine will produce poisoning because as a rule hogs are not accustomed to salt and they will therefore eat greedily of the mixture. The brine material causes a severe irritation of the intestines.

Symptoms: Restlessness, convulsions, frothing at mouth, vomiting, severe pain, stupor and paralysis.

Treatment: Produce vomiting as quickly as possible. Give doses of zinc sulphate (15 to 20 grains) in warm water as an emetic. Raw linseed oil will assist in part in relieving irritation of intestines.

Poisoning from wash water occurs when hogs are fed slop to which wash water has been added. When slop is collected from hotels and restaurants, it sometimes happens that wash water has been poured into the slop barrel by careless attendants. Lye is the active poison in wash water. The symptoms are dullness, vomiting, marked diarrhoea, abdominal tenderness and nervousness. Vinegar given in the early stages has a beneficial action, as it overcomes the marked alkaline conditions.

Hogs that are fed cottonseed meal will develop symptoms of poisoning after a period of feeding. There are many other feeds which furnish protein at as low a cost as cottonseed and the owner runs no risk by using them. As a rule, no trouble will result from hogs following steers that are being fed cottonseed because the amount coming through in the droppings is very small.

Homemade Sterilizer for Dairy Utensils

A simple and efficient homemade steam sterilizer can be built at a cost not to exceed $5 to $10.

The ordinary washing of dairy utensils is not sufficient to insure freedom from bacteria. The only safe method of destroying in utensils germs which affect the hygienic and keeping qualities of milk and cream is by sterilization. Even when dairy utensils appear clean, if they have not been properly sterilized they may harbor vast numbers of bacteria which contaminate milk or cream that come into contact with them. Live steam at a temperature of at least 205 degrees Fahrenheit is a thoroughly effective agent and one that this homemade apparatus makes readily available on the average dairy farm.

When placed on a stove or oil heater the apparatus in question develops steam in a shallow pan and introduces the live steam through a pipe into milk cans and buckets. In sterilizing separator parts, small articles and strainer cloths, a galvanized iron box is placed over the steam outlet and used as a sterilizing chamber.

How to Construct the Sterilizer

The sterilizer for cans and milk pails consists of a roasting pan, a specially prepared, insulated cover for it, and a steam outlet pipe that runs through the cover. An ordinary roasting pan of standard size, about 20 inches long, 14 inches wide, top measurement, and three inches deep, will be satisfactory.

The insulated cover for the pan is in three layers, the lowest of which is a sheet of galvanized iron covering the roasting pan and lapping a little over the edges. On the bottom of the cover solder flanges to meet and fit the inside edges of the pan and make a tight cover.

For the steam pipe, cut a hole one and one-half inches in diameter and around it solder securely a steam outlet pipe four and one-half inches high and one and one-half inches in diameter.

To make the second layer of the cover, use a piece of asbestos board five-sixteenths of an inch thick and slightly smaller than the metal sheet. In the center cut a hole which will fit tightly around the steam outlet pipe.

For the top layer of the cover make a shallow pan of galvanized iron 14 inches square with sides five-eighths of an inch high, and cut a hole for the steam pipe. When the pan is pressed down tight on the asbestos, solder it firmly to the steam outlet pipe.

On the pan, solder, on edge, four strips of stiff, galvanized iron three-eighths of an inch wide. They should start one inch from each corner and should run to within one inch of the outlet pipe. These strips provide ridges which raise the milk can from the pan and permit free circulation of steam.

Paper may be used instead of asbestos for the middle layer of the cover. Pack papers tightly to a height of three-eighths of an inch over the galvanized iron bottom, and on top place another galvanized iron sheet of the same size. Solder these two sheets all around the edges so as to make

a tight seam. This makes an insulated cover and pad about three-eighths of an inch thick, which will be found as satisfactory and even preferable to the asbestos insulation.

Source of Heat

The sterilizer may be used on the kitchen stove or other stove or over any other heat that is sufficient to furnish steam at the end of the outlet pipe at least 205 degrees Fahrenheit or preferably 210 to 211 degrees. A thermometer, if placed in the outlet pipe, will show whether the steam is hot enough.

Operating

Place the outfit, with one inch of water in the pan, on the stove, and see that the cover fits tightly. The first steam that comes from the apparatus will have a temperature of about 140 degrees Fahrenheit. Wait until a thermometer placed in the outlet pipe shows at least 205 degrees Fahrenheit. Then place the milk can, previously washed and rinsed, inverted over the steam outlet and resting on the ridges. Sterilize for five minutes, remove, shake out any water, and place the can upright on the floor. The can should be absolutely dry in one or two minutes. If not, it is an indication either that the steam was not hot enough or that the can was not washed clean. Remember that the steaming does not remove dirt, so that previous washing is essential.

After Sterilizing

After steaming, place covers on cans as soon as both are dry and do not remove until the cans are to be filled with milk. The pails, as well as the tank and separator parts, should be kept always in a clean place, out of reach of dust.

WILL SELL WORLD'S CHAMPION BERKSHIRE SOW

One of the most interesting announcements of recent months is that of a public sale of Berkshires to be held by Castleview Ranch, Santa Rosa, early in 1920. J. Francis O'Conor, owner of Castleview, in speaking of this sale, said: "I have had this sale in mind ever since I first began breeding Berkshires some five years ago, but, until now, I did not consider I could offer the class of animals I considered should go into a public sale."

While the herd maintained at Castleview is not the largest it will rank favorably with that of any breeder, blood lines and individuality considered. When the Frank A. Brush herd, a herd famous from one end of the country to the other by the winning of two grand championships at the 1919 National Swine Show, was dispersed, Mr. O'Connor secured such animals as he desired to add to his herd. Among these was the grand champion sow Rookwood Lady 100th, a magnificent animal, representative of all that could be desired in a high class sow.

As a special attraction this sow will be included in this sale. Mr. O'Connor has had numerous offers from Eastern breeders for this sow. Only recently Frank Springer, secretary, American Berkshire Association, tried to secure her for one of the leading herds in the United States. Unless the Western breeders are alert and willing to pay the price such a sow is worth she will no doubt go to some Eastern breeder.

WHEN TO CUT CORN FOR FILLING SILOS

Corn cut when the grains have reached the glazed stage contain almost twice as much digestible matter as corn cut at tasseling time; corn cut at glazing time, therefore, is best for silage.

These statements, says Andrew Boss, of the Minnesota experiment station, are based on analyses made by chemists of the Dominion of Canada at Ottawa, which show that the corn from an average acre cut at the glazing period contains 7308 pounds of digestible matter as against 4220 pounds when the corn is cut at tasseling time.

Samples of corn were analyzed that had been taken at all stages from tasseling to silking, early milk and late milk, and glazing. These analyses show strongly in favor of allowing the corn to reach that stage of maturity when the kernels are well dented or glazed before it is cut. At that time the lower leaves are usually beginning to turn yellow. The figures show that while there is a larger amount of green corn on the acre when the corn is in the tasseling stage, the total amount of dry matter is not nearly so great then as when the corn has glazed.

The dry matter per ton amounts to 285 pounds at the tasseling stage, 323 at the silking stage, 398 in the early milk, 444 at the late milk, and 523 pounds at the glazing stage.

If there is any danger of frost, corn should be cut early rather than allowed to wait for the maximum pounds of dry matter.

SAVE THE JUNK

There is altogether too much junking of farm equipment. It is true that with latest improvements added to implements which are being manufactured today the temptation is strong to throw aside the old implements and purchase, sometimes on the installment plan, up-to-date implements. This is perhaps done with good reason and with profit, but too often the old implement is laid aside because from neglect after use it has lost much in appearance and even more in real efficiency.

Here are four suggestions for stopping this waste in junking farm implements before their appointed period of usefulness has run its course:

Paint every farm implement after every season's use.

Protect all bright metal parts with heavy grease.

Keep all implements under cover.

Keep a supply of spare parts on hand and keep every implement in repair.

There is a good reason for the bright and shiny coat of paint on every new farm implement. It is not there merely to dazzle the eye of the beholder. Nor is its purpose to add an aesthetic touch to an otherwise drab landscape over which Farmer Plowman homeward plods his weary way. It is there because the manufacturer knows that paint is the best preservative for his machinery. He knows, too, that if a coat or two of paint were applied every season to the once bright and shiny wooden parts, and if the metal parts were cleaned and greased at the same time, there would be a far more contented owner of the implement and a more satisfied dealer.

To save a few dollars on a single plow, or harrow, or cultivator, may not seem a big return for the labor of dragging home every implement and taking proper care of it. But the time to paint and care for every piece of farm machinery on the place is during the weeks when outdoor work is slack—when the plowing and planting are done, or the crops are in. Any dealer in paints of standard quality can advise the farmer as to the grades of paint best suited for use on different kinds of farm implements.

As a matter of fact careful painting and housing every season would raise the average of farm implement life in some states much more than a year. These farmers would have four or five million a year to buy extra bonds with.

That is no idle dream—but an actual possibility. Try it. And let the American farmer realize that there is a dollars aud cents advantage in the "save the surface and you save all" doctrine!

Prince Gelsche Walker Korndyke

The first Native Son to sire a 31.80 pound junior three year old daughter. His sire is the only bull in the west to sire a daughter making two world's records. His daughters all have remarkable udders, milk strong and test high throughout their entire lactation periods.

A Wonderful Sire

SIR AAGGIE DE KOL ACME is the only son of the world's record cow for butter in 365 days on strictly official test. His sister, from the same cow, is entering on her seventh month in test and running close to a world's record for a junior two year old.

KING KORNDYKE PONTIAC (shown below), son of the mighty King of the Pontiacs, the bull with more 40 pound, more 30 pound, and more A. R. O. daughters than any other bull in the world.

Sons and daughters of each of these sires will be in our exhibit at the State Fair.

You can use a young bull. Why not one of Jane Garden "Quality" guaranteed right in every respect?

JANE GARDEN FARM
SACRAMENTO — CALIF.

FRED W. KIESEL
PROP'R.

C. W. YOUNG
SUP'T.

Selling Live Stock at Public Sale

By W. S. Guilford

ONE of the most important features of the pure bred live stock game is the selling end. Competition is rather keen in this business just the same as in other lines of industry. The method to be followed will depend somewhat on local conditions, the size of the herd, the general plan adopted for disposing of the surplus, that is, the age at which most of the stuff is offered for sale.

In general there are two methods open to the breeder. He can sell all his surplus at private treaty or he can adopt a plan of selling his yearly productions through a public sale, or he can use both systems. Each plan has its advantages. If the amount of surplus is comparatively small, it is perhaps more satisfactory to sell privately. If the herd is of sufficient size, then the public sale offers a very satisfactory method of distribution. When stock is sold at private sale the selling is a contiuuous business throughout the year, and some money is coming in all the time. Under a system of public sales the year's business is practically wound up in one day, and all the money is in hand and the details of registration, transfer, etc., are largely attended to at one time.

The writer believes that the public sale offers one of the best ways to advertise a herd and farm. Under this system hundreds of people, who are interested to a greater or less degree, come to the place. Thus they become acquainted with the seller and the breeding herd as they would not when private sales were the chief method of selling. Such publicity is good for the herd and for the breed.

When pure bred stock is being introduced into a new community or territory interest can be stimulated through the auction sale as in no other way, and many new herds can be started, while if private sales were depended upon it might take many years before there is a wide distribution.

Many people like to buy at auctions for the reason that they are able to get the benefit of the judgment of other people. If, for instance, a man who is a competent authority on a breed is willing to pay a certain amount for a particular animal, the new buyer often feels much safer in paying $5 or $10 more than he would at private sale. Public sales also serve the very useful purpose of bringing breeders together, and they thus become acqualnted with each other.

That the public sale method of selling live stock is satisfactory is proven by the fact that a large part of the livestock sold in Great Britain passes through the sale ring. It is also true that thousands of head are sold in the Middle West every year under the same system, and the number is increasing.

The general practice regarding the sale of stock at public auction is much the same. Many breeders attend to all the details of the sale themselves, in the advertising, hiring of auctioneers, ring men, catalogs, etc., and in time learn to conduct sales very satisfactorily. There seems to be a tendency though for the business to get on a specialized basis and to delegate the entire arrangements to a sales organization. Such organizations are in charge of experts who are thoroughly familiar with values, who have a wide knowledge of the advertising game and who make it their duty to keep in touch with prospective buyers.

There is such an organization operating in this state—the California Breeders' Sales and Pedigree Co., of Sacramento. The experience of the of the Butte City ranch with this organization has been very satisfactory. The organization enjoys the confidence of the general public, and the manager, C. L. Hughes, is held in the highest esteem by all who know him.

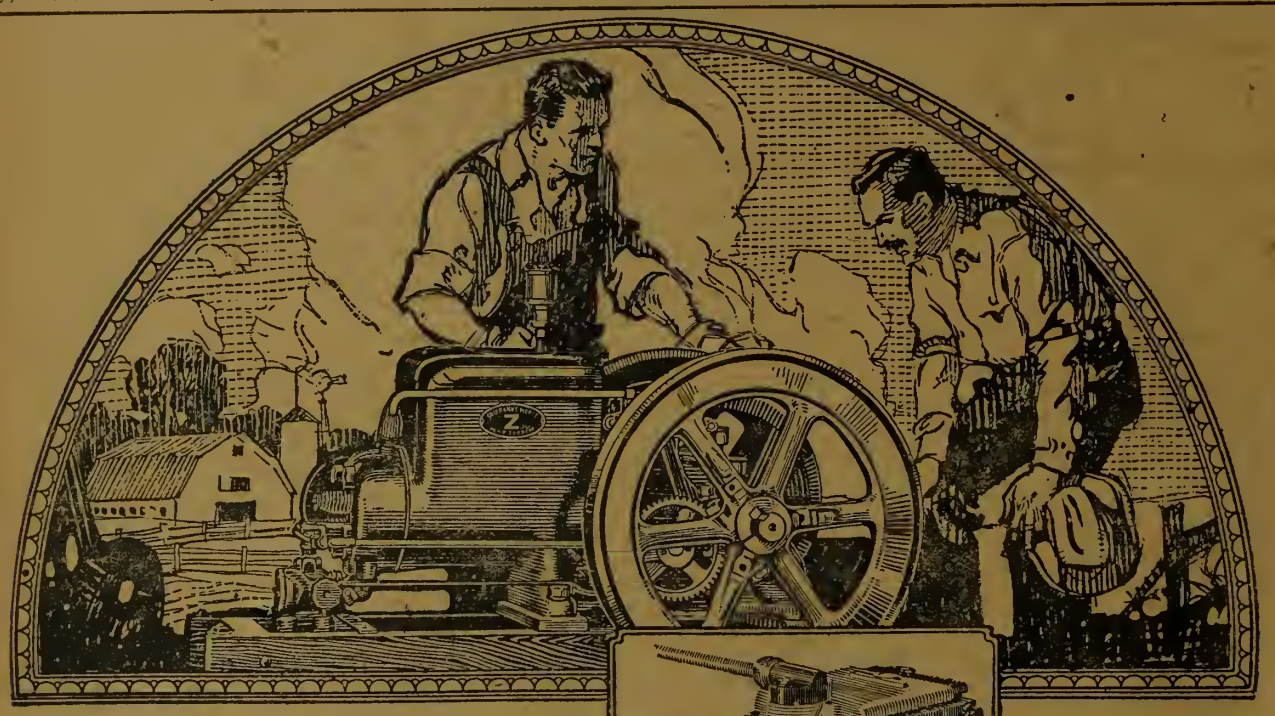
It appears to the writer that the experience such organizations have accumulated through the holding of many sales ls such as to render their services of extreme value.

The growth of the public sale in this state has, up to the present year, been rather slow. This fact is accounted for, I believe, by the fact that until quite recently few breeders were operating on a scale that would permit them to hold a sale of their own. With the marked expansion of the business during the past few years, conditions have changed and the auction plan of selling is becoming very popular. Within a very few years the number of sales will increase materially.

It will therefore be well for the breeding interests to bear in mind that the success of a sale will depend on the confidence of the buying public, and inasmuch as confidence has been built up to the present time, the greatest care should be exercised to see that nothing happens to in the least way destroy that confidence. The breeders of registered Holsteins have been the leaders in the development of the public sale method of selling, and it is a recognized fact that cattle of this breed can be offered at auction and not only bring what they are worth, but find a ready sale.

Many of the leading breeders have made their start in the business with purchases made in public sales, have added to their herds by the same method and are now disposing of their surplus in the same manner.

The auction method of selling is bound to have a wide development in this state and the public can look to these sales as affording opportunities to make selections of high class breeding stock at values that they set themselves.



Fairbanks-Morse "Z" Engine with Bosch Magneto

Farm Engine Supremacy

THE famous "Z" Engine and the Bosch high tension, oscillating magneto combine to make the one SUPREME farm engine. ¶ The dependability of the Bosch in delivering a steady succession of hot, intensive sparks is well known and adds the one possible betterment to the "Z"—always recognized as America's foremost farm engine. ¶ Call on your "Z" Engine dealer and see the result of this newest combination—FAIRBANKS-MORSE "Z" WITH BOSCH MAGNETO. ¶ Over 200 Bosch Service Stations assist our dealers in delivering maximum engine service. ¶ Prices—1½ H. P., $75.00—3 H. P., $125.00—6 H. P., $200.00—all F. O. B. Factory.

Fairbanks, Morse & Co.
MANUFACTURERS CHICAGO

REPAIRS TO AUTO WINDOWS

Nothing so mars the appearance of an auto top as cracked, broken, or torn out rear windows. If motorists knew how easily this condition could be remedied, there would be fewer tops appearing in such a shabby condition.

The work can be done by the car owner himself in an hour of his spare time and the necessary materials—sufficient transparent sheeting and a tube of pyroxylin cement—may be purchased at any auto supply store.

The windows are sewed in with a double row of stitches. First cut the inside row of stitching. Leave the second row. Then cut out the broken light leaving a strip about one-half inch wide all around and held in place by the stitching left intact. Cut the new pane the right size and cement it to the edges left on the old pane.

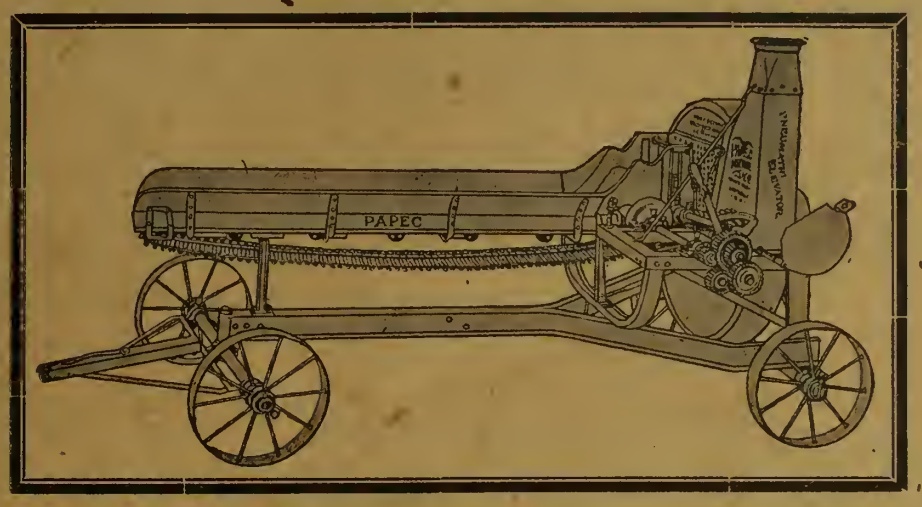
This method makes the cost of the replacement less than a dollar.

It is a fact that the circumference of a pulley or gear is always 3.1416, or approximately 3 1-7, times its diameter. This makes it easy to compute speeds by considering only the diameter of both driver and driven pulleys. For example, belting from one six-inch pulley to another gives the same speed to both, but if the driving pulley has a diameter of 16 inches and the driven pulley a diameter of four inches then the driven pulley makes four complete rotations to one of the 16-inch pulley. If the small pulley is made the drive pulley, then it will make four revolutions to cause the driven pulley to revolve once. The same general rule applies to gears if the pitch diameter and not the outside diameter is taken. Also instead of the pitch diameter the number of teeth in the gears may be considered.—P. Goeder, Colorado Agricultural College.

Perhaps the most interesting metals of all are sodium and potassium. They are usually mentioned together because they act in almost the same way. If a piece of either is placed on water it does not sink but spins over the surface and often, in the case of potassium, bursts into flame. After the metal has dissolved in the water, it will be found to be soapy. If the metal is placed on water colored with red litmus, the water will turn blue. If the metal is placed in pure concentrated sulphuric acid nothing will happen, but if a drop of water is added there will be a violent explosion.—Boys' Life.

Let The Papec Cutter Save Money For You

Fill your silo at the right time. Own a "Papec" and be sure of your winter feed.



Feed cut hay to your stock. It takes less space and stops waste.

Don't wait for your neighbor to fill his silo in order that you may use his ensilage cutter. Get a "Papec." When your silo is ready for filling you won't have to depend upon someone else. The "Papec" will enable you to preserve the full value of your crop by handling it at the right time. This saving will soon pay for your silo.

The "Papec" has a solid semi-steel frame. No screws or bolts to loosen. It requires less power and will handle more ensilage and "throw" it farther than any other. Note the illustration of the wheel. Six fans on cutting wheel do the trick.

The "Why" of the Wheel

An ensilage cutter with four or less fans requires an elevating pipe large enough to receive at least one-fourth of the ensilage cut at each revolution of the cutting wheel.

Thus the Papec, with its *six* fans and *small* pipe, "throws and blows" a steady stream of ensilage with a force more concentrated and with a pressure much greater than a cutter with four or less fans and a larger pipe.

The Papec Ensilage Cutter requires less power and elevates higher. The knives shear keen and clean.

See Our Display at California State Fair, Sacramento

The "Simplex" Silo has stood the test of time and has proved to its thousands of satisfied owners that it offers the surest means of increasing their profits.

The "Simplex" is substantially built throughout. Doors, frames and staves are of *Clear Oregon Pine.* No end joints. Staves and door jambs are in one piece, the height of silo. Hoops are of new steel with heavy malleable adjustment lugs. Doors are of the two way type, swing or lift.

Our interlocking anchor system makes the "Simplex" windproof. Cable braces run diagonally from top to anchor bolts imbedded in foundation. Not a weak place in entire construction.

The Crisell Tangent Top keeps the "Simplex" always in a true circular outline. This is a patented feature of the "Simplex" and one of the secrets of its success.

Increase Your Profits

The "Simplex" Silo and the "Papec" Cutter are a combination that will yield big returns on the investment for many years. They are both guaranteed. Money back if they don't stand the test. Send the coupon for full particulars, prices, etc.

Mail This Coupon Today

SANTA FE LUMBER COMPANY,
18 California St., San Francisco, Cal.

Please send me folder describing Simplex Silos, also information about Papec Ensilage Cutters.

Name .....

Address .....

SANTA FE LUMBER CO. San Francisco

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 33,000 readers, weekly.
Liner rates: Single insertion 3c per word; 35c per issue minimum charge.

FARM LANDS FOR SALE

For Sale on Account of Death and dissolution of partnership, our home of 67 acres; 50 acres in nuts and fruit. Good income. No gravel or waste land; some alfalfa. Beautiful location on the S. P. R. R. 11 miles from Sacramento; 1 mile from Elk Grove. Fine schools; good roads; all conveniences. Place noted for its fancy products. See some of these in Sacramento County Exhibit at State Fair. Buildings, pumping plants, etc. A-1. Price includes tractor, team, farm equipment, farm tools, etc. No better bargain ever offered. Tribbie Bros., Elk Grove, California.

For Sale—Fruit and Poultrymen—It will be to your advantage to write today for information about the Paradise district—deep rich soil—ideal mountain climate. (Above frost and fog.) Electricity and an abundance of pure water.
Choice tracts $100 per acre.
PARADISE LUMBER CO.
Paradise, Butte County, California.

For Sale—$1000, clear 160 acres, 30 miles NE. of San Diego. 25 acres tillable, rolling; 15 bottom, 3 plowed, balance grazing. Small new house. Well, spring, abundance soft water; timber. Fine bee, cow, pig proposition. No trades. E. T. Gray, (Owner), Petrolia, Humboldt Co., California.

For Sale—Improved Farm, 240 Acres, part alfalfa, part corn. Two new houses, barns, corrals, fences, etc. Good loam soil, suitable for alfalfa, grapes or deciduous fruits. Located near Porterville in well improved district. For particulars write to W. E. PREMO, Porterville, California.

For Sale or Trade—160 acre ranch will sell with stock and equipment, or will sell land alone, have A-1 land, near town, lots of water; or will rent to reliable party. I have other business and must sell or rent this place. For full particulars address, Chas. E. Johnson, Yermo, California, Box 34.

IMPERIAL VALLEY RANCHES
Bought — Sold — Exchanged
Money to Loan—Choice 8 per cent First Mortgages for sale. Information cheerfully given.
Western Pacific Securities Co.,
Barbara Worth Hotel Building
El Centro, California.

Livingston Lands For Sale—I have several small tracts of Livingston sandy loam, unimproved, which I will sell at a fair price and on reasonable terms. Will take Liberty Bonds at par in full or part payment. G. H. Winton, First Bank of Livingston.

For Sale—Finely equipped poultry farm at Atascadero, California. Write for particulars and terms. Bestrun Egg Farm, Atascadero, California.

40 Acres, Good Soil; fine for berries, vegetables, poultry and cows; plenty of water and wood. H. Koenig, Fort Bragg, California.

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

For Sale—Choice, young, thrifty Citrus Trees W. W. Burns, 631 Security Bldg., Los Angeles.

GOVERNMENT LAND

300 Million Acres of "Free" land in U. S. "The New Homeseeker" a 104 page book WITH MAPS and ILLUSTRATIONS, showing millions of acres of vacant public homesteads, timber, mines or grazing lands. Founded on historical facts. DOES NOT MISLEAD. Read warnings "official," eliminates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico, Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico. Describes water, soil and climatic conditions, all the principal U. S. land laws. A marvelous publication, just off the press. Mailed anywhere, $2. Address "THE HOMESEEKER," Dpt. M, 3rd floor Grant Bldg., Los Angeles, California.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.
The Yellow Front. Established 1892
112-118 S. Los Angeles St. Los Angeles.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLUETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ENGINES

For Sale—Waterloo Boy tractor, just completely overhauled, engine rebored and guaranteed in perfect mechanical condition. Good reason for selling. Also small Bean thresher. P. J. Weisel, Santa Fe Springs, California.

PIGEONS

Paradise Strain of White King Pigeons. Young unmated birds $2.00 a pair; old mated birds $3.00 a pair. Paradise-Valley Poultry Ranch, National City, California.

FERTILIZER

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons. Phone 101, Watsonville.

MACHINERY

Corn Harvester — One man, one horse one-row, self-gathering. Equal to a corn binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kansas.

Tanks, Tanks—100 used redwood, iron tanks, no profiteering in these prices, which are same as before war: 200 gallons, oak cask, $4.75; 1000, $27.50; 1600, $35; 2000 redwood, $28; 3000, $33; 4000, 5000, $48; 6700, $58; 25,000, $125; 35,000, $185; bunch galvanized tanks, 100 to 3000 gal., make new galvanized tank, 22 gauge, 1000, $39; 2000, $52; go in car door. Cheap freight. Also 50 windmills, 25 pumps, 50 cylinders. DEMMITT CO., 120 N. Main, upstairs. Yard, 816 Yale, Los Angeles.

CATTLE

MERRITT BOWERS COMPANY
Have just purchased
160 head of registered Durham cattle
27 are of the Durham milking strain
60 head of registered Hereford bulls.
We also have on hand
Registered Duroc-Jersey hogs
30 stallions and jacks
Mammoth jacks — Percherons
Shires — Belgians
Coach — Saddle stallions
600 head of choice mules and work horses.
For information write, wire, or phone our breeding and sales barns
Tagus Ranch, Tulare, Cal.
Every animal guaranteed.

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Two registered Guernsey bulls, nine months old, P. J. Weisel, Santa Fe Springs, California.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

WANTED

Attention — Ranch owner; poultryman, very successful, will join you establishing modern up-to-date poultry, turkey ranch, particularly TURKEYS. Special proven system. Will build, equip, stock, run same. Grain ranch essential. No interference with other crops. Separate department. Invest $1200 each. Best investment on ranch. Foothill ranchers save stamps. Highest testimonials and evidence furnished. Call or address C. T. Johnston, 831 S. Flower, Los Angeles.

Wanted, Work on Ranch by married man, life experience, 7 years experience with pure bred pigs, four years with present position. Can give reference. Write F. R. Callaway, Del Sur, California, or Phone Lancaster, Graham Ranch No. 2.

Wanted by married man, good dairy or alfalfa ranch in Marin or Sonoma Counties, on shares or would take position as foreman. Address R. 5, Box 131, Petaluma, California.

Wanted to Exchange — Improved ranch in Tulare County for stock ranch in Northern California. Will accept Liberty Bonds for part or all. Address 154 So. C St., Tulare, California.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Agents Wanted — Sell Automobile Tires and tubes on liberal commission. Address Arnott & Co., Dept. 10, Los Angeles.

Wanted to Hear From Owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Wanted—Pair of Pea-fowl, also young Pea-fowls. State age. E. Borchert, Anaheim, California.

Wanted—Position as foreman on ranch. J. R. Dickson, R. R. No. 2, Highland, California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Write for Circular and Prices of Seeds. Wanted Sudan, Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

HOGS

CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

GRAND NATIONAL CHAMPION
Baron Duke 201st, 200001
Do you realize this is the only opportunity you have ever had on this Coast to secure the pigs of a Grand National Champion? Duke is breeding them long and thick. He is getting old and may die any time. You are started right if you get his pigs. A very good April boar pig sired by Duke and from a half sister of Rincons Rival 2nd, cholera immune, $35.00. Sandercock Land Co., in charge of Natomas Sales, 23 Montgomery Street, San Francisco, California.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

Billiken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Faifadale Farm Durocs, Perris, California. Our $2000 boar, Great Orion Sensation, Jr., heads herd. Fifteen prospective litters by Giant Orion. Write B. H. Wilkinson, Mgr.

Duroc-Jerseys at Ireland, home of Cherry Volunteer II and Ireland's Joe Orion. Ranch at Owensmouth, California, City Office, 1219 Brockman Building, Los Angeles, California.

A Few Poland-China Boars ready for light service by King's Big Bone Leader and President. Priced right. Full particulars on request. John M. Bernstein, Hanford, California.

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Pure Bred Duroc boar farrowed May 12. Golden Model and Defender blood lines. All sold but one, $40.00. W. N. Prince, Spurgeon Bldg., Santa Ana, California.

Pathfinder and King's Col. Stock, immune. Weanlings $25 each. Bred gilts and service boars. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Have Sold All the Pigs advertised recently. Will have fine pigs from spring litters for sale in June. Fine Shropshire ram lambs, pure bred, for sale. J. J. Prendergast, Redlands, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Bergiund, Dixon, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Fine Chester Whites, 2 months, 4 months. Very reasonable. K. Wellman, Los Altos, California.

Duroc-Jersey Swine For Sale, best blood lines. Bred sows and gilts, service boars. Jersey Queen Farm, San Jose, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

A. R. Bardrick, breeder of Duroc-Jersey hogs. Stock for sale. Oceano, California.

El Profito 296867, a 900-lb. line bred Big Timm boar in service. Write. Viola L. Renwick, Santa Barbara, California.

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S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

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For Sale—Golden Pheasants in full plumage. E. Borchert, Garden Grove Road, Anaheim, California.

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For Sale—You will be satisfied with my high grade New Zealand Reds, Pedigree and Utility Stock at reasonable prices. F. R. Caldwell, Broodmoor, San Leandro, California.

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Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Showy Ditch Weed

A subscriber at Brawley sent in a showy flowering weed growing along the water ditches. The first plant sent seemed to be campanulaceous, but as it had no seed pods definite determination could not be made. A second plant, with mature seed pods, showed it to be Vaccaria Vulgaris, the "cow herb," a member of the carnation family.—E. B.

Cactus For Cow Feed

We have fed cactus for five or six years to our cows. First we fed the wild singed cactus and later the spineless. Cactus does not dry up their milk. It makes well flavored milk and firm yellow butter. We chop the cactus into rather small pieces and mix it with cottonseed meal and a little salt. A cow is fed a kerosene can full night and morning. In addition we feed alfalfa and a sorghum fodder. We are planting out more cactus this summer.—A Reader.

Lime on Sandy Soil

I read in the Columns of the Cultivator an article about stone lime as a fertilizer. I have an apricot orchard which is about 10 years old. The soil is a sandy loam and needs fertilizing. Do you think the lime fertilizer would be good and what would it cost? Where can I purchase it?—Subscriber, San Jacinto.

We believe your sandy loam would be more benefited by the application of a vegetable manure, that is, bean straw, stable manure, corral scrapings or the like. A very heavy clayey soil which tends to acidity is very materially helped by the application of lime or better, very finely crushed lime stone. But with little question the sandy loam is not acid and most California soils are sufficiently supplied with lime to meet the requirements of most plants. An examination of the soil, using blue litmus paper to determine as to its acidity and content of vegetable matter would probably enable one to judge fairly accurately as to its needs. A great help toward this determination is observation of the behavior of the soil in the production of the crops.

Curing Skins for Raw Hide

Please give method of procedure to make raw hide from calf skin.—Subscriber, San Jose.

The skin should be salted on the flesh side as soon as the hide is cooled after removal, using ten to twelve pounds to a full sized skin. After salting roll the hide tightly. When ready for tanning place the hide in "soak," simply water to remove blood and salt. After being left in this 24 hours the tail and feet may be cut off and the flesh adhering scraped off, after which the hide should be placed in lime water. To make the lime solution take a bucket of water to each quart of lime. When thoroughly slaked and mixed, immerse the skin and allow to lie for three to four days. Thoroughly wash in cold water. Scour and pound in good soapsuds for half an hour, after which take white vitriol, alum, and salt, one tablespoon each to skin, and dissolve in sufficient water to cover skin. Let remain in this 24 hours. Wring out and dry. To soften, oil with neat's foot oil or currier's oil. It may again be washed out in soapsuds and hung until nearly dry, when it should be worked and softened. If it should remain hard and refuse to soften, repeat the soaking in suds.

Crown Gall

A year ago last February I planted 200 almond trees which have now developed near the base or at the top of the roots a spongy growth. Please tell me what the trouble is and how to cure it if that is possible. If it would be advisable to dig out the trees would it be safe to plant new ones on the same ground?—Subscriber, Denair.

This appears to be a case of crown gall. Where trees are as young as these and the gall is found entirely around the crown we would remove and plant new ones, using greatest care in securing trees free from any root knot or crown gall infestation. Where those now planted are very thrifty and the gall or knot is comparatively small it may be removed with a sharp chisel, taking care to leave no portion of the gall and cut down to healthy clean wood. This cut may then be painted with Bordeaux paste and later with grafting wax or some other protector. If this work is well done the crown gall may not return.

CALIFORNIA SUGAR BEET GROWING

To assist sugar beet growers in deciding upon the best farm practices in raising a crop and determining the cost of production, specialists of the United States department of agriculture have made a study of four of the most important sugar beet areas in the United States. In two of the California districts, Los Angeles and Salinas, on the farms visited more than 50 per cent of the tillable land is utilized in growing beets, while in the other district, Oxnard, over one-third of the tillable land is devoted to this crop. The average acre yields for the three districts during the period covered by the study (1915-16) were: Los Angeles, 14.52 tons; Oxnard, 9.53 tons; Salinas, 15.59 tons. The cost per acre during this period was, for the Los Angeles region, $67.11; Oxnard, $54.88; and Salinas, $66.45. In general, the bulletin says, as acreage increases acre cost decreases, while as yield increases acre cost increases, although cost per ton decreases.

Labor Principal Cost.

Labor was the principal cost item in the three districts, amounting to 50 per cent of the total cost of production, while the use of the land amounted to 35 per cent. The more important factors which enter into the cost of producing sugar beets are labor, interest on land or rental, seed, water, taxes, and insurance. While these factors expressed in terms of money values are variable, such items as hours of man labor, hours of horse labor, pounds of seed, hours of use of equipment, and amount of fertilizers required do not fluctuate appreciably.

Beet tops are usually plowed under in the Salinas area. They are of considerable value for fertilizing the land, the best results being obtained when they are evenly distributed over the field. After they are cut the tops are allowed to remain in the rows, but before the land is plowed they are scattered over the field with a harrow, one harrowing being sufficient. Farm manures are used in the California areas to enrich the soil, but they are exceedingly scarce.

Deep Plowing Needed.

For the successful production of an intensive crop like the sugar beet, it is necessary to have a deep, well-prepared seed bed. In regions where rainfall is limited and occurs mainly during the winter, as in California, it is especially desirable to practice deep fall plowing. This enables the soil to store large quantities of water during the rainy period, and increases the yield by facilitating the development of a beet with a long tap root. On the farms included in the study the depth of plowing ranged from an average of 9.5 inches in the Salinas district to 11.5 inches in the Oxnard district.

After the seed bed had been further prepared by rolling, harrowing, and leveling, the seeding was done from December 1 to June 1, the time varying according to localities. Cultivating ranged from February 15 to July 15, but in the Salinas district it was practiced chiefly in May, June and July. The first cultivation preceded blocking and thinning. In the Los Angeles and Salinas areas irrigation is sometimes necessary, but usually only one irrigation is required.

SPRINKLING NOT BEST WAY

The question of irrigating the vegetable garden, especially in cities and towns where the use of water is more or less restricted, is of considerable importance at this season. The main point in such irrigation is to supply a proper amount of moisture with the least work possible. R. A. McGinty of the Colorado agricultural college gives the following suggestions:

"It is often the custom for gardeners to water with a hose. This is not satisfactory in many cases, however, due to the fact that sprinkling must be continued for a longer time than many imagine, in order to wet the soil thoroughly, and in a very short time the plants need to be watered again. The water so applied usually penetrates only to a slight depth, which encourages the vegetables to form a shallow root system, which allows them to be quickly affected by dry weather.

"The best way to irrigate plants is to make a shallow furrow just to one side of the row and run a stream of water in this. The water from the hose may be allowed to run into a furrow across the ends of the rows and be led into several irrigation furrows at one time. If the nozzle must be left on the hose, as is usually the case, the water may be discharged into a wooden box or old gunny sack, to prevent splashing, and then led into the irrigation furrows. The water should be allowed to run for a sufficient time to wet the soil thoroughly. This may be determined by digging down for a few inches.

"By employing this method, not nearly so much water is lost by evaporation, the surface of the soil does not bake so badly, and the water applied reaches the roots of the plants where it is needed."

SOME INTERESTING METALS

Most people think of metals as heavy, solid, non-combustible materials. What would you think had happened if, after using a spoon on a hike, you had placed it in hot water to wash it and found it, when you came to take it out, at the bottom of the water in a shapeless mass? This would happen if you used a spoon of an alloy of lead which melts at a temperature below the boiling point of water. If you hold a strip of magnesium, a very light metal, in the flame of a match it will catch fire and burn with a brilliant white light. This explains the use of powdered magnesium in flash lights for photography.—Boys' Life for July.

"The borrower is a slave to the lender and the debtor to the creditor. Be frugal and free."—(Benjamin Franklin. Buy W. S. S.

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Tuesday, September 16th, 1919

The offering will include imported cows as well as cows selected from some of the best herds of the United States and Canada.

Many of the females are out of dams with official Canadian Record of Production records, and the breeding throughout represents many of the most favorably esteemed Ayrshire families.

There are a number of granddaughters of Willowmoor Robinhood, whose dam, Netherall Brownie 9th, made 820.9 lbs. butterfat from 18,110 lbs. milk in one year.

There will also be sold a number of granddaughters of the famous imported bull Beuchan Peter Pan, grand champion at the National Dairy Show and at the Panama-Pacific International Exposition.

The bulls will include the two herd sires, STEYBRAE MASTERPIECE, a 3 year old, and PRESTON PREMIER, a beautiful two year old. In addition to these there are a few sons of the best cows in the herd, ready for service, and several younger bulls.

THESE ARE CLEAN, HEALTHY CATTLE. THERE POSITIVELY IS NOT AT PRESENT, NOR HAS THERE BEEN ANY CONTAGIOUS ABORTION IN THIS HERD. THE NUMBER OF CALVES IN THE HERD, TOGETHER WITH THE LARGE NUMBER OF FEMALES DUE TO CALVE SOON, TELLS THE STORY IN THIS RESPECT.

Every animal over six months of age tuberculin tested by a State veterinarian.

This is a rare opportunity to secure well bred, healthy, registered Ayrshires, in an excellent selection ranging through mature cows, bred and open heifers, heifer calves, service bulls and bull calves, and every animal goes to the highest bidder without reserve or limit.

Catalog of sale is now being prepared and will be mailed free on request.

Sale Starts Promptly at 10 A. M.

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California Breeders Sales and Pedigree Co.,

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SACRAMENTO, CALIFORNIA.

The Outlook For Draft Horse Breeding.

By R. P. Royce

WHEN the ledgers begin to make their inevitable charges, the horse will have his due or I am mistaken." The remark just quoted was recently made by W. J. Sour, superintendent of transportation, Wilson & Company, Chicago, in an article written for the Breeders' Gazette. For fear that some might regard the above remarks as being made by a prejudiced friend of the horse, we quote further. Mr. Sour says: "I have no axe to grind. I am interested in two things only: Keeping down the costs and securing the utmost efficiency in deliveries. . . . I am not interested in the horse business. . . . The figures I present tell their own story. We could no more do without the trucks to deliver our product within a radius of 30 miles than we could do without teams to do our work close in, within a radius of 10 miles of our plant."

The above should be of interest to all and should furnish food for thought for those who have been preaching the doom of the horse and encouragement for those who have held fast to the belief that the horse is still a factor in the haulage, transportation and power problems of our daily life.

During the past few years the horse business has undergone a profound change. Of that fact there can be no doubt. With the marvelous development of the automobile, truck and tractor industry, horse breeding has been forced to undergo a tremendous readjustment. This readjustment is still going on, and for that reason, it is well for those who are interested to view the problem in a sane and calm light.

Aside from the fact that the horse business has always been operated on a more or less sentimental basis, and that it has been surrounded with considerable romance—perhaps more romance than has been given any other branch of live stock production—it is utter folly to deny the changes that the past few years have wrought, or to go to the other extreme and assume and admit that the horse is done for.

The primary reason for the use of horses was the fact that horse power was efficient. Had any other form of power been discovered it is certain that it would long ago have superseded the horse. Despite the fictionists and poets, the world has always been a practicable world—only those things that fitted into the general scheme of things have been given a place, and only for so long as conditions justified their continuance. There is no mistake but that the automobile has very largely displaced the light horse for both business and pleasure.

Of course, certain types of pleasure horses will continue in demand purely for pleasure, not because they are economic necessities. But how about other types, the draft horse, the real work horse? Unless he fits in somewhere he must go, but so long as he fills a place economically he will continue in demand. Does he fit in? Is there a demand for such a type? In the face of public opinion it is necessary to make clear the economic status of the horse.

There has always been and always will continue a demand for power. The industry of the world is based on and is dependent on horse power. It matters little whether horse power is

The Kind of Stallions Needed in California

Aiglonel, four year old Percheron stallion at the head of the University Farm Stud.

A Profitable Kind of Mare

Poule of Palcines, a pure bred Percheron mare owned by the University Farm. Mares of this type will pay their keep with work and raise a profitable colt. The colt was sired by Aiglone, owned by University of California.

furnished by horses or some other form. Power is needed and the only kind that the world looks to is the cheapest form of efficient power. Now unless it can be demonstrated that the horse is efficient and more economical at certain work than other forms of power, there is no rational reason for arguing the case of the horse. But if it is proven that there is still a place for the horse to fill, the wise man will see the opportunity, familiarize himself with the kind of horse needed and set about to produce that kind.

The necessity for the horse in farm work is too generally admitted to need comment. The farms of America will always require horses. What the horse producer wants to know is whether or not he can expect a profit for his surplus horses. Will it pay to raise horses, and if so, what kind.

The horse market has always been based on the demand furnished by city users. Does that demand still exist and is it likely to continue? Can the horse compete with the truck? Here is what Wilson & Company have found out, and the facts are declared to be "in general agreement with other traffic managers." According to the carefully compiled costs of that firm, it costs approximately twice as much per ton to make deliveries in the Chicago territory with trucks as with horses. The figures follow:

WAGON REPORT

	Single Wagon	Double Wagon	Four-Horse Wagon
Days in service.	26	26	26
Hours in service.	325	326.5	337
Pounds hauled	132,007	274,000	517,500
Miles traveled	599	297	483
Loads	56	62	53
Average pounds per load	2,357	4,418	9,764
Average miles per trip	10.6	4.8	9.1
Average stops per trip	10.9	1.6	1.4
Stops	614	101	77
EXPENSE			
Interest, 6 per cent	$ 1.50	$ 2.25	$ 4.24
Depreciation	4.42	6.80	13.10
Fire insurance	.28	.56	.84
Liability insurance	1.68	3.36	5.00
Labor, driver and helper	138.13	146.93	171.87
Stable help	2.00	4.00	8.00
Oats	9.36	18.72	37.40
Hay	7.35	14.79	29.39
Straw	.96	1.92	3.84
Shoes	3.40	6.80	13.60
Medicine	.20	.40	.80
Grease	.20	.40	.80
Estimated repairs and overhauling	5.00	6.15	9.61
Licenses and tools	1.80	3.60	5.40
Total expense	$176.28	$216.68	$303.89
Average cost per cwt. hauled	$.133	$.079	$.059

TRUCK REPORT

Days operated	24
Hours operated	271.5
Pounds hauled	118,978
Mileage	1,162
Loads	48
Average pounds per load	2,478
Average miles per trip	24
Average miles per gallon gasoline	5
Average stop per trip	9

EXPENSE

License for month	$ 2.76
Mechanics' labor	25.25
Parts	44.63
Interest	8.16
Depreciation	30.00
Insurance	6.72
Drivers labor	125.09
Garage expense	9.24
Gasoline	44.88
Oil	4.30
Grease	.75
Alcohol Glycerine	.98
Total expense	$302.36
Average cost per cwt. hauled	$.25
Average cost per mile	$.25

"The trucks referred to are of two-ton capacity. They are geared at 30 miles an hour. They cost $2200 each. Sixteen of them are used to deliver packing house products in the Chicago suburbs bounded by Waukegan, West Chicago and Gary. They leave the Wilson plant at 6 a. m. and get back at 4 p. m. They are out on the long drive only three days a week. One extra truck is used for replacement purposes. It replaces a different truck every day, so that one truck is overhauled every 16 days. This system is found to lengthen the truck's life by two years. The cost of delivery will be five cents per cwt. higher this year than a year ago, because the trucks are a year older and require more repairs, tires and so on.

"The Wilson delivery teams weigh from 3200 to 3500 pounds. They journey to the loop with more than two tons to the load. They may be loaded up to four and one-half tons, or more than twice as much as the trucks will carry. An overloaded truck soon goes to pieces; an overloaded team will struggle along for a while and the owner is out only an extra handful of oats. A single horse will haul easily 4000 pounds, which is the capacity load for one of the trucks in question.

"Our horses actually last 15 or 16 years in harness, though we figure the depreciation on teams at 20 per cent per year as compared to 25 per cent on the trucks. I recently sold a team which had been in service 17 years for $100; the horses were 21 and 24 years old. The company owes most of the horses and equipment a lot of money. After they work five years they are clearly 'in the velvet.'

"The average cost of teams is about $500. A double wagon costs $375 and harness about $95. The highest-priced work horse in the Wilson stable cost $287."

The above has been quoted at length because the information set forth is unimpeachable and is one of the strongest arguments for faith in the continued demand for draft horses.

That Europe will require large numbers of heavy horses is an established fact. Exports are being made weekly. The big problem for the horse raiser to solve is the production of the kind of horses that are and will be in demand. Beyond a doubt the type of horse that will sell to advantage is the big, sound draft horse of quality. The market will not tolerate small and unsound stuff. Such being the case it behooves mare owners to pay more careful attention to the kind of stallion they patronize and then remember that size only can be developed by a practice of liberal feeding.

Spend thought before you spend money; you will have more for your money and more money left for your thought. Buy W. S. S.

HE DIDN'T TAKE THE CULTIVATOR EITHER

To the concluding paragraph of this item add its head and you get the answer to the problem stated by a writer in an agricultural college news bulletin.

A man we once knew never seemed to get along very fast, and everybody wondered why. He was a man endowed with average intelligence and a hard worker, but he never seemed to amount to much so far as influence in his community was concerned and he did not make a very big success on his farm, although he did make a fair living. He never knew when a sale was coming off where he might pick up a valuable cow or horse or piece of farm machinery; he and his family missed half of the fun of living because they never knew when things it was good to go to were going to happen; he sent his crops to market when they were harvested and took whatever the market price happened to be that day without any thought of watching for propitious times; he not only knew little of what was going on in the outside world, but he did not know what was going on within his own county, his own home town and even his own farming district. Consequently his friends seldom stopped to chat about public matters and he was never consulted regarding any movement for community betterment.

This man did not take his home town newspaper.

The cannery at La Sierra Heights is now operating on peaches. It expects to run a full force of employes until the middle of December.

There is Money in Good, Sound, Draft Horses

Read This:

Good big, sound, draft horses of quality are worth more money today than ever before. The market is greater than the supply. The economic status of the horse is unquestioned. He holds and fills a place that can not be taken by any mechanical contrivance. Many big city firms are replacing trucks with horses because the horse is more economical. Europe is short on horse power and it will take years to supply that demand. Already the export trade has reached large proportions and is only limited by the lack of shipping space.

Now is the time for Foresight

During the past few years the decrease in the number of mares bred has been alarming. The result is inevitable. There will be a marked shortage in horses. As a matter of fact the shortage is already at hand, and is bound to increase. The man who sees the opportunity and prepares now to meet the great demand is certain to reap splendid profits. The man who makes the most money is the man who has an article to sell when the demand is keenest. Now is the time to use foresight. But, keep this fact in mind: only big sound horses will be in demand.

See My Percherons and Belgians at the State Fair

I will have an extensive exhibit of both PERCHERONS and BELGIANS at the State Fair and I feel sure that among them are horses that will please the most critical buyer. I know the kind of horses California needs and I have that kind. Considering the quality, the prices are right.

I will be pleased to have all who may be interested call at my stalls and inspect my exhibit.

N. W. Thompson,

Patterson **California**

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We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

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$150,000 for Prizes

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Breeders of Holsteins unanimously voted to quadruple the fees for recording transfers of their cattle sold, and spend the income therefrom to place the merits of this greatest of dairy breeds before the public. If interested in

HOLSTEIN CATTLE

send for our booklets and inform yourself on how to make money in breeding dairy cattle.

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Registered Shorthorns

and

Berkshires---Both Sexes

H. L. & E. H. Murphy

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Some of the finest

GUERNSEYS

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Only Bull Calves For Sale

ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. $2.50 per bottle, delivered.

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ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price $1.25 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Grass Shorthorn Steers Weighed 1515 Pounds

One hundred and fifty Shorthorn steers, never having tasted grain, grown and marketed by the Pacheco Cattle Co., Hollister, Calif., had an average weight of 1515 pounds as three-year-olds.

That's where the Shorthorn has an advantage.

They were pronounced by many experienced judges as the best and heaviest grass-fattened steers ever marketed in the West.

It pays to grow Shorthorn beef.

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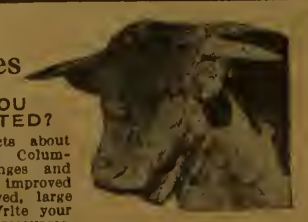
Cattle Ranges



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In knowing facts about Central British Columbia Cattle Ranges and mixed farming, improved and non-improved, large and small? Write your requirements, resources.

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Beef Cattle Specialist

For 30 years I have been devoting my entire time to pure bred beef cattle. I know the kind of cattle California needs and where and how to buy. I make regular trips to the great producing centers and will buy on order. Best of references. Satisfaction assured. Correspondence invited.

R. M. DUNLAP, Hotel Land, Sacramento, Cal.

RUSSIAN SUNFLOWER MAKES GOOD SILAGE

Silage made from Russian sunflowers has attracted considerable attention in western Colorado and parts of Montana. All who have fed it are very enthusiastic over the results obtained. For dairy cows, sheep and beef cattle it is proving an excellent feed. G. S. Ray of the Colorado agricultural college has the following to say regarding the growing of sunflowers for silage.

"The yields obtained from sunflowers are much greater than from corn. Twenty to thirty tons per acre under irrigation are the ordinary yields for sunflowers while corn under the same conditions will yield but ten to twelve tons. In Montana, 25 to 39 tons of sunflowers per acre are reported. The Nevada experiment station harvested 23 tons of sunflower silage per acre, while corn in the same experiment made about 14 tons. On dry farms, sunflowers have produced from three to 8.5 tons of silage per acre.

"Sunflowers also seem well adapted to localities too cool for corn. They will make a silage crop in a shorter season than will corn. They may be planted very early in the spring; light frosts after the plants are up are not injurious.

"Sunflowers are usually drilled in three and a half foot rows with the plants three inches apart in the row. Planting is done with an ordinary corn planter or a grain drill. Where a grain drill is used, a sufficient number of feed cups must be stopped up to give the required distance between rows. On irrigated land, eight or nine pounds of seed per acre are used, while five pounds are sufficient on dry farms. Seed bed preparation, cultivation and irrigation are practically the same as for corn.

"Sunflowers are ready for the silo when the seed is in the milk stage. They should be harvested with a corn binder (or by hand if the acreage is small) and run through a silage cutter which will chop the plants into pieces one-fourth to one-half inch in length. To prevent spoilage, thorough packing in the silo is very essential. Ordinarily, no water must be added to the silage as the plants contain a sufficient amount themselves."

"DE WORLD DO MOVE"

By Carl Machold

"Marse, that big tractor edition of the Cultivator you gave me a while back sent me to "scratching" the long, long ago, in fact, 'way back yonder when I was a boy in beautiful Ohio, in the Scioto valley bottoms just south of Columbus," was the greeting the writer received the other day from an aged colored man to whom, after carefully reading it, he had given the 48-page tractor edition of the Cultivator.

Continuing, the colored man said: "My father and his family were taken to Ohio and given their freedom for saving the life of a boy whose name was John R. McLean and who afterwards published the Cincinnati Enquirer. One day, the owner of the broad, black field of corn we were planting, after reading the paper, handed it to me just as you did last week, Marse. It was the Ohio Farmer, published at Cleveland, by a man named Lawrence, a four-page farm paper. I was pleased to think that a rich man would give me, a colored boy, a paper to read, and I will surely always remember him for it. I read every line in that paper, advertisements and all. I have kept that paper all these years and occasionally read it over again. In the fall of the same year, 1848, the boss gave father and myself a ticket to the Ohio state fair at Columbus and gave me two half dollars to spend for myself. In one small tent I saw some fair editions of the Ohio Farmer, and the man in charge gave me several different copies and wanted to know if I wouldn't like to subscribe. My hand was tightly clutching the two half dollars in my pocket and my heart was in my throat, thinking of all I had intended to get for that money. I gave the man the two highly prized half dollars and received the paper for a year, and the next year at the state fair he remembered me and I subscribed again and still take it.

"The principal ads in that 1848 paper were for Morgan stallions. Implement dealers advertised "A" cultivators, plows, wagons, carryalls, etc. It was the horse ads that interested me most, and I will always remember the pictures and description of the "Flying Clouds, the Mambrinos, the Messengers, the Black Clouds, and even now when I read over my horse paper I note that even though they are all dead these many years their blood goes flowing on in the trotters and pacers of today. No sir, there were no Hambletonians mentioned. If I remember rightly, Rysdack's Hambletonian, the father of the American trotter, was foaled in New York state the next year after I read my first farm paper in 1848. And by the way Marse, I sent that tractor edition back to friends in Ohio and told them to subscribe for the best farm paper on the Pacific Coast."

BLASTING ALKALI LAND

Serious alkali conditions can be corrected, at least sometimes, by the help of soil blasting. Owners of soil that is showing this trouble should inform themselves of what may be done.

To make the matter clear, a brief review of what takes place when a soil becomes alkali is desirable. Two processes are responsible for the condition, both of which are products of cultivation. In the first place improvement in soil tilth and granulation improves capillary movement of water from deep in the soil to the surface, where some of it evaporates, leaving a crust of the salts it carried. If this process is allowed to continue unchecked by surface mulching the alkali is bound to accumulate to a damaging extent in a short time.

The second process is the rise in the water table in the ground, due to irrigation. In arid regions the level of standing water in the ground is far below the surface. Even if the subsoil contains much alkali it stays down beyond the reach of roots because there is no free water to bring it up. But when irrigation wets the under soil the alkali is dissolved and brought up to the root level, with serious results.

As is well known, these accumulations of alkali can be removed by leaching them out of the soil with plenty of water. To accomplish this, however, and to do it with two or three washings, or less, the drainage must be far better than the average soil possesses without special treatment. This is where blasting is of such help. It opens the lower soil and permits the water to filter away freely and at depths below the level of most roots. In consequence the top two or three feet of soil is made almost entirely free from alkali. Emphasis must be placed on this matter of blasting, lowering the level of drainage through the soil. Without it the free water follows through slowly, at only one or two feet under the surface, and there is not enough alkali-free soil above this level to feed crops.

In the broken subsoil the water is let in quickly. In it, also, the water level after the alkali is removed can be kept lower while still supplying crops amply, because capillary movement is so much improved, thus the danger of another accumulation within the root area is largely done away with.

White alkali should be leached out without preliminary preparation. Black alkali, of course, should be treated with gypsum if possible before the leaching is attempted, since the chemical change effects results in swifter removal and a cleaner job.

YELLOW OATS ARE "WHITE"

One of the features of the new federal oat grades which will become effective on June 16, 1919, is that yellow oats are classed as white oats and can take any numerical grade subject only to general appearance and the color requirements for each grade. This will permit yellow oats of good creamy white appearance to grade as high as No. 1, the United States department of agriculture states. The old standards in many cases prohibited yellow oats from grading higher than No. 3.

Regarding the economic value of cactus S. Fox writes that he thinks it has a great value as a gum yielding plant. He says that at certain times of the year after it flowers the leaves or lobes are full of sticky elastic juices.

Glenn County For Pure Bred Livestock

DUROC-JERSEY BREEDERS

We aim to develop and maintain one of the greatest breeding herds of DUROC-JERSEYS on the PACIFIC COAST.

¶

40 BROOD SOWS are now in the herd. A number of sows as good as can be found will soon be added to the herd.

¶

A BOAR of type, quality and of blood lines to justify placing at the head of such a herd will be secured.

¶

240 SPRING PIGS from which will be selected the extreme tops for our herd are now being developed.

You Will Eventually Come to This Herd for Durocs

F. D. BURR
(235 Montgomery St,
SAN FRANCISCO
Orland, Cal.

Valley View Farms

DUROC-JERSEYS

One of Glenn County's Foremost Herds

90 PIGS TO SELECT FROM 90

Our herd is headed by two great boars: UNEEDA SENSATIONAL DEFENDER, sired by SENSATIONAL DEFENDER. He is a line bred, big type-boar of huge bone and extreme size, purchased direct from McKee Brothers' herd in Kentucky; and SAMMY KING'S COL., a great individual. CHERRY KING ORION, GOLDEN MODEL AND COL. breeding are the blood lines in our herd.

W. T. Hollingshead & Sons
Box 505 ORLAND, CALIF.

- Big Type -

Duroc Jersey Swine

FOR SALE—Spring pigs, both sexes. They are long, high backs and are real good prospects. Will sell reasonable.

C. D. BRIGHT Glenn P. O., Calif.

Scott Farm

Duroc Jersey Swine

Uneeda Wonder and Defender Breeding.

C. W. Scott, Willows, Cal.

Uneeda Glenn County Duroc-Jersey Herd

Our record of the past five years, the high standard we have attained, the number of high class animals we have distributed and the number of new breeders we have started, entitles this herd to rank as the

Key Herd of the Pacific Coast

Why do breeders look to this herd for new blood?

Why do farmers come to this herd for foundation stock?

Why has this herd been responsible for starting more new breeders than perhaps any other herd?

Here Is the Answer

For years this herd has been the largest winner at the leading fairs.

For years we have been breeding and selling superior Duroc-Jerseys. This commanding position has been attained only by hard work, large expenditures and the purchase of breeding stock from the best herds in America.

We are usually in a position to supply your wants and we take great pleasure in sending full particulars regarding anything you want to know.

H. P. SLOCUM & SON :: WILLOWS, CALIF.

Breeders of the Highest Quality Duroc-Jersey Swine

Glenn County For

R. J. YATES :: :: ORLAND, CALIF.

BIG TYPE POLAND CHINAS - HERD BOARS

LONG JUMBO, by Mouw's Smooth Jumbo, Twice Grand Champion
Yates' BIG ORPHAN, by BIG ORPHAN

...FOR SALE...

Two Young Boars--One by LONG JUMBO and the other by HATHER'S BIG ORPHAN. Spring Pigs of either sex.

SEE MY HERD AT THE STATE FAIR

THE KEEP ON HERD OF REGISTERED JERSEYS

In selecting your herd bull it will be wise to see that it comes from the "Keep On Herd" as it will be a practical guarantee of type and increased production. This bull would come from high record, R. M. dam and sired by a grandson of Champion Flying Fox. If you write quick you might secure one of the two yearlings we are just offering. Our show herd will be at the State Fair. **H. W. HAND, Registered Jerseys; Orland, Calif.**

Glenn County

Shorthorn Breeders'

Association

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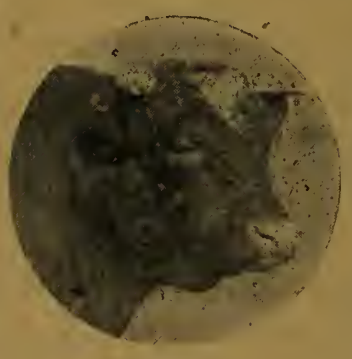

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The first County Association in California organized to make Glenn County the Shorthorn center of California.

Butte City Ranch Shorthorns

Herd headed by VICTOR STAMFORD, a grandson of WHITEHALL SULTAN; and Herman The GREAT, a grandson of CHOICE GOODS. Stock for sale at all times.

Next Auction Sale at the Ranch, April 17, 1920

We also breed Berkshire swine, Shropshire sheep, Shetland ponies, Bronze turkeys and White Plymouth Rock chickens.

Butte City Ranch

Box C, Butte City, Glenn Co., Calif.

W. P. Dwyer & W. S. Guilford

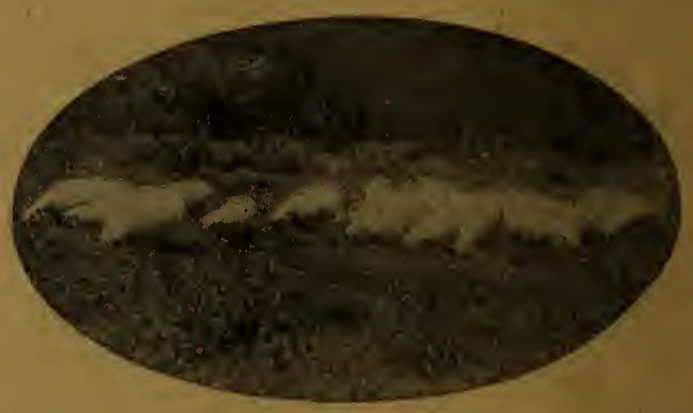
Glenn County

SHROPSHIRE BREEDERS'

Association

There are a great many fine registered and grade Shropshire flocks owned in Glenn County. Among the breeders and owners are: Morris Merrill, Frank B. Glenn, W. W. Foster, A. E. Slocum, A. H. Culver, Superior California Farm Lands Co., Willard & Garnett, Jo Johanson, Van Bernard, O. L. Raper, A. J. Morey, Chas. E. Barrows, Guilford Farm, Butte City Ranch, H. P. Slocum & Son, Logan Ranch, Curry French, J. F. Garnett, Mallon & Blevins and many others.

Come to Glenn County for Shopshires



Butte City Ranch Shropshires

Over 150 registered ewes in the flock. Best blood of Minton, Tanner, Cavendish, Wardwell and Braughton represented. Foundation flocks supplied.

Next Auction Sale at the Ranch, April 17, 1920

We also breed Shorthorns, Berkshire swine, Shetland ponies, Brozne turkeys and White Plymouth Rock chickens.

Butte City Ranch

Box C, Butte City, Glenn Co., Calif.

W. P. Dwyer & W. S. Guilford

Pure Bred Livestock

Berkshire Breeders

EAST, NORTH, SOUTH, WEST---Wherever Good Berkshires Are Known

STAR LEADER

HOLDS the commanding position of Premier Berkshire sire. Should there be any question why his get are in such demand everywhere? Champion Value 10th by Duke's Champion 12th, recently secured from the Barker herd, will be mated with Star Leader's daughters.

Anchorage Farm is in position to supply animals of the greatest blood lines and individual merit for the breeders.

ANCHORAGE FARM Orland California Quality Products

We can offer now bred sows and gilts for fall farrow and younger animals of both sexes. Anchorage Farm is always pleased to answer inquiries.

Anchorage Farm guarantee goes with every animal sold.

ANCHORAGE FARM, Orland, Calif.

MILLS' Berkshire Farm...

Representative of All That Is Desired In Berkshires

AMES RIVAL 70th, the Grand Champion Boar of 1918, and deservedly so, heads our herd

THE LARGEST BERKSHIRE HERD ON THE PACIFIC COAST

AMES RIVAL 70th, is a pork-maker sire and his get are in strong demand by the real pork maker—the farmer. Assisting him,

Winona Compton Champion 8th, Mills' Improver B, and. Penrith Lustre 1st.

OUR SOW HERD

is typical of the breed; the blood lines are of the best and have been selected without regard to the expense.

We are always glad to answer inquiries as to stock and visitors are always welcome.

MILLS' BERKSHIRE FARM, Hamilton City, Calif.

BUTTE CITY RANCH BERKSHIRES

Grown under normal, natural conditions—with diversity of feed and plenty of exercise. Home of the famous BUTTE CITY PRINCESS family, founded by the champion sow, ESCALON FASHION Princess.

HERD SIRES NOW IN SERVICE

BUTTE CITY AMOS, a son of GRAND LEADER 2d and out of ESCALON FASHION PRINCESS.

BUTTE CITY ONWARD 9th, a son of ONWARD out of GRAPEWILD BELLA, a big type HUMPHREY sow.

Superior Lustre, a son of SUPERIOR.

THE SENATOR, a son of ONWARD out of IOWANA BELLE 16th, a big type IOWANA sow.

Next Auction Sale of Berkshires at the Ranch, April 17, 1920

WE ANNOUNCE

the establishment of the PACKER BEND BERKSHIRE herd, owned by Senator FRANK W. LEAVITT and J. F. CAMPBELL. PACKER BEND FARMS adjoin the BUTTE CITY RANCH on the South. Campbell and Leavitt will probably hold a public sale of Berkshires in the 1920 fall circuit of registered live stock sales in Glenn County. The PACKER BEND BERKSHIRES are exclusively of BUTTE CITY RANCH breeding.

WE ALSO ANNOUNCE

the establishment of the ISLAND ORCHARD BERKSHIRE HERD, owned by Jackson James and F. M. Porter. The Island Orchards join Butte City Ranch on the North Porter and James will probably be in a position to hold a sale in the 1920 fall circuit. Like the PACKER BEND herd the ISLAND ORCHARDS BERKSHIRES are exclusively of BUTTE CITY RANCH breeding.

Berkshires are mighty popular in the Butte City district. We always have pigs for sale. Butte City Ranch breeds Shorthorns, Shropshire sheep, Shetland ponies, Bronze turkeys and White Plymouth Rock chickens.

BUTTE CITY RANCH :: W. P. DWYER AND W. S. GUILFORD, Owners

Box C, Butte City, Glenn County, Calif.

GRAPE WILD FARM

Berkshires :: :: Guernseys

At present we have no Guernseys for sale except some *Young Bulls* up to nine months of age.

In Berkshires we can offer only *Young Boars and Gilts,* of Spring farrow. Most of these are sired by *Big Leader,* the greatest son of Grand Leader 2nd, World's Fair Grand Champion. All of our younger entries at the *coming State Fair* are sired by this Boar.

We invite the public to look up our herd of *Guernsey Cattle* and *Berkshire Hogs* while at State Fair, opening this year upon August 30th.

A. B. HUMPHREY, Proprietor

Escalon, San Joaquin County, Calif.

Baron Duke 201st

GRAND NATIONAL CHAMPION

See his pigs at the State Fair. Some very choice boar pigs from 650 pound sows of world champion blood at no higher prices than asked for ordinary pure bred pigs. All animals immunized against cholera and swine plague. Get free catalog with many pictures and full history of one of the greatest herds in the United States, just off the press.

SANDERCOCK LAND CO.

25 Montgomery Street San Francisco, Calif.

In Charge of Natomas Land Sales

Putting Berkshires Across

By Frank B. Anderson, Secretary, Western Berkshire Congress

WHEN the East begins to come to California for carload lots of pure bred breeding animals, it's a fair sign that the stock from this state must be pretty good stuff. That is what Eastern Berkshire hog breeders are doing, so we of the West pride ourselves a little on having some good seed stock out here when our pigs attract Eastern buyers who ship them to the Atlantic seaboard and into the Southern states.

This outstanding fact alone is something worthy of consideration on the part of the farmer or business man contemplating going into the hog business. The pioneers of the pure bred breeding game on this coast were obliged to send East for foundation stock. Many of them are yet doing it and will continue to do it in a small way, but the good selections made years ago by the beginners, who are the veterans of today, make it easier for the man now contemplating starting a herd. This not only applies to Berkshires but to other breeds of swine and to cattle as well.

Having orlginally stocked their farms with the best they could get in the East, the Western breeder set out to have something just a little better. Careful selection is the most essential duty of the breeder of pure bred live stock, and the Berkshire hog in California today is the product of that very careful selection on the part of the early breeders, plus the later day selections of the sons of great sires from the tops of the Eastern and Middle Western herds.

The above speaks a lot for this breed of swine in the West. I mean by that the Pacific Coast, as Berkshire progress all along the coast and into Nevada has been about the same. This was ably demonstrated by the winnings of the splendid herds from various Western points at the Panama-Pacific Exposition.

The pioneer work of the breeders of some years ago makes it easier, as I say, for the beginner of today, but present day breeders are going to make the game better for those who follow and those just venturing forth into the pure bred Berkshire hog business. The Western Berkshire Congress is the medium through which this breed promotion work is being handled in the West.

There are many ways in which the Western Berkshire Congress would like to push the breed a little stronger, but its membership is made up of farmers whose other duties do not permit them giving quite the time to this sort of work that they would like. However, the progress made during the past spring, through the holding of four so-called promotion sales, has been an achievement worthy of mention.

When A. B. Humphrey of Escalon, who made himself famous in Berkshire circles by showing the grand champion and reserve grand champion boar at the World's Fair, called his directors together upon being elected president of the Western Berkshire Congress and asked: "What are we going to do to put 'Berkshires on Every Farm' as the breed slogan calls for?", J. Francis O'Connor, owner of the Castleview herd at Santa Rosa, was ready with a real good suggestion. "Let us take our pigs to the farmer's front door and sell them to him at his own price," said O'Connor, and from this sprang the promotion sale idea.

Starting at Martinez in April, four sales were held, Dixon, Santa Rosa and Salinas being the other locations. In each town some local breeder looked after local arrangements and the officers of the congress joined in with what assistance they could give besides consigning real good hogs from their herds.

"We are not expecting a great deal of money for these pigs, but would like to get a fair price. I dare say that we will not come anywhere near getting the money for them, laid down here at your door, that we would at home." This is somewhat the remark President Humphrey would make at the opening of these sales, and it pleased the farmers. They saw that the Berkshire breeders were not out to force the sale of their hogs, but to give the farmer an opportunity to get started right in the pure bred business. He could see the hog in front of him and pay whatever he felt it to be worth.

As secretary, it was up to me to get entries for these sales, and I will say that it was a most difficult task. Many breeders keep sold out almost before the pigs are old enough to leave the sow, so it was hard scratching to make up some of the consignments, often taking from a breeder something he was keeping in his reserve herd. Pigs under breeding age made up 90 per cent of the consignments. In all there were 112 pigs sold in the four sales for $5414.50, or an average of $48.35. These pigs went to farmers in the country surrounding the town in which the sale was held.

Through the encouragement thus offered by the Western Berkshire Congress many of these buyers are going to become breeders. At every sale the farm adviser was present and urged the growing of better live stock. When it comes time for these farmers to put their pigs on the market as breeding animals, they will have the Western Berkshire Congress back of them. They can consign their pigs to our sales. It will not be necessary for them to do the pioneering that the older breeders have done who went East and bought and upon bringing their pigs to breeding age, had to get out and find the market for their breeding stock.

It has been suggested to follow these young pig sales with bred sow sales next year. This may be the consequence, and having watched the progress of the young "Berks," these same buyers will come back for mature animals and make a little better start. The few bred gilts offered in these sales were eagerly sought after, indicating the manner in which the farmer would like to establish himself in the hog business.

In order to raise money for carrying on the breed promotion work, the Western Berkshire Congress will hold a donation sale at the state fair at Sacramento upon the completion of the judging of the Berkshire classes, which will likely be on Tuesday afternoon, September 2. Progressive Berkshire breeders have donated a pig or two each, the proceeds of whose sale will go into the congress treasury to carry on propaganda work and the posting of special Berkshire classes at the fall shows.

With a good live breed promotion body back of him, the new breeder cannot go wrong by selecting Berkshires. If he has a warm preference for another breed, he should follow that preference, because a successful breeder must like his breed and must have his heart in his work.

What Is a Bull Worth?

By Frank D. Tomson, Secretary American Shorthorn Breeders' Association

THE value of a bull is usually considered in a general way rather than from the standpoint of the actual results in dollars and cents, strange as it may seem.

Recently W. A. Cochel formerly head of the animal husbandy department at the Kansas agricultural college, analyzed the subject in a way that simplifies it and leaves little argument for the defense of the use of any bull that is not a prepotent sire.

Mr. Cochel suggests as a basis that

the average bull will sire 100 calves in the course of his life. Many would sire two, three or four times that number, but for the sake of being sufficiently conservative he uses 100 as a basis for calculation. He draws attention to the increased value in the calves sired by the registered Shorthorn bull for instance over those from the same dams sired by a grade or scrub bull. If the increased value represented in the calves by the registered bull was $5 the actual value of this bull to the owner would be $500. If the increase was $10 the bull would be worth $1000. If there existed an excess value of $20 the bull's worth would be $2000, the interest on the original investment being the only increase in the cost over the poorer bull.

There are so many instances where the actual value of the get of a good bull exceeds the value of those of a poor bull by $50 per head, even from grade cows, that it suggests that we have really failed to comprehend what a good bull is really worth. This is not written to urge farmers to go out and invest one, two, three, or four thousand dollars for their bulls but to draw attention to the actual safety of the investment if they actually did do it. The price paid doesn't determine the real merit or value of a sire but it is rather an impressive fact that worthy bulls as a rule do command fairly liberal prices. Even when they are sold as calves there is usually some buyer who foresees their outcome and prospective value and is agreeable to paying the price. This doesn't always apply by any means for many a valuable bull has slipped through a sale at a fraction of his worth because the bidders were not then looking for bulls. Many a man has sat in a sale and allowed good bulls, the sort he needed, to sell for a song because he had a bull at home. He failed to consider that his bull should go to the butcher or at least be kept away from the breeding herd. He just knew that he had a bull and what would be the use of two bulls in his small herd. Of course if this bull was dead or past usefulness then he would need another, but while he lived and was able to do service, regardless of his lack of merit, the owner wouldn't think of buying another however valuable the bull and however low the price.

This happens day after day and nearly everywhere. It doesn't seem to matter that the poor bull could be sold to the butcher for as much, or nearly so, as the good bull would cost. Here is an expression that one hears in public sales times without number —"Oh, I've already got a bull an' what's the use of havin' two bulls?" Merit isn't considered. Value is overlooked. The fact that the bull in question might add from $5 to $50 to the value of every calf he sired is ignored. Maybe it is the feeling of comradeship that has grown up between the owner and his bull which makes him so reluctant to part with him. Perhaps that is the reason, yet I have a notion that it is the owner's lack of business alertness that holds him back and keeps the old bull on duty. Whatever it is it seems to be always with us.

On the markets every day steers of the same fatness will show a difference in selling value of from $5 up to $150 per head. Why? Principally because of the kind of bulls that sired them. Nor does this spread in the price take care of the gains and the feed consumption. Here again the kind of sire is the determining factor. In the business of producing beef there is a lot of credit that rightfully goes to the good sire and there is a lot of grief and lack of profit that has to be charged against "Old Colonel" or "Spotted Dick" or "Baldy" or "Black Jim." It's a long list, these unworthies. They have outlived their deserts. They were never entitled to the place accorded them. And today when the feed bills mount high and the range of quotations at the markets is so wide their owners recognize that they have been expensive.

This is the day of the better types. There is profit in no other for the producer. The pure bred sire possessing size and quality is the only solution of the farmer's problem. A little increase in value on each calf makes the better bull not only worth while but, under the prevailing conditions, an absolute necessity. We are past the period when we were trying to make a bare living on the farms of this country. We are in business for profit now and the land we till and the types of live stock we employ must be considered in the light of an investment for this purpose. We don't buy bulls to save money but to make money. And when there is such a wide range of value in the sire shown by the few dollars on each calf we may well get our attention on the bull that will sire the kind with the added value.

UNPROFITABLE FENCE

Bronte A. Reynolds, editor of the bulletin of the state department of agriculture, suggests the use of a space ordinarily occupied by a fence and its accompanying weeds as having possibilities for profit instead of being a pest distributor:

The average type fence does not permit of cultivation within a given distance on either side. In the area thus protected by the fence thrive sufficient noxious weeds and grasses which, unmolested, develop the seed to be sown by wind and other agencies from season to season. Upon these weeds, when in a green, succulent stage, a large number of our destructive insect pests feed, reproduce and hibernate, and from these locations as foci are dispersed into the adjacent cultivated crops to wreak their toll of damage with which we are already too well acquainted.

I can produce a hundred works on destructive insects, many with illustrations of fence rows, and show under "Control Measures" and "Repression", the admonition that adventitious growths, such as weeds, grasses, etc., protected by fences, be cut, burned or otherwise destroyed in order that insects and weeds which ordinarily would be destroyed by cultivation shall find no hibernating refuge along the fence line.

The nearest approach to a practical solution for "doing away with this untilled area" involved by the average fence line was the novel but impractical suggestion of a "movable fence." The suggestion recommended was moving the "movable fence," plowing or cultivating, and then putting the fence back.

Now a fence has many functions. It keeps your own stock in; it keeps your neighbors' stock out; it protects your orchard, your farm and your vineyard, and, most important of all, usually it establishes the legal boundaries of a given estate; and for this last reason, as old and sound as Magna Charta, the movable fence is impractical, for it would entail vexing legal difficulties.

Now as a matter of agricultural fact what else beside a few berry bushes or weeds ever occupied the uncultivated area protected by the fence? Nothing of commercial importance! Then why not "sterilize" this unproductive area, since it serves no agricultural purpose but to enclose and protect the environed land?

Thus we are confronted with the paradox wherein we build a fence to protect our crops and by so doing perpetuate broods of insects and noxious weeds, which cost more in wasted energy and actual losses than many other sources combined.

Now after many years of recurrent losses, let us take this fence problem and settle it for all time by chemically sterilizing this strip of three or four feet, in which nothing of value is produced, and in so doing wipe out both weeds and insect plagues that from time immemorial have been fostered under its benign influence.

A Word About Chemicals

Crude oil, salt and other weed killing preparations have disadvantages which preclude their wide use as sterilizing agents, since only partial success has followed their application, and at this time no more promising agent is available than some of the many types of arsenical poisons. After a given time no danger of stock poisoning would be entailed since nothing would grow in the poisoned fence-row area upon which stock would be tempted to feed.

Sterilize the fence row and save next year's crops from weed and insect losses.

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Vigor---The Magic Word

By Jean A. Koethen

WE have been looking for years for the one word which should prove the open sesame to poultry success Sometimes feeding has seemed to be the word; again the changes have been rung on breeding. Some enthusiasts would have us believe that culling is the thing, and again we are told all depends on selection of the proper type. It remained for Professor Dougherty, during his recent visit south, to put into words the latest thought on this important subject when he said: "The first requisite to egg production is a machine of proper capacity, and the first essential to securing egg production is therefore constitutional vigor." More weight attached to this opinion because it was enunciated in a lecture on feeding. "The most important problem poultrymen have to face," he declared, "is to positively eliminate the low producers and build up the high producers," and the high producer is, in the last analysis, the most vogorous bird. In other words, if we can build up a strain of birds that are never sick, hens that do not develop roup whenever a draft blows on the back of their heads or have bronchitis when they must walk on wet ground for a day or so, hens that can eat large amounts of food without getting indigestion, that are still fat and husky after a year's steady laying and that can go on laying heavily for three years or more without breaking down, we have the foundation for the very highest production.

Helen Dow Whitaker of the Washington station, recently expressed herself very pointedly to the same purpose: "High egg production is the result of a trinity of forces, vigor, happy environment and the breeding pull for eggs concealed in the invisible cells of the reproductive organs of the ancestry, both male and female, I think, together with the ability of that ancestry to pass this factor on, laying eggs, for the pullet, is a matter of good eyesight, heavy feathering, active circulation, a normal liver, a clean, energetic digestive tract, a good respiratory system to eliminate poison from the body, and space in the bodily cavity for handling a raw product—food—and making it into a finished product—eggs. All those must be combined with a certain vital factor of which we know all too little, namely, the cellular activity of the ovary in the development of the embryonic yolks."

Mrs. Whitaker scouts the idea of picking layers by measurement of body or color of legs, declaring that "To say that eggs are a question of body type is to say that the shape of a factory determines its output. Brass tacks, so far as I know, can be made in an oval or rectangular or square factory so long as there is space, and above all, the machinery that makes brass tacks. Just so the ability of a layer is not determined by bodily conformation but by machinery within for the manufacture of eggs and by possession of the vigor necessary to operate that machinery to its maximum capacity."

There is, to be sure, a type of hen that stands for vigor, the deep-breasted, long backed type, deep in the keel, rather short in neck and beak, and with a neat, smallish head. The type is the same for hens and cows and goats and human beings, and when we select for vigor we inevitably select such birds.

It is possible, of course, for a naturally vigorous bird to have its vigor sapped by disease and still maintain the general appearance of a healthy, vigorous bird. Tendency to roup and other respiratory diseases is doubtless passed on from generation to generation by the use in the breeding pen of birds that have once or perhaps repeatedly had colds or roup. It is all right to say a hen may have a cold and still recover perfectly from its effects. Maybe she does, but there is not much excuse for hens ever having either roup or colds, and if only birds that have never had the slightest cold are used for breeders there will be no colds in the flock. A vigorous hen no more minds a draft on the back of her head than a vigorous perfectly normal human being minds it. Sensitiveness to drafts and to dampness and weather changes simply indicates that vigor has not been the basis of breeding. It is possible to breed a strain of fowls so vigorous that you can only kill them with a club or a hatchet.

It seemed to me a pity that at the poultry school in San Gabriel last May one of the eight sessions should have been devoted entirely to diseases and their treatment. I would far rather have seen it devoted to prevention of disease. The time is coming when we shall all be ashamed to be sick or to have any one know that we have sick fowls.

Vigor depends on two forces, breeding and environment. The most vigorous fowl will degenerate in an uncongenial environment, but the most wholesome environment never made a silk purse out of a sow's ear. There must be external conditions that give nature a chance and internal characteristics that are worth a chance.

Breeding for vigor means selecting the most perfect. It also means eliminating the imperfect, and elimination begins as soon as the chicks are hatched. Weaklings should be killed at the start. Chicks that lag behind in their development should be culled out for broilers. The sooner every backward chick is out of the way the better. Cull out those that feather too slowly and the stunted-looking ones. If only vigorous chicks are allowed to reach maturity the later task of selection is greatly simplified.

A "happy" environment, to use Mrs. Whitaker's phrase, includes comfort, cleanliness and suitable food.

To be comfortable chickens require shade in summer and protection from rain and wind in winter. Mud under foot is not comfortable, not for long at any rate. Lice do not contribute to comfort. Mite-infested nests and roosts, bare yards, lack of scratching litter, hard floors with the roosts too far above them, too narrow roosts or insufficient room upon them, all these are little things, but like the constant drip of water on rock they wear away vitality and gradually sap the powers of resistance.

Under cleanliness we include everything connected with sanitation—clean air, clean water, clean yards and droppings-boards, clean feed. I do not know how much walking constantly on manure affects the vitality of a fowl, but I do know it produces scaly-leg, and scaly-leg does in time affect vitality. I do not know just how long hens can roost in badly ventilated houses without developing roup. Doubtless it depends on the vigor of the individual. But I do know that sooner or later some of the flock will suffer from such abuse. It is the continual dropping that after awhile wears away the hardest rock.

"A happy environment." I like that phrase. It reminds one of the companion phrase "contented cows." It means that the hen is always able to be at her best, never worried, as such a temperamental creature is sure to be by little nagging discomforts that care would alleviate. It means that she does not need to waste vitality and energy in fighting vermin and colds and heat. Do you know what that phrase especially means to me? It means for this climate a moist dust bath under a shady tree. That is the happiest environment for a hen.

To a certain extent feed may well be included under environment, for, while the food which produces eggs is no great factor in a hen's happiness, as much as is necessary to the maintenance of health is a great factor. I doubt if any hen is happy without green feed, and if she is denied it her liver will suffer sooner or later. A vigorous bird can stand unsuitable food for a while, but not forever, and when the digestion is impaired all is lost. Give the hen the right ancestry, suitable surroundings and the feed that will maintain vigor ,and you need not worry about production.

Watch your step—breed, weed, feed, then gain speed.

AMERICAN EGG LAYING CONTEST

Entries are now being received for the 1919-1920 American Egg Laying Contest at Leavenworth, Kansas, which will begin November 1. All entries must be in by October 1 and the pullets must reach the contest October 15 to 20.

During the month of June, one pen of five Brown Leghorns from Indiana made a record of 149 eggs in 31 days. This, the contest managers believe, is the best pen record ever made. During June, 38 of the 63 pens contesting produced 100 eggs or more. Eleven pens produced from 125 to 137 eggs.

Seventy hens each produced 25 or more eggs during the 30 days of June. One hundred and eighteen hens produced less than 20 eggs each, while eleven did not lay an egg.

The most interesting column among the various statistics given for the eight months ending in June is that showing the performance of the average pullet of the different breeds. The best average, we are not surprised to learn, was that of the White Leghorns, 142 eggs. It is a little surprising to note that the second highest average was made by White Orpingtons, their average reaching 134. Barred Rocks are next with an average of 128 eggs; then come Buff Minorcas with 125 eggs, White Wyandottes with 123 and Anconas with 122. Buff Orpingtons come at the bottom of the list with an average of 87.9 eggs.

Professor Palmer of the American Poultry School, at which the contest is being held, recommends two meals of moist mash per day for layers. He also suggests that a few fresh green beef bones be thoroughly boiled three times a week, and the soup used for moistening the mash. The rest of the time milk or water is used.

A PROFITABLE WINTER HATCH

Mrs. H. J. Clewett of Upland sends us the following interesting account of her amateur experience with 40 hatchery chicks:

"Last December we bought from a hatchery 40 White Leghorn chicks. An accident lost us eight and we started well with 32. Home-made hover with no artificial heat, small pen in the cover crop, plenty of fresh water, food of a commercial chick mash with buttermilk and chick feed before them all the time; this was their lot the first month. Then I began to add wheat, changed at two months to a commercial egg mash with buttermilk and gradually added Egyptian corn. By this time they were running in the grove.

"Being a busy woman I always put out feed enough to last 24 hours. They would be eating as early as 4 o'clock in the morning, were always hungry, crops always full. If you please, we had 16 pullets and 16 roosters. Sold most of the roosters in February. In March three brought $1.20 apiece.

"On April 9 at four months and one week old a pullet laid the first egg and it was double-yolked. During April they laid 100 eggs; in May, 171; in June, 239. Today (July 1) I balanced their account and find to their credit $1.66 and 15 pullets (one was caught by a coyote) and one rooster, just seven months old. I am proud of them."

Please note that these chicks ran on the cover crop in the orange grove, and that while they were given the least attention consistent with due regard for their health, they had before them constantly the three things chicks need most, a good dry mash, buttermilk, and green range. The time will come. I hope, when every cover crop will have its flock of chicks.—J. A. K.

RABBIT GROWERS MEET AT STATE FAIR

On Tuesday at 9 p. m., September 9, the Rabbit Growers Association of California will hold a get-together meeting in the Directors' Meeting Room of the new Agricultural Building at the state fair grounds.

The intent of this meeting is to arrive at more definite plans concerning the rabbit growing industry, which is destined to become one of the meat producers of the United States. Very little is generally understood concerning utility breeds of rabbits which are very prolific and easy to raise.

Poultry Queries

Conducted by J. A. Koethen

Leg Weakness

I have six pullets four and one-half months old with weak legs. Some have the trouble in both legs, one in one leg only. One's wing drops down and hangs under foot. Can you give me cause and a remedy? My pens are dry, well ventilated and clean. The pullets are nearly ready to lay. Also can you tell me where I can get a good grade of carbolineum. I have tried a number of large paint firms and cannot find anything with the proper kick in it.—Subscriber, Hayward.

Is this weakness or lameness? There is a difference, you know. Do you notice any swelling in the leg joints? Any loss of weight or darkening of the comb? Lameness combined with loss of weight suggests tuberculosis, but this disease can be diagnosed only by the tuberculin test or a post mortem. If on killing and cutting open an affected bird, you find liver, spleen, intestines and the membrane uniting the intestinal folds studded with yellowish white cheesy nodules of various sizes you will have good reason to think the bird was suffering from tuberculosis. If you wish to try the tuberculin test write Dr. Beach, Poultry Department, College of Agriculture, Berkeley, for tuberculin and directions for using. The tuberculin is injected into the comb and wattles. If it produces a swelling, tuberculosis is indicated.

It is possible your pullets are suffering from close confinement and lack of animal food in the ration. Your dry mash should contain both beef scrap and bone meal. If they are up to normal weight it might be well to improve the ration before trying the tuberculin test. That drooping wing may be due to some injury and have no connection with the general condition of the pullets.

You should be able to find a good grade of carbolineum at any large poultry supply house. If you do not, crude carbolic acid diluted with kerosene or distillate, one part carbolic acid to five or more of the oil, will answer the same purpose.

Ration has Too Much Protein

Please tell me through the Cultivator if there is anything wrong in the way I have been feeding my chickens. From the time they were about six weeks old I have kept a dry mash before them all the time, consisting of, by measure, one-half part corn meal, one part bran, one-half part barley meal (hulls sifted out), one part ground oats (hulls out), one part beef scrap, one alfalfa meal, one-quarter bone meal and one-quarter charcoal. Besides this I feed Crowley's growing mash damp mornings, green stuff at noon, a wet mash of equal parts bran, oats, corn and barley meal at four o'clock and grain at night. The roosters are four and one-half months old and weigh barely three pounds. They are kept by themselves in small yard, look well and eat lots but it seems to me they do not fatten very fast. Have Reds and Rocks. Is chopped raw potato good for them?—Subscriber, Lakeside.

It would be better to omit the bran and the beef scrap and bone meal from your fattening ration. Try this formula, which is used at Purdue and is a fair sample of the ration used at all experiment stations: Two pounds corn meal; one pound shorts; one pound ground oats; eight pounds buttermilk. If you have no buttermilk or sour milk you will have to moisten the ground feed with water, but birds make more rapid gains when they have milk. This formula is intended for crate fattening but may be used when the birds are confined in a small pen. Feed three times a day all they will clean up in 30 minutes but do not continue the ration longer than two weeks. See that the cockerels are free from lice and that they have grit always before them. The chopped raw potato is all right, but it would probably help more in adding weight if it were boiled and mixed in the mash. The ration you have been using is too narrow. That is, it contains too much protein and not enough starch and fat for rapid fattening.

Chicken Pox or Gapes

I saw an article in the Cultivator of August 16 about disease of chickens. My chickens are troubled like those, but that disease is not the chicken pox. It seems somewhat like the gapes to me. I have lost 100 chickens. Some of them are two months old, some younger. It starts in the eyes. They close up and go blind. The blisters are not like the chicken pox. Chicken pox forms a dry scab and if you mix vaseline and kerosene together and keep them greased they will get well. But this disease is different; it comes on with red blisters and the eyes go blind. They gap a little, not much, and a watery fluid discharges from mouth at times.—Subscriber, Merced.

I am very glad to hear more about this disease, but I still think it is chicken pox, only a more severe form than common. See how this description of the disease, as given by Freiberger and Frohner, compares with the eruption on the heads of your birds: "The favorite seats of these warty nodules are those parts of the head that are not covered with feathers; root of the beak, neighborhood of the nostrils, angles of the mouth, lobes of the ear, wattles, edges of the eyelids and especially the comb. They sometimes spread over the feathered parts of the head, throat and neck. At first they appear in the skin as flat nodules, which soon become prominent, and which vary in size from a poppy seed to a millet seed. Later on they usually attain the size of a hemp seed. They are of a reddish gray or yellowish gray color, and are rather firm to the touch. Their surface soon becomes covered with a dirty gray, yellowish brown, or red brown crust. They vary in size according to their age, and frequently lie rather close to one another, so that the affected parts look as if coarsely granulated. If the edges of the eyelids are affected by these tumors the lids will become nodular, swollen and closed. If, as sometimes happens with pigeons, the eruption of nodules extends over the whole skin of the eyelids and its neighborhood, the entire eye will become covered with mulberry-like proliferations of various sizes." When chicken pox affects the eyes and the birds become blind, they often die from starvation. The use of iodine on the sores, as previously recommended, may be followed by greasing daily with vaseline or lard.

If after reading the above description, you are still satisfied that chicken pox is not the trouble, try washing their eyes two or three times a day with two per cent boracic acid in a decoction of chamomile flowers. This is a preparation any druggist can put up for you. Drop the medicine in the eye with a bit of absorbent cotton, wiping very gently if necessary to remove the sticky secretion. If this is not chicken pox it is roup of the eyes, which may or may not be accompanied by diphtheretic membranes in the throat. This would account for the gaping and the running of a watery fluid from the mouth. These membranes occur with both chicken pox and roup, and may be treated by swabbing with peroxide on a bit of cotton.

To keep fowls in good health and productiveness during the summer months we have found it advisable to make a few changes from the plan of feeding adopted during the cooler seasons. Heating feeds, such as corn and barley, should now be left out of the diet, and the best feeds at this season of the year are bran, oats, a little wheat, and as much green stuff and vegetables as the fowls will eat.

Dump ashes in the chicken yard. The hens like to work them over and pick out the coals as well as wallow and dust themselves.

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Household Department

THE GREATER HAPPINESS

I reckon when life is done
And we look back across the years
To see the goals which we have won
And count our varying smiles and tears
The greatest joys that we'll recall
Will not be those of skill or might,
But children romping in the hall
And little games we played at night.

The big things, when our life is through
Will be the little ones of now;
We'll prize those moments in review
When never was a troubled brow,
When eyes with love were all aglow
And mother sang her lullabies;
Those restful, happy scenes we know
At night when moon and stars arise.

I fancy none of us will yearn
To fight our battles once again;
Or would unto this world return
To triumph o'er our fellow men,
But we might brave the ways of earth
And live our many trials o'er,
To hear our children's shouts of mirth
And romp with them upon the floor.

We shall not value glory then
Nor think of wealth as now we do;
We'll prize those glorious moments when
Contentment and delight we knew.
And looking back across the years
The merry scenes of home we'll see
Through eyes bedimmed by crystal tears,
And wish such joy again could be.
—Edgar A. Guest.

GOING ON OR GOING AROUND

"SEE that little fellow," said the professor, pointing to a sparrow on top of the horse-rack. The bird was tugging at a long hair caught there from Betsy's tail.

"Thrifty little builder, eh?" answered Farmer Hills. The Farmer and Professor were smoking the usual after-dinner pipe under the big elm.

"She certainly works out a fine interior finish with that hair," the Professor agreed, "but I am wondering about her thrift."

Farmer Hills didn't answer but continued with his own idea. "A little later the squirrels will begin at dawn and work all day putting away their winter food—they are real examples to folks."

"That's true as far as they go," again agreed the Professor. "My grandmother was a Scotch Presbyterian and terribly saving. When mother poured the clotted cream over my oatmeal, she would frown and say, 'Scotch bairns grew strong on plain porridge.' The Professor stopped to chuckle over the recollection. "She taught me, 'How doth the little busy bee' and told me over and over again the story of the thrifty grey squirrel.

"That sparrow over there, will work just as hard to build a nest next year. If he were really thrifty he would put a rain-proof roof over his nest, and next year he would be building houses to rent. But he never gets ahead, he will be doing the same thing a hundred years from now."

"And the squirrel?" asked Farmer Hills.

"Same with him," said the Professor, "works all the summer putting away more than he needs. The nuts rot, and he starts all over again the next summer. If we had copied the squirrel, we'd still be cave dwellers."

"But I raise a wheat crop every summer." For Farmer Hills was not entirely convinced yet.

"What do you do with it?" the Professor asked.

"Do with it!" repeated Farmer Hills. "I grind up a year's supply of flour, put away enough to sow again, and sell the rest."

"And what becomes of the money?" pursued the Professor. He knew well enough that Hillcroft was the richest farm in the valley, that it had grown richer with each generation of Hills, and that it would again be passed from father to son, richer than when the father took it. The Hills regarded the ownership of land as a sacred obligation. So the professor knew what answer to expect.

Farmer Hills began, "Some of my wheat money runs the family, some of it is put by for up-keep and new machinery, and a good bit always goes into safe investments for ma and me. For two years I have put it in Liberty Bonds and Savings Stamps. I am buying now at the market price every Liberty Bond I can afford and I have the limit in War Savings Stamps. I figure that ma and I will be ready to turn the farm over to the son in five years and take that trip around the world."

"Not a bit like the squirrel," and the Professor was chuckling. "You keep going on and he keeps going around.

"Thrift is a deliberate thing. It marks out the real difference between human beings and animals. People progress and animals stand still. It takes genuine human thrift to go on."

——BUY W. S. S.——

HOUSEHOLD QUERIES

Bleaching Flour Sacks

In response to request in recent Cultivator for best method of bleaching letters on flour sacks Mrs. W. H. McCain of Monrovia writes:

"The best method I have found is to take some kind of washing powder, dissolve and spread over the letters. Put over that coal oil, roll up tight and soak overnight. Rub on the washboard in the morning. Boil in lots of strong soapsuds.

I have the best of success, all the print comes out this way."

Mrs Albert Waknitz of Thermal writes: I note your request for bleaching and removing printed matter from flour sacks. I use the following method:

First wash the flour from the sacks in cold water, wring out moist, then sprinkle printed side freely with kerosene and roll up for 24 hours, then with lukewarm water and rubbing with laundry soap on printed side, rub with printed side on washboard and the color comes out as freely as dirt. I bleach by hanging them out wet in the sun. One can dip them often or turn hose on them.

W. J. Gempshorn, Imperial: Saturate the sacks in kerosene two or three days. Wash in luke warm water and castile soap. If the stain is not all gone, use a little salt, lemon juice or citric acid. Bleach as usual.

Mrs. E. E. Booker, Saticoy: Your article in August 16th issue on bleaching flour sacks noted. I used to bleach your method, but now have a more satisfactory way, so write it:

Thoroughly wet all letters and colored parts of sacks with kerosene and let stand awhile. Then put in cool suds; soap and rub well, then put in another suds with some washing powder or sal soda and boil well. I usually let them stand a day or two in boiled water, then hang up in sun,—without wringing.

Mrs Helen W. Bullock, Redlands: Replying to an inquiry in your August number as to how to bleach flour sacks, I submit the following directions which have given satisfaction: Put sacks, ripped apart, into enough boiling water to cover them, add one-half cup kerosene, one and one-half cups sal soda, and one-half cake fine cut soap. Boal and steam for one-half hour, wash, rinse, and hang on the line in bright sun. If color is not all out after hanging in sun one day, dip in clear water and give another day's sun bath. When whitened, baker's 100 pound sacks resemble linen.

CORN AND FISH CHOWDERS

Chowders seem to belong to cold weather, but are none the less tempting for the cooler days of late summer and fall, for the evening meal after the heat of the day is past, or for the occasional picnic outing.

Now is the time for Cultivator readers to enjoy especially fresh corn chowder. Here is a good recipe:

Cut fat fresh or salt pork in dice and brown in kettle. Slice on top a thin layer of onions and a thick layer of diced potatoes. Brown in the fat, then add fresh corn cut from the cob, add pepper and salt and a tablespoon of sugar. Cover with hot water, put top on kettle and cook slowly for half an hour. Add cup of hot cream, sweet or sour, or milk and serve.

Fish Chowder

Put four thin slices of salt pork in the bottom of the chowder pot, then a layer of sliced potato; cover with a layer of fish, dust with pepper and salt and dot with lumps of butter. Proceed in this way until two or three layers of fish are used, then add a tablespoon each of chopped parsley and a heart of celery. Pour over a pint of boiling water and cook gently 20 minutes, then add a pint of hot milk, or, if better liked, the same amount of strained tomato juice.

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LOS ANGELES

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

ONE OF TODAY'S MIRACLES

Mr. Jones—The days of miracles are over. They can't turn water into wine now.

Claim Agent—That's where you're wrong. Why any railroad in our country performs a greater miracle than that almost every day.

Mr. Jones—How's that?

Claim Agent—When a train runs over a scrub cow and she becomes a fine Jersey.—Judge.

Sulphur

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100 per cent pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR, 100 per cent pure. This has increased various crops up to 500 per cent.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc.

And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 DEGREES BE., Sulphur Paste, Nicotine, Blackleaf 40, etc. Fungicides and Insecticides.

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TAKE CARE OF THE FEET

Ordinarily speaking our feet that we expect so much of are left mostly to take care of themselves, and the feet get even with us and show their resentments in corns and bunions, and we suffer accordingly discomfort that with a little daily care might have been avoided.

Frequently calloused places form on the soles of the feet from standing or from lumps in the sole of the shoe. If the latter, the matter should be attended to by the shoemaker who can easily remedy the defect. The daily use of a rather coarse piece of pumice stone prevents these formations, and a file may also be used to rub off obstinate places. If these do not keep them down, paint each with a little tincture of iodine, and if you have a bunion that is sore apply iodine with a brush every night until all the soreness is gone, then wash the bunion every night with strong salt water.

Wearing one pair of shoes in the morning and another in the afternoon rests the feet wonderfully, and nothing is more restful to tired feet than the salt water bath. Some people find more comfort from rubbing the feet with dry salt than from using any other remedy. If one must take long walks or stand much a little dry boric powder sprinkled in the shoes every morning makes the walking easier and adds greatly to comfort.

If the feet are moist and tender wipe them every morning with a saturated solution of boric acid. Let it dry on, then use the dry powder in the shoes. This checks perspiration and destroys the odor.

The surest prevention against all foot troubles is a foot bath every day, a change of stockings and a change of shoes as often as possible.

A chiropodist says that the feet are the greatest nerve centers in the body and that when they become irritated and hurt it shows plainly in the face and makes wrinkles come long before they should. Rubber heels save the jar to the spine of heavy walking, especially if the person has a habit of bringing his weight down chiefly upon the heels.—A. M. H.

WHY SOME FARM HOMES ARE ABANDONED

"The main reason why so many farm homes are abandoned is because of the lack of modern labor-saving devices," says Miriam M. Haynes of the Colorado Agricultural College.

"Women are the determining factor, they rebel against the drudgery and hardships of the average life on the farm. The burdens of the farm life fall too heavily upon the home-maker who too often is trying to keep house in an unsanitary, inconvenient home with little, or no mechanical helps. If we are to build permanent homes in the country we must make our homes more comfortable and convenient, or in other words more "livable." We must bring the best of the home labor-saving equipment from town, install it in our country homes.

"Water in the farm home will mean much to the wellbeing of the entire family, it will relieve nine-tenths of the drudgery of the routine of the farm home work.

"When the average farm woman is asked what she most wants, her reply is nearly always, 'Water in the home with a well equipped bath room and plenty of hot and cold water the year around'."

"Let our aim be that we will install some kind of water system in the farm home before another winter."

THE BLACK HAND

"Our whole neighborhood has been stirred up," said the regular reader.

The editor of the country weekly seized his pen. "Tell me about it," he said. "What we want is news. What stirred it up?"

"Plowing," said the farmer.—Driftwood.

NOT A REQUISITE

"And do you have to be called in the morning?" asked the lady who was about to engage a new girl.

"I don't has to be, mum," replied the applicant, "unless you happens to need me."—Yonkers Statesman.

Fairbanks-Morse Quality—Very Low Price

This 40 light "F" plant is shipped completely mounted on one base. The power plant is our famous "Z" throttling governor engine which, in addition to operating the electric light and power plant, can also be used to furnish power for washing machine, churn, cream separator, etc., independent of the dynamo, either direct or through a line shaft.

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Your dealer will prove its reliability, point by point, so see the Fairbanks-Morse "F" light plant before you buy any.

40 LIGHT "F" PLANT $295

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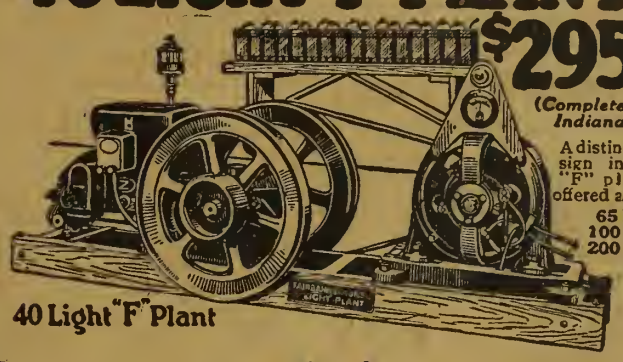

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Los Angeles Markets

Los Angeles, August 27, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 59 lb.; prices to retail merchants in 1-lb. squares, 59@60.

Dairy Exchange prices last week on extras:

Aug.	20	21	22	23	25	26
'19 ...	56	56	57	57	58	59

CHEESE

Brokers' prices:

California fresh, lb., 35; price to retail merchants, 36@37.

EGGS

Fresh extras, Produce Exchange closing price 53 dozen, price to retail merchants 57 dozen; case count, Produce Exchange closing price, 49 dozen; price to retail merchants, 53 dozen; pullets, Produce Exchange closing price, 47; dozen; price to retail merchants 48; pewee pullets, 33.

Dairy Exchange prires last week on extras:

Aug.	20	21	22	23	25	26
'19 ...	51	51	51	51	52	53

POULTRY

Prices to producers: Hens, lt., 27@33; colored over 4 lbs., 35½; broilers, 27; fryers, 24; roasters, 30; old roosters, 10; capons, 42; ducks, old, 27; ducklings, 27; geese, 25; turkeys, 34@40; squabs, 45; pigeons, doz., 1.00.

Belgian hares, live, 32.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 18.50; 150 to 225 lbs., 20.00.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.00; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 26, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Approximately 600 sacks arrived by boat. New stock, Stockton Burbanks, 3.50@3.75. Homegrown White Rose, 1.10@1.35 lug box; sacked per 100 lbs., No. 1 grade 3.25@3.50. No. 2 grade, 3.00@3.25.

Sweets, lb., 4½@5.

Onions: Demand and movement moderate. Homegrown White Globes 1.00@1.10 per lug; 2.50@3.00 per cwt. Yellow varieties 2.50@3.00 per cwt., lugs 1.00@1.10; Garlic, lb., 40.

VEGETABLES

These are the actual prices obtained August 26, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beets, doz., bunches, 40.

Beans: Kentucky Wonders, 3@3½ lb., practically no demand.

Carrots, doz., 30@35.

Cucumbers: Local lug, 30@40.

Celery: Local, best, 80@1.15 dozen bunches. Crates, best 3.00@3.50.

Corn: Roasting ears, 60@70 per lug of 3 dozen.

Eggplant, best, lb., 3@4.

Parsley, doz., 15.

Peppers: Bell lug, 30@35; Chili 50@60.

Peas: Local, lb., 8@10.

Tomatoes: Lug, ripe, 30@40; shipping 40@50.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained August 26, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: No carlot arrivals. New crop, Alexanders, apple boxes, packed, 2.50@2.75; loose, 1.50@1.75. Gravenstein, packed, 3.00@3.25; No. 2, 2.75@3.00. Crab apples, 2.00@2.25. Skinner Seedlings, 2.40@2.60.

Blackberries: Cr. 20 baskets, 4.00@4.50.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews, 75@80. Tip Tops, best, 1.00@1.25. Rockyfords, 50@75. Paul Rose, 75@1.00. Various varieties, cabbage crates, 2.50@3.50.

Grapes: No carlot arrivals on account of strike. Demand and movement slow, market firm. Sales direct to retailers: Thompson Seedless, bulk, 3½@4 per lb. Local and Northern: Malagas, bulk, 5@6 per lb.; Muscats, bulk, 5@6 per lb.

Loganberries: 4.50@5.00 per cr. of 30 baskets.

Nectarines, lb., 6@8.

Peaches: No carlot arrivals on account of strike. Demand and movement good, market firm. Sales direct to retailers. Northern and Local: Various varieties mostly, 4@6 per pound.

Pears: No carlot arrivals on account of strike. Demand and movement good, market firm. Sales direct to retailers, Northern and Utah, fancy bulk, 7@8 per lb.; choice, 5@6 per lb.

Pineapples, lb., 15@17.

Plums: Demand and movement slow. Satsumas, 5@6 lb. Burbanks, 4@5 lb.; Hungarian, 5@7.

Raspberries: Cr. 30 boxes, 4.50@5.00.

Strawberries: Cr. local, 5.00@7.00, best 2.00@2.25; poorer, low as 1.00.

Watermelons: Demand and movement slow, quality and condition generally good. Local Chileans and Klondikes, large 1¾ lb., medium 1, small ½ lb.

Lemons: Fancy packed, 6.00@6.75; local pack, 4.00@4.50; loose, some tree ripe, 3.00@4.00.

Oranges: Valencias, medium fancy, 5.25@5.75; local pack, 3.00@4.00.

Grapefruit: Local fancy, 3.50@5.00 bx.; poorer, 2.50 up.

HONEY

Supplies very light. Estimated the season is half over. Demand and movement good, market firm, little change in prices. Carloads f. o. b. usual terms: White Orange Blossom, mostly 20; White Sage 20; Extra Light Amber Sage 18½@19; Light Amber Sage 17½; Light Amber Alfalfa 15@16 lb. Beeswax: l. c. l. sales mostly 40 lb.

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	19.00@20.00
Barley	16.00@21.00
Alfalfa	18.00@22.00
Wheat or Barley straw	9.00@11.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy	27.00@28.00
Standard dairy	24.00@26.00
Standard alfalfa	21.00@23.00
Stock alfalfa	17.00@19.00

GRAIN AND FEEDS

Price local grain exchange, August 26: Milo maize, 2.87½@2.90.

Corn, Yellow, 3.60@3.70; White, 3.52½.

Wheat, 4.60@4.80.

Egyptian Corn, 3.30.

San Francisco Markets

San Francisco, August 26, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	59½
Prime Firsts	55
Firsts	54

Prices extras last week and year ago:

Aug.	19	20	21	22	23	25
'19 ...	56	56	55½	56	..	..
'18 ...	52	52½	52½	53½	..	..

Rcts. week ending August 25, 2482 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	33½@35½
Cal. Y. A. fy.	38
Ore. Triplets	35½
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	58½
Pullets	55

Prices extras last week and year ago:

Aug.	19	20	21	22	23	25
'19 ...	55½	55½	56	56½	..	..
'19 ...	57	57½	57½	58½	..	..

Rcts. wk. ending August 25, 302,250 dozen.

POULTRY

Hens, W. Leghorns, 28@30; colored, 35@36; roosters, young 33@34; old, 19@21; broilers, 30@33; fryers, 33@34; squabs, 2.50@4.00 dozen; ducks, 25@27; geese, 23@25; broiler turkeys, 40@47.

Belgian hares, live, 15@16; Jackrabbits, lum, 12@12½; heavy, 10½@11½.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5½.

Calves: Light weight, 12½@13; medium, 11½@12; heavy, 10@11.

Lambs: Yearlings, 10; milk, 12@13.

Sheep: Wethers, 8½@9; ewes, 6½@7.

Hogs: Hard, grain-fed, 100 to 150 lbs., 19; do, 150 to 250 lbs., 19½; do, 250 to 300 lbs., 19; do, 300 to 400 lbs., 18½.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle: Good grass steers, 1000 to 1200 lbs., 10@11; medium to good grass steers, 950 and over, 9½@10; good heifers, 1000 and over, 9@9½; good cows, 1000 and over, 8½@9; medium to good cows, 900 and over, 8½@9; canner cows, 4@5; good bulls, 5@6½; calves, 9@10.

POTATOES

Potatoes: Per 100 lbs.: River, choice 2.00@2.25; fancy 2.25@2.40; sweet, lb., 5@6; garnets, 2.00@2.25.

Stockton: Demand moderate, market firm, carloads f. o. b. usual terms, white varieties 2.50.

ONIONS

Onions: Onions, fancy, 2.00@2.25; choice, 2.00@2.15; Garlic, 21@22½.

VEGETABLES

Wholesale selling price:

Beans: String, 3@4; Wax, 4@5; Pole, 3@4; Limas, 6@8; Italian, 5@6.

Cabbage, doz., 40@55.

Celery, cr., 35@45.

Cucumbers: Large box, 65@75.

Corn, doz., 15@30.

Eggplant, southern, fy., 50@65.

Lettuce, doz., 25@35.

Okra, green, lb., 6@8.

Peppers, Bell, lb., 75@1.00; Chili, 7@11.

Peas, lb., 6½@7.

Radish, 7@9 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.25@1.50.

Spinach, 75@1.25.

Tomatoes: Sacramento River 75@1.00; Bay, 75@1.00 bx.

Squash: Summer, cr., 50@65; Italian, 50@1.00 bx.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 6.00@6.50; choice, 5.00@5.50; standards, 3.50@4.00; lemonettes, 3.50@4.00; grapefruit, fancy, 3.00@5.00; choice, 2.50@3.50; oranges, 4.25@5.50.

FRESH FRUITS

Wholesale selling price:

Apples: New crab, 75@1.25 for 20-lb. box; Gravensteins, 2.50@3.00 bx.; yellow transparent, 3.00@3.25; Alexanders, 2.00@2.25 bx.

Apricots: 1.25@1.50; loose, lb., 7@8; 130@160 ton.

Bananas, 7@7½.

Blackberries: So. 8.00@9.00.

Cantaloupes: Per crate, 1.50@1.75; pony crate, 1.00@1.25; flats, 50@65; Honey Dew and Casabas, 1½ per lb.; 75@1.00 per bx.

Figs, 1.50@2.00 bx.; Brunswick, 75@1.00.

Grapes: Supplies heavy. Demand and movement good; market firm. Sales direct to retailers: four basket crates, Thompson Seedless, best, 90@1.10; ripe stock, 75@85; Tokays and Malagas, 1.25@1.50, mostly 1.25.

Loganberries, ch., 8.00@12.00.

Huckleberries, lb., 17½@20.

Nectarines, cr., 1.00@1.25.

Peaches: Supplies liberal. Demand and movement moderate, market steady. Sales direct to retailers: Boxes, various varieties, mostly full ripe stock, 50@75; Elbertas, 85@1.00; Strawberry Free, 90@1.10.

Pears: Supplies very light of good stock. Demand and movement moderate, market steady. Sales direct to retailers: Std. boxes, Bartletts best, 3.00; ripe stock, 2.50@2.75.

Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00@1.25.

Pineapples, doz., 2.00@5.00.

Raspberries: Ch., 15.00@18.00.

Strawberries: Ch., 11.00@12.00.

Watermelons, lb., 1c.

DRIED FRUITS

The California Prune and Apricot Growers, Inc., announce prices:

Apricots, Sunsweet Quality: Choice 25, extra choice 26, fancy 27, extra fancy 29, Fancy Moorparks 29, extra fancy Moorparks 32. Growers Brand Quality: Choice 24½, extra choice 25½, fancy 26½. First Quality: Standards 19, slabs 21.

Prunes, basis price: 20-30s (flat lb.) 22, 30-40s (basis) 16, 40-50s (basis) 14, 50-60s (basis) 12, 60-70s (basis) 11½, 70-80s (basis) 11, 80-90s (basis) 11, 90-100s 11, 100-120s (flat lb.) 8½, 120s and up (flat lb.) 7½. Growers' Brand ⅛ cent under these prices.

Peach prices for the 1919 crop were announced at Fresno, July 16, by the California Peach Growers Inc. The price list agreed upon by the directors and announced by General Salesmanager Sturtevant, follows:

Effective this date and until further notice, our prices f. o. b. our California factories, on 1919 crop dried peaches for the domestic and foreign trade: September, October, November shipment, sellers' option; guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾; Muirs, 15.

Choice yellows, 15¼; Muirs, 15½.

Fancy yellows, 16⅛; Muirs, 17½.

Extra fancy yellows, 17¾; Muirs, 18¾.

Slabs yellows, 14½.

For "practically peeled" add 1½ cents per pound (any grade).

Prices above are all bulk basis.

For packing in: 50-pound or 25 kilos boxes add 1 cent per pound.

25-pound or 12½ kilos boxes, add 1¼ cents per pound.

10-pound boxes, add 2 cents per pound.

Blue ribbon peaches packed five-pound cartons, 12 per case, 12.00 per case.

Blue ribbon peaches packed two-pound cartons, 24 per case, 10.00 per case.

Bakers' special, "practically peeled," 16¾ per pound, bulk basis.

Figs: Wh. stand., 16; ch., 18½; ex. ch., 20; fy., 22½.

Apples: Ch. (in 50's), 21; ex. ch., (in 50's), 21½; fy., (in 50's), 23.

Pears: 1919 crop, stand., 20; ch., 22½; ex. ch., 23½; fy., 26.

NUTS

Almonds: The Exchange will make prices about September 10.

Prices named by outside buyers:

Nonpareil, 36, IXL 33, Ne Plus Ultra 32½, Peerless 29, Drake 26, Golden State 25, Languedoc 25, Hard Shell 20.

HOPS

Contracts for 1919 crop, 50@52½ lb.; 1918 crop, 50@55.

RICE

California: Fy., 12.25; ch., 12.00; flour, 4.75.

These quotations are per 100 lbs. gross weight for double bags of either 100 lbs. or 224 lbs. gross. Prices on mats are per two mats and come packed double mats of 48 lbs. gross each.

BEANS

Shippers quotations f. o. b. California: Bayo 6.50@6.75, Blackeye 5.75@6.00, Cranberry 7.00@7.50, Fava nominal, Garbanzo 11.25@12.00, Lima (f. o. b. So. Cal.) 12.00, Lima Henderson Bush 10.50@11.00, Pink 6.75@7.00, Red Kidney 11.50@12.00, Red Mexican 5.75@6.25, Tepary 3.00@3.50, White, large 7.50@7.75, White, small 7.75@8.00.

HONEY

Offerings light. Demand moderate and improving, market firm. Prices paid to producers. Extracted: Alfalfa Light Amber 14@16; White 16@18; Sage Light Amber 15@17; White 18@20; White Orange 18@20.

GRAIN AND FEEDS

Oats: Red feed, 2.85@2.95; black, 3.00@3.10 per cental.

Corn: California yellow, 3.65@3.75 cwt., Egyptian 3.40@3.50; Milo maize, 3.20@3.25.

Rye, 1.15@3.30.

Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.16	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

Citrus Markets

Los Angeles, August 27, 1919.

Picking and shipping has stopped account of strike. Some cars are on track and some fruit in house which may be a total loss unless strike is broken. Eastern situation is very satisfactory and the small amount of stock in transit and in storage will soon be exhausted.

Lemons are commanding only fair prices though Eastern weather conditions generally favor free movement of the fruit.

Shipments

Shipments of citrus fruits to date since November 1, 1918; Southern California: Oranges, 30,770 cars, lemons 8756, total 39,526. To same date last season; oranges, 3155, lemons 5148, total 18,303. Central California this season; oranges 4427, lemons 354, total 4781. To same date last season; oranges, 2539, lemons 115, total 2654. Northern California; oranges, 244, lemons 2, total 246. Last year same date; oranges, 203.

AT THE AUCTIONS

August 21

New York: 21 or., 1 mixed. Val. 2.70-7.60, grapefruit halves 1.90-2.20.

Philadelphia: 10 or., 1 lem. Val. 1.90-6.50, lem. 3.90-5.65.

St. Louis: 1 or., 1 lem. Val. 3.20, lem. 2.50-2.65.

Boston: 7 or., 1 lem. Val. 2.75-4.80, lem. 3.60-4.40, grapefruit 1.85-4.60.

August 22

New York: 16 or., 1 mixed. Val. 2.15-7.10, grapefruit 1.45.

Philadelphia: 5 cars. Val. 2.75-5.10, lem. 1.50.

Boston: 9 or., 1 lem. Val. 2.00-4.60, lem. 1.75-6.65, grapefruit 1.80-5.75.

Cincinnati: 2 or., 1 lem. Val. 2.75-4.45, lem. 3.15-4.40.

St. Louis: 2 or., 2 lem. Val. 3.15-3.75, lem. 2.10-3.20.

August 25

New York: 31 or., 1 grapefruit, 2 mixed, 2 lem. Val. 1.85-7.65, grapefruit 1.65-2.45, halves 95-2.80, lem. 1.70-4.60.

Philadelphia: 11 or., 1 lem. Val. 2.45-5.55, grapefruit 3.00, lem. 4.75-5.95.

Cincinnati: 2 or., 3 lem. Val. 3.45-4.40, lem. 1.70-3.85.

Pittsburg: 6 or., 1 lem. Val. 2.70-4.95, lem. 1.35-2.40.

Boston: 9 or., 2 lem. Val. 2.80-4.80, lem. 1.90-5.55, grapefruit halves 1.20-1.25.

St. Louis: 4 or., 2 lem. Val. 1.30-3.60, lem. 1.80-3.30.

August 26

New York: 18 or., 1 mixed. Val. 2.25-6.15, grapefruit halves 2.10.

Boston: 6 or., 2 lem. Val. 3.60-5.20, lem. 1.30-4.30, grapefruit 1.05-2.25, lem. 4.95.

St. Louis: 2 or., 1 lem. Val. 2.60-3.80, lem. 2.05.

Pittsburg: 2 or., 2 lem. Val. 3.45-4.50, lem. 2.05-5.50.

Philadelphia: 8 or., 1 lem. Val. 2.55-5.80, lem. 4.45.

MARKET NOTES

Early plantings of celery in the central part of the state will be ready for shipment by the middle of October. Late plantings are now being completed.

Talk among growers indicates there will be very heavy plantings in the Imperial Valley, possibly 4000 acres. In view of the fact that the yield was very short the past season such an acreage, representing a 65 per cent increase, would mean at least double last year's volume if yield is normal.

The supply of onions is short on the Los Angeles market.

Potatoes on the Los Angeles market jumped 40 to 50 cents per hundred weight on Tuesday because of heavy local and suburban demand owing to railway strike.

Supplies of fruit and vegetables have been tied up in freight yards in Los Angeles, but local market prices have been kept level by the large quantities of locally produced stuff which must be marketed at home because of the strike.

The bean crop of the United States will show a decline of 5,000,000 bushels from last year's production. California's output is estimated at 3,000,000 bags.

Several potato producing sections report that if they can not get transportation for their product they will let it rot in the ground rather than pay the expense of digging and have them rot for the lack of transportation.

It is reported that two large wholesalers of Los Angeles and San Francisco have already secured several good-sized boats for the purpose of shipping potatoes and onions to Los Angeles and San Diego to prevent a heavy shortage which will take place in a week or ten days if the present tie-up continues.

Tuolumne County has the honor of being the latest county to appoint a horticultural commissioner. H. T. Shaard is commissioner. In addition to acting as horticultural commissioner he will act as farm adviser and bee inspector and will also be given charge of the class in agriculture in the high school at Sonora. He surely has some job.

"An Inspiration to the Modern Stockman"

That is what one of our visitors said on going through our new factory. "It is an inspiration to me—the magnitude, your improved methods, your courteous treatment, your wonderful record of results amazes me. I know that I can return home and raise better hogs, better horses, better cattle. Your organization and your factory should be an inspiration to every stockman."

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For Hogs

Economy Stock Powder Made For a Purpose

Economy Stock Powder keeps the hog in a good thriving condition by acting on the liver, kidneys and blood. Keeps the stomach sweet. Acts as a general cleanser of the system—expels all worms—aids digestion—purifies the blood—keeps the bowels loose and active—prevents disease. Your brood sows need it to bring forth and properly nourish a sturdy healthy litter. Your pigs need it to ward off worms, keep stomach, bowels, kidneys and liver in order—to make them grow rapidly, finish quicker and at a substantial saving in feed cost.

Economy Stock Powder Made For a Purpose

For Cattle

Economy Stock Powder Made For a Purpose

Economy Stock Powders fed to cattle will pay for themselves several times over, not only in saving of feed, but by causing good digestion, and will shorten the feeding period from 15 to 30 days, also give a soft velvet finish, which will attract a high price on the market. When the Powder is fed regularly to the cattle it will prevent founder, indigestion and impaction. The different sodas in the powder not only expel the gases but also produce more of the digestive fluid for the stomach and cause every digestive organ to perform its proper function so that from 10 to 15 per cent more of the nutritious qualities is extracted from the food.

Economy Stock Powder Made For a Purpose

For Sheep

Economy Stock Powder Made For a Purpose

Economy Stock Powders are especially adapted to sheep. They are a tonic, a laxative, a blood purifier and a positive worm expeller and as an aid to digestion cannot be improved upon. When the powder is fed regularly it not only keeps the worms expelled and the constitution built up, but will insure a healthy and thrifty lamb and improve the wool both in quantity and quality. Let Economy Stock Powder help you by keeping the constitution built up, the blood purified and by preventing constipation and indigestion.

Economy Stock Powder Made For a Purpose

For Horses

Economy Stock Powder Made For a Purpose

Economy Stock Powders are indispensable for work horses, mares and stallions. It is a genuine renovator, laxative, blood purifier, positive in action, sure in results. Economy Stock Powders are valuable in all cases of worms, loss of appetite, stoppage of water and bowels, coughs and colds, epizootic, distemper, colic, and will cure all cases of general debility where a blood renovator and tonic is necessary.

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — September 6, 1919 — No. 10

SEP 11 1919

The Result of a Forest Fire

Feed Her and She'll Feed You

Silos have been a necessity ever since farming and dairying have been regarded as profitable businesses. Yet it has taken years for the farmer to recognize this. During the last few years he has come to know that it is an indispensable asset.

Today he wouldn't be without it. It increases his dairy production, lessens his feed bill and preserves the full food value of his crops. The Simplex Silo has done more toward causing this awakening than any other make. It is more practical and efficient. It is the last word in up-to-date feeding methods and a life-time land mark.

The Simplex Silo

is built of Oregon Pine Clear 2x6 Tongue and Groove Staves running full length the heigh of the silo. No end joints to leak and cause spoiled silage. With the CRISELL TANGENT TOP which keeps the silo in a true circle, in conjunction with diagonal cable bracing to the foundation, the SIMPLEX stands in its original shape under all conditions. Doors are heavy, air-tight, two-way type—hinge or lift.

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The PAPEC is guaranteed. Write for circulars.

See Our Display at California State Fair Sacramento

Mail The Coupon Today

SANTA FE LUMBER CO. San Francisco

California Cultivator

Vol. LIII, No. 10 Los Angeles, September 6, 1919 One Dollar Yearly

Seen This Week at the State Fair

By M. C. Holman Manager, San Francisco Office

WITH the opening of the gates at the big state fair grounds at Sacramento on Saturday of last week there was ushered in the greatest state fair that has ever been fashioned by California ingenuity. For the past several months the various committees have been laboring diligently to bring forth an attraction that should at once visualize the acme of agricultural, horticultural and live stock production in the state and furnish amusement for the thousands of people who will grasp the opportunity of seeing California's big state show.

The spacious grounds are located about five miles from the heart of the city of Sacramento. They are reached by two lines of trolley cars, several bus lines and the interurban electric line. The trip takes one past the great capitol buiding and through a very beautiful home section.

Passing through the main gate one is awed and dazzled by the splendor and magnificence of the scene. Flags are flying, bunting is waving, boys are calling the daily program of events, and the spirit of active interest prevails. Directly in front of the gates is the imposing, new horticultural and agricultural building which had its initial baptism of fruits, flowers and vegetables at this season's show. The massive brick and stone structure is about 300 feet long by 150 wide and houses most of the county exhibits, this year 20 in number, which in themselves make a splendid and attractive exhibit.

To the left after entering the grounds is the big automobile tent wbere dozens of models are shown, some with chassis only, others stripped for racing, while others are completely equipped in the most luxurious and pleasing fashion. On the right is the truck tent where trucks of various styles and sizes are found. These two tents are always interesting to the modern farmer, for he enjoys the pleasure of his auto and the benefits of his truck.

Turning to the left at the first road one comes to the entrance of the machinery building wherein may be seen the working of farm machinery of all kinds, together with powerful pumps throwing great and small streams in all directions. The noise is deafening, yet it is the noise of the implements of peace, not those of war; it is the voice of achievement, of construction, of advancement, of progress; not the voice of destruction.

Following this road we arrive at the poultry building. An excellent display of poultry, geese, pigeons, turkeys and rabbits will be found here. The very cream of the barnyard is displayed and the competition is most keen, for the coveted prizes mean much in increased value for the winners.

Like everything else of its kind the state fair has its main feature, the big section. That is the live stock section where sheep, hogs and cattle are penned. Great crowds are accustomed to haunt this section.

Passing from the live stock section we notice the childrens' playground where the little ones find complete pleasure on swings, coasters, sand piles, poles and other forms of juvenile diversions.

The women's restroom faces the playground and is fitted with all modern conveniences. Easy chairs may be had for the tired mothers, and correspondence paper will be found for the bewitching young lady who has promised all her friends that she will write home.

An immense drill ground lies in front of the horticultural building, and here on occasion soldiers and sailors give exhibitions of their superb training. Military bands frequently entertain the crowds, and athletic events usually find a place on the day's program. It is an open court for the home picnic which is always in evidence.

Now, retracing our steps and turning to the right from the main entrance road we come to the manufacturers' building. This is devoted to a display of all kinds of labor saving devices, furniture, stoves, pianos, cleaners, electrical appliances of every description, sewing machines and an almost nameless variety of other products from the factory and the school.

We jump at once from the manufacturers building to the big dairy section where will be found the best and highest bred dairy cows in the country, all elegantly groomed, with their production and their food being measured to a very exact scale.

A model dairy barn is shown with all of its equipment, together with a refrigerating plant, milking paraphernalia of all kinds, silos, feed cutters, engines, churns, milking machines of different types, and dozens of labor saving contrivances for the dairy.

Adjoining the dairy barns are the horse barns which are filled with the pick of equestrian beauty. Great Belgians, Clydesdales, Percherons and Shires lead in weight; French coach horses, with their magnificent spirit, the pacers and the trotters have their coterie of enthusiastic admirers.

One of the most interesting and instructive exhibits is that of tractors. This year's display is housed in two mammoth tents, 150 feet long and 60 feet wide. The tractors are always shown in a very complete exhibit. Manufacturers are desirous of presenting the merits of their respective machines, and the attendants are willing and able to point out the advantages possessed by their tractors over all others. One can gain a fair knowledge of the construction and operation of tractors by a careful study of the various types exhibited and listening to the discourses upon the several features. Lectures are also provided by the California Tractor and Implement Association, and they include talks upon the care and handling of tractors, lubrication, mechanical construction, repairing and the use and abuse of tractors.

One of the two tents is filled with accessories, and it usually includes a complete workshop where the visitor may see how repairs on tractors are made, watch the process of grinding the valves and gain much money-saving information all free of cost.

Those who delight in horse racing receive a good income on their 50 cent investment, as there is racing for about two hours every afternoon on the big mile course. Trotting and pacing races win the enthusiasm of crowds numbering close to 30,000 people on the big days.

There are plenty of restaurants, lots of side shows and dozens of ways to amuse one's self. There is never an idle moment at the big show.

Of special commercial features it will be interesting to note that of the California Hydraulic Engineering and Supply Company of San Francisco. This exhibit consists of a complete demonstrating display of milking machines, together with barn equipment, stalls, stanchions, feed and litter carriers and hay tools. The company also has one of the Alamo Silent Farm Lighting Plants in operation.

The De Laval Dairy Supply Company shows its complete line of cream separators, gas engines, feed cutters and dairy accessories, including milk testers, barn equipment, pumps, etc. Its space is 80 feet long by 20 wide and is conspicuously located in the dairy section.

The Delco Light Company has a full working model of its famous lighting plant for the farm house and grounds. This has been an attractive feature of the manufacturers section for a number of years.

The Killefer Manufacturing Company displays its tremendous sub-soil plows which penetrate the under surface, stirring up the ground to a depth of three to four feet.

And there are hundreds of other interesting commercial exhibits that are most wonderfully attractive. The whole fair is a fairyland of activity, a place of supreme interest that is well worth the time and money spent to see it.

The 1919 California State Fair

By R. P. Royce

THE expression "the biggest ever" as applied to fairs is so threadworn that its use is to be discouraged. However there are times when "biggest ever" seems to be the most useful phrase at hand for establishing comparative proportions, but rather than run the risk of using such a shop-worn term, the writer will venture the statement that the 1919 California state fair has registered improvement in every direction. That such is a fact is not to wonder. All branches of agriculture and live stock are developing in this state at an unusual rate, and inasmuch as the state fair is planned as the one big representative exhibit by which the progress of the state agriculturally and industrially can be measured, it is to be expected that the annual fair at Sacramento should show progress each succeeding year.

The California State Fair opened on schedule time—thanks to the California spirit. With a serious demoralization of traffic, brought about by the striking trainmen of Los Angeles, facing the officers and directors, with exhibits stopped en route and others not loaded at their origin, the mangement with rare courage sent out the word—"Will have a fair—strike or no strike, and will open on time." Plans were made to meet any contingency; judging was delayed a day or two to accommodate late arrivals; trucks and trailers were pressed into service and when the gates opened practically all original entries were in place.

While the California state fair in point of age can be counted one of the oldest fairs in the United States, in point of real development and accomplishment it is young. The first state fair was held at San Francisco in 1854, the second at Sacramento in 1855, in 1856 at San Jose, the following year at Stockton, and the next year at Marysville. Following the Marysville exhibit the fair was taken to Sacramento, where it has been held each year, except in 1915, the year of the Panama-Pacific International Exposition. Notwithstanding the fact that the fair was permanently located at Sacramento, it led a rather uncertain existence until 1907 when steps were taken to give it a permanent home. Prior to 1907 leased locations were used which precluded the erection of permanent buildings and substantial growth. So the real development of the show dates from 1907 despite a life of 65 years.

The progress made since 1907 has been marked and in keeping with the development of the state. Each year the directors of the state board of agriculture have given their best thought in an effort to make the fair as representative as possible, and each year it has taken on more of a finished appearance.

The one outstanding improvement to be noted this year is the completed county exhibit building erected at a cost of over $300,000. This building on the site of the building burned in 1916, will form the center for future development of the grounds, and subsequent building will conform to the same architecture. It is a building that any state would be proud of.

The slogan adopted for the 1919 fair, "A Show Worth Millions for a State

Continued on Page 299

Agricultural News Notes of the Pacific Coast

Northern California

Arbuckle will hold an almond festival.

Petaluma celebrated Egg Day on August 30.

Alameda County is planning a poison drive on squirrels this month.

California's rice crop it is estimated will total 4,500,000 sacks this year.

Rapid growth of Johnson grass is threatening rice fields in Butte and Glenn Counties.

It is stated that Japanese own one-third of the rice producing acreage in Butte County this year.

The University of California opened with an enrollment of 8294. This is more than double the enrollment of last year.

Sonoma County farm bureau will put two new cow testers to work in September in the Bodega and Petaluma-Valley Ford districts.

Twenty carloads of beans are now being shipped from California daily and supplying 90 per cent of the beans consumed in the United States.

Five aviators from Mather Field, Sacramento, will fly to Oregon this month and will remain there for several weeks in the service of the aerial forest fire patrol.

Prune and raisin growers, because of the cool nights prevailing in many sections, are beginning to speculate on possibility of loss such as occurred last year owing to early rains.

President Stephens of the Pacific Rice Growers' Association says that the market for California rice is strengthened by the shortage in the rice crop of the Orient last year.

Citrus growers of Butte County are petitioning the state university to locate in that section a plant pathologist to make complete investigation of causes of citrus blast and ascertain, if possible, a remedy.

Sutter County fruit growers have agreed to pay $3.25 per ton for picking grapes, and 12½c per 50-pound box for picking prunes. No rate was fixed for fig picking, which is now paid at the rate of 30 cents a box.

Poultrymen of Alameda County recently made an auto excursion to the Santa Cruz poultry section to study the methods of work of poultrymen in that section and discuss their common problems.

Wild duck herding is the latest field open to aviators. H. O. Jacobson, manager of one of the big rice fields in the Sacramento Valley announces that he will use an airplane this fall to herd the birds off his place.

Edward Cebrian, cattle grower of West Sacramento, has just received at his ranch two of the highest priced beef bulls ever brought to the Pacific Coast. One was purchased at a live stock sale in Chicago and the other from a Canadian breeder, Cebrian paying $25,000 for the two animals.

A county license system for automobile trucks is proposed in an ordinance in Sacramento County now being drafted. It is based on the theory that auto trucks are responsible for the greatest wear on the highways and that a revenue from them is the fairest means of raising necessary maintenance funds. The license fee is to be a small one, and in proportion to the load capacity.

Central California

The new sorghum factory at Hughson is operating.

Joseph Galliano of Clovis is starting an experiment in silk worm raising.

Lodi, San Joaquin County, expects to get a carload of government foodstuffs.

Tulare stock men have been making heavy shipments of mules outside of the state.

Tulare County's live stock and agricultural show will be held at Tulare, October 8-11.

The prune crop of the Santa Clara Valley is coming in three weeks ahead of last year.

Lodi's first carload of Tokay grapes for the season was sent by express to New York.

Peach growers of the Kerman district are hauling their dried fruit to the packing house at Biola.

A large proportion of the table grape shipments from Fresno district are of the Malaga variety.

The Lodi Fruit Growers Association will ship 100 cars of fruit through the California Fruit Exchange.

An outbreak of sheep scab is reported in the section lying along the Madera-Fresno County line.

Ranchers in the Kerman district of Fresno County are now busy with a squirrel poisoning campaign.

County Veterinarian Covel of Madera reports several outbreaks of hog cholera, which he is handling.

Cantaloupe growers are advised not to plant cantaloupes next year on fields which were affected by disease this year.

Stanislaus County is discussing the purchase of permanent fair grounds, live stock sales yard, etc., in the city of Modesto.

The Madera County farm bureau has appointed a manager for its department handling purchase and sale of feeding stuffs.

Farm Adviser Sullivan of Tulare County has on hand for distribution some tested seeds grown on the University Farm at Davis.

The federal bureau of markets has ended its market reports on cantaloupes and watermelons and has closed its office at Turlock.

The California Peach Growers' Association is arranging special means of handling the large amount of small sized clings that are showing up.

Manager Coykendall of the California Prune and Apricot Growers says the association will handle 180,000,000 pounds of prunes for members this year.

The Tulare Cooperative Poultry Association reports falling off in egg production owing to hot weather; also a cut in prices owing to the release of eggs now in storage.

Sweet potato growers met at Turlock Tuesday, August 26, to discuss details of sweet potato standardization and packing. Growers of the Atwater section met on the Monday preceding.

Professor Eason of the state university has been making a survey of the poultry raising section in Stanislaus County with a view to making arrangement for lecturcs and demonstrations to be given this fall.

Southern California

The Elsinore cannery has opened on tomatoes.

The Yucaipa Valley apple crop breaks all records this year.

Construction has started on the big new packing house at Coachella.

Lankershim walnut growers report offers of 28 cents a pound for their nuts.

Escondido invites everybody to come to her grape festival September 9.

Cotton picking has begun in the Palo Verdc Valley of Riverside County.

Cotton pickers are busy in the Coachella Valley. They make two cents a pound.

Manager Linn of Riverside Citrus Exchange estimates crop at 50 per cent of normal.

Many of the small streams in the San Bernardino mountains have already dried up.

The growers' association of Hemet-San Jacinto has handled nearly 3,000 tons of apricots.

Hemet apricot canneries report some disappointment among cutters and packers both over the small size of fruit.

The California Prune and Apricot Growers, Inc. is planning for a membership drive throughout the state this fall.

A new cow testing association has been formed by dairymen who are members of the Orange County farm bureau.

The Santa Ana Valley Walnut Growers' Association expects to ship 1800 tons of nuts this year. Last year it handled 1300 tons.

President Lewis of the Santa Ana Valley Walnut Growers says the damage to nuts from the codling worm is less than last year.

The Murrietta farm center will show a duplicate of its big cooperative grain elevator at the Southern California Fair at Riverside.

The management of the Southern California Fair at Riverside is planning to hold a sale of pure bred cattle during the fair week.

One Antelope Valley cantaloupe grower lost two carloads of ripe "cants" which could not be moved because of railway strike.

The election in Oxnard drainage district resulted in an overwhelming vote to carry through the drainage plan, bonding the district for $200,000.

The new dehydrating plant at Pomona has begun operation on grapes. After the grape season is over it will handle vegetables. The plant is installed in an old winery building.

The Traction Engine and Implement Dealers Association of Southern California will hold field demonstrations on the Rancho La Brea west of Los Angeles, September 16-21.

The Arizona-California River regulation committee of the Los Angeles chamber of commerce has reported favorably to the construction of the All-American Canal in the Imperial Valley.

The canning plant of the California Canners at Santa Ana is now operating on chili peppers, handling 50 tons daily. Most of the chilis come from the Garden Grove and Stanton districts and are brought in by motor trucks.

The Coast and General

Wasco County, Oregon, will hold its fair October 7-11.

The mohair pool of the farm bureau of Linn County, Oregon, sold at 64 cents.

The mohair raisers of Linn County, Oregon, produced five car loads of fleeces.

The first convention of Northwestern seed growers, seed dealers, and state officials was held in Spokane, Washington, August 29-30.

The Oregon National Farm Loan Association, with headquarters in Salem, claims to be the largest federal farm loan association in the Northwest.

One thousand new silos are going up in Oregon this year according to the statement of W. L. Westover, silo specialist of the Oregon agricultural college.

The last of the eight car loads of black cherries shipped by the Apple Growers' Association of Hood River, Oregon, set a fruit price record, selling for $4678 net, f. o. b. Hood River.

County Agriculturalist Waub of Lane County, Oregon, says that the acreage in corn this year in that county is at least 8000, a 2000 acre increase over last year's plantings.

Milk producers of Clarke County, Washington, have organized the Dairy Products Company for the manufacture of butter, condensed milk, ice cream and cheese, and are offering $100 for a name for their product.

Showers fell in the northern and eastern portions of Arizona last week but did not interfere with farm work. The warm, clear weather has been of decided benefit to the Arizona-Egyptian cotton in the Salt River Valley, reports indicating a rapid recovery from the effects of too much rain.

A trainload of Yakima, Washington, lambs made up from consignments from several of the wool growers started for Chicago recently. John Cleman loaded four cars at Ellensburg, J. B. Kays loaded five cars at Yakima and five at Toppenish. Cort Meyer loaded two at Mabton. Many trainloads will be sent East during the next three weeks.

The new Western Washington dairy farm at Puyallup will not be finished as planned when the funds were appropriated by the last session of the legislature, because of higher costs than had been anticipated. The modified plans call for an experimental dairy farm with a capacity of 50 milking cows and a total of about 100 head, including young stock and bulls.

The Pierce County, Washington, Milk Producers' Association voted almost unanimously at its annual meeting to test the new state anti-price-fixing law on dairy products, which was branded "a fool piece of legislation." No new milk price was set at the meeting, but increasing cost of feed, it is said, will compel the dairymen to ask more for their product.

Five threshing machine explosions in one day, all caused by smut, were reported from Walla Walla County, Washington, by Captain W. A. Groce, assistant state firo marshal. Captain Groce said that had the machines been equipped with the suction fans recommended by the federal department of agriculture for drawing smut out of the cylinders the explosions probably would not have occurred.

The Fire Menace in California Forests

By Arthur L. Dahl

THE present summer has been a particularly bad one from the standpoint of the number and destructiveness of the forest fires that annually visit our timbered regions of the West and North. In spite of the greatest efforts made by Uncle Sam and his hundreds of trained forest rangers, these destructive fires break out and not only devastate vast areas of commercial timber, but lay waste prosperous communities, burning grain, orchards, homes and valuable improvements that lie in their path.

Practically all forest fires are started as a result of carelessness, for while lightning will occasionally strike a tree during a thunder storm and start a fire, in 99 cases out of 100 the fire starts from a lighted match tossed carelessly aside amongst dry leaves, or sparks carried from an abandoned camp fire, or some similar thoughtless act of man. In its campaign against the fire hazard the forest service lays the greatest stress upon educating the public to prevent forest fires by being careful of their every act while surrounded by inflammable material.

There are a few people who believe that forest fires are not always the enemies of mankind that we are taught to believe, basing their belief on the theory that if the dense undergrowth that springs up in the open spaces is removed occasionally by fire, the mature trees and the grass for grazing have better chances to develop. They cite the practice of some Indian tribes in burning certain parts of their hunting grounds as proof that the Indians wanted to improve their grazing.

This theory, however, is neither scientific nor true as observation of the effects of fire will easily demonstrate. Aside from the redwoods, which seem immune to fire, practically all forest trees are injured by burning, and even a light fire will absolutely kill the young growth and prevent reproduction. While it is true that after a fire has visited a certain area, green vegetation again springs up after the rains, this vegetation is nearly always inferior to that which preceded it, and in the course of several fires the grasses and forage suitable for grazing entirely disappear, leaving only scrubby chapparal to occupy the ground. Furthermore, where the forest fire occurs in a locality where the vegetation is dense and the flames become very hot and burn for some time, all of the vegetable matter in the soil is destroyed and a chemical change takes place in the ground that often prevents any kind of vegetation from again getting a start there. With the top unprotected from the hot sun and heavy rains, the ground is soon washed away to bedrock, and where steep grades occur, as on our mountains, the earth and rocks are washed down by the flooded waters, filling up the streams and spreading out over the finer soil of the valleys, bringing destruction in their wake. All of these evils follow forest fires.

Perhaps the day will come when the people who use our forests or travel through our public lands, where the danger from forest fires exists, will be educated to the point where they will no longer be careless and start them, but until that time comes the forest rangers find it necessary not only to warn people against the hazard, but to take steps to overcome fires when they occur.

In the majority of our national forests, particularly in California, the chief duty of the forest rangers is to prevent and extinguish forest fires, and the scheme of their work is laid out on that basis. Each ranger is assigned a definite district in which he lives and which he patrols during the fire season. He becomes familiar with all the topographic features of the area under his charge, learns the sources of danger and plans in advance where to go for help when the need arises. By being constantly in the saddle during the dry season he rides from ridge to ridge or visits the places where the danger from fires exists. He knows the various settlers in his district and arranges with them to report any fires that might occur in their vicinity, and if campers or recreationists come into the district he cautions them against building camp fires in dangerous places. To enable him to keep in close touch with the forest supervisor and the other rangers the government has installed telephone lines leading from the ranger stations to headquarters, and a portable instrument capable of being attached to the wires at any point is a part of each ranger's equipment. As time is the vital element in fighting fires it is of the utmost importance that speedy and adequate assistance be secured as quickly as possible. Supplementing the telephone lines of communication the forest service now maintains a number of central lookout stations constructed on the tops of high peaks overlooking a wide expanse of territory. In these lookout stations a ranger is stationed whose sole duty is to watch for fires. Usually the lookout station is round in shape, with windows on all sides, so that the watcher has a clear view in every direction. He is furnished with powerful field glasses and with various scientific instruments for locating particular spots on the map, estimating distances, etc. Should a cloud of smoke be discerned in the distance, by using his instruments he can locate the place approximately on the map, and by telephoning the information to the nearest ranger or to the supervisor's office, a force of fire fighters can be immediately dispatched to the scene.

Nearly all the rangers are taught the elements of surveying, the use of a compass, etc., and during the periods when the fire hazard is not great the men are used to make detailed maps of their districts. On these maps are shown the location of all roads, streams, settlements, and other information of value. Contour lines are drawn and elevations determined. These maps, under the direction of skilled engineers and draughtsmen, are enlarged and drawn to accurate scale. Copies are furnished to the rangers so that they can be familiar not only with their own particular district, but those in other parts of the national forest as well. On these maps are also located the permanent tool chests and supply station from which they can secure the necesary fire fighting tools when needed.

A hundred men unequipped with proper tools would be about as useless in fighting fires as a hundred soldiers without arms would be on the battle field. In the old days when men were sent from the valley towns into the mountain fastnesses to fight fires, it was found on arrival that there were only a few mattocks or rakes or shovels available, and the men had to take turns in using them, just as the Russians had to wait for a man to be killed before securing his gun. Now, however, the government has installed hundreds of permanent tool chests in various parts of the national forests, in which are stored for fire use supplies of shovels, rakes, mattocks, water canteens and other essentials to fire fighting. When a fire occurs in a particular district the ranger goes to the nearest tool chest and obtains the tools needed to equip the men, thus saving valuable time. While these tool boxes are kept locked, each ranger has a key, and often the nearest settler is given a key for use when a ranger is not near.

To render all parts of the mountains acessible and enable fire fighters to be brought quickly to any given spot, the government has constructed thousands of miles of trails and roads, built on good grades and kept in good repair. In Southern California, where the fire menace is acute on account of the dry chaparral covering of the mountains, a wonderful system of trails has been constructed, leading up all canyons and rendering accessible all parts of the mountains. Toward the construction of these trails the county supervisors, water companies and other interested parties have contributed large sums of money to supplement the appropriations made by Uncle Sam. This is also true of firebreaks or fire lanes built along ridges or at the base of the mountains to aid in fighting any fires that occur there.

These firebreaks are merely long strips of land which are entirely cleared of vegetation and kept clear of all inflammable material. They vary in width from 50 to 100 feet or more and are designed to prevent the spread of fires. They also serve as effective points from which to start backfires. The system of fire lanes is based upon the experience of the Indian forest service, for in India the forests are all divided into districts by elaborate systems of firebreaks. Should a fire start in a certain locality it can be prevented from spreading by these cleared spaces. Where firebreaks are constructed, if a fire starts, the rangers usually concentrate their force along the cleared lanes and by starting backfires broaden the area of barren land so that the fire must die out from lack of further material. As a means of restricting fires and enabling the rangers to quickly control any that start, firebreaks are well worth their cost, and the system is being gradually extended in Southern California as fast as funds will permit.

To get men to the scene of a fire quickly the forest service maintains a number of automobiles, especially equipped with fire fighting tools, which are used where roads lead to the scene of the blaze. In the higher mountains the men are taken in on horses, or they walk, the supplies being packed in on horses or burros, a number of which are kept by the service for the purpose. To compel able-bodied men to fight fires if they refuse to respond to requests for assistance, the federal and state laws empower rangers to draft men into service. To compensate the fighters for their time the forest service usually sets aside a certain appropriation to be used in paying the men. Arrangements are also made with irrigation and power companies employing a number of men on construction work, to dispatch their crews to help fight fires when they threaten the watershed in which they are interested. Most of the fire fighters, however, are picked up in the valley towns and taken to the scene of the fire by the rangers.

Save the Water

A writer in the Agricultural Review, organ of the International Dry Farming Congress, is appealing for saving soil moisture. He says:

"Few realize the amount of water taken from the soil by a growth of even small weeds. Each weed takes as much as a cultivated plant of the same size, and since there are many times more weeds in a given area than of cultivated plants, moisture is sapped in proportion.

"Experts differ as to how moisture escapes from the soil, when there are no weeds or other vegetation. Some claim the water rises to the surface by capillarity, while others say the water first evaporates within the soil and then moves upward through the interstices between the soil particles to the surface, and out into the atmosphere. The writer of these lines holds to the belief that the latter theory is more nearly correct, but it really makes very little difference in practice. If a proper soil mulch is maintained, the escape of the moisture is greatly retarded, whether it reaches the mulch in the form of vapor or water. In making the mulch the innumerable soil cracks which act as so many chimneys for water vapor to escape through are broken up. If water deep below the surface evaporates and rises, it is checked when prevented by any means from passing out into the atmosphere and becomes soil moisture again. This is proven by covering a space of ground with boards or any other impervious material, when the supply of moisture in the soil is too small to enable capillary attraction to overcome the pull of gravity. This also explains why ground that is too dry to plow can frequently be made plowable by disking. The mulch made by the disk checks the upward flow of the water vapor coming from below, and as it continues to rise and collect under the mulch it becomes more and more dense, until finally the dry soil particles reabsorb it.

"The conservation of soil moisture is the basic principle of dry farming."

Established 1877 Forty-second Year

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and LIVESTOCK and DAIRY JOURNAL

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

To any Californian the photograph on this week's cover brings a reminiscent shudder as he recalls the days when the smoke clouds hung over the nearby mountains and nights when the terrifying glow from the forest fires flaunted itself as a banner of destruction. Too well he knew what the fire meant to his irrigation supply next summer when his orchards would be crying out for the water which the fire denuded mountain slopes had let rush off to the ocean to be wasted. Every year has seen improvement in fire fighting and precautions to prevent fire. This year excellent work has been done by air patrols in both Northern and Southern California national forests. On fifth page of this issue Mr. Dahl tells what Uncle Sam is doing to protect our watersheds.

WHY?

Discussing the matter of securing returns for the egg producer, the Petaluma Poultry Journal says:

"The egg speculator is hardly to be blamed for trying to keep poultrymen from signing up with the corporation, for the corporation reduces his gains; but when the speculator talks the poultryman should 'wink the other eye.' The corporation will live and continue to be successful, and eventually the man who now hangs back will become a member. Why not add the strength of your name and get the honor attached to membership right now instead of wasting time?"

And so long as the poultry producers who read the California Cultivator are reasonable people, the only comment we will make in addition is, Why?

NEXT YEAR'S FRUIT

Too often the deciduous fruit grower considers that the approach of the dormant season indicates that his trees have ceased drawing upon the soil for nourishment. The fruit is off; the leaves are dropping; hence why the need of continued expensive irrigation? The same man would not think of withholding feed from his cow which has ceased to give milk or his horse which, for the time being, is taking a rest, for he realizes a certain amount of maintenance ration is necessary. This is equally true of the tree. Even at its most completely dormant season the tree has certain demands for water, and particularly is this the case when the buds are forming this fall for next year's fruit crop. Continued or heavy irrigation at this period is not required and under certain conditions might prove detrimental, that is, a new growth might be given to the tree which, with the coming of November's cool nights, might injure it and cause a reduction in next year's crop. But this is hardly probable. The careful grower can soon learn the needs of his trees by inspection.

See that there is sufficient moisture to give lusty, strong fruit buds this fall for next spring's setting.

MORE WHEAT

The University of California, the Sperry people and others are conducting a magnificent campaign for more and better wheat in California. Our production today is only a mere fraction of what it was a score of years ago. This reduction has been caused partly by making orchards, vineyards, or possibly rice fields, of the former wheat fields. It is also due in part to the belief of the wheat producer that California lands were "worn out."

But tractor farming is turning up the farm under the farm and disclosing the fact that there are still thousands of acres of California's rich fields which will produce large crops of wheat. In addition to turning up the "new farm" by deeper plowing there has been a searching for and creating of new varieties which are found even in trying seasons to produce crops in excess of those of the "days of old, the days of gold."

Two varieties which it is now declared are succeeding best in California are the Early Baart, grown for some years, and a still newer variety, Bunyip. The foundation for this wheat now in the state was 100 pounds of wheat secured in 1915 from the Australian exhibit at the Panama-Pacific exposition. This hundred pounds increased until last year it became 100 tons. May the wheat production of California increase proportionately.

KEEP CREDIT GOOD

It has been asserted by financial oxperts that one reason why farmers' interest rates are higher than those given to mercantile people is because the farmer is, as a classs, lax in payments of interest. He knows he's perfectly good, but allows time to drift by, and his interest is paid on convenience rather than on time.

This way of doing things, if carried into the latest farm financing, that of the federal farm loan bank, will have the same depressing effect on values of the bonds that it has on other farm paper. A desire to prevent this has induced President Joyce of the federal land bank at Berkeley to issue a statement, really an appeal to farmers to keep up their regular payments. Mr. Joyce writes: "A few of our borrowers are delinquent more than 90 days in their installment payments. In most cases a sufficient reason has been given us for the delay; however, it is most important that all instaliment payments be made promptly when they are due. Any mortgage upon which a payment is delinquent 90 days must be withdrawn as a basis for bond issue. The board considers such mortgages undesirable. All securities so withdrawn must be carried by the bank. In order to keep ourselves in funds it is necessary that every mortgage which we have is available as a basis for bond issue. Therefore, the necessity for prompt payment of installments must be apparent to you. It might give rise to the thought in the minds of the members of the farm loan board at Washington that associations whose borrowers are in the habit of being delinquent in their payments are located in an unfavorable region. I am glad to say, however, that in the majority of the associations in the 11th District, there has never been an installment payment delinquent 90 days."

MOTOR TRUCKS

Farmers in some communities have found advantage in cooperative ownership of motor trucks of large capacity. At first this was merely a matter of self defense from excessive transportation charges, but has proved so economical and so effective in giving to the farmers of the community transportation when wanted that the movement will grow, and in all sections of the country these cooperative organizations will exist. It costs many hundreds of dollars to get a dependable truck of large capacity, and its use on one farm of ordinary size is so limited that the investment is not justified, but a dozen or a score of farmers may well unite, and this so reduces overhead expense that it is proving profitable. Operation expenses, depreciation, overhead, interest, etc., may be distributed equitably by very simple bookkeeping.

Comenting on one of these association in the Middle West, which has proven exceptionally successful, the department of agriculture says:

"According to the experience of the Harford County Cooperative Association the rural motor route supplies a solution of transportation and marketing problems for many farming sections which are located not more than 30 to 40 miles from a desirable city market and which are favored with permanent hard roads. Farmers who organize such associations are advised to study carefully their local conditions so as to be sure that there is enough year-round hauling to justify the establishment of a truck route. They should raise sufficient funds at the outset so that they can pay cash for a truck. It is cheaper to operate a four or five-ton truck that it is to run one of two-ton capacity, provided there is sufficient tonnage available. As a rule, the new club will not go wrong if it begins business with a larger truck than it really needs, as the surplus space will allow for the expansion and development of the business which is sure to follow in well selected territory.

"Trucks of only standard make should be used, as under such conditions repairs will be easy to get and the overhauling of the truck will not be outside the ability of the average mechanic. In purchasing the trucks special attention should be paid to the cost of operation and records of performance as well as to the price of the machine."

STOP THE STRIKES

No more causeless strike was ever pulled off than that which has disrupted and caused enormous loss to producing and industrial interests of Southern California. The walk-out of the steam railway men was in direct violation of the contract of their union and was met by the union headquarters located in the East issuing positive orders to return. The members of the union asserted that it was an individual strike out and that the union was not concerned in it. However, it is asserted that votes were taken in the various lodge rooms of the order. But the issue now is not so much to place the responsibility for the losses producers and manufacturers, and in fact, the general public has had forced upon them as to find some method of preventing this wastefulness in the future.

As the Cultivator asserted last week the time is coming when a reasonable solution of this problem will be reached. Those whose interests suffer the most and who are most helpless in the entire matter are neither producers, manufacturers nor laborers, but the public which pays the bills. Every such strike which causes the loss of thousands of tons of perishables reduces the amount of food available and causes rise in prices, and from the very necessities of the case the losses forced upon the manufacturers and the railroad people have to be made up by increased prices charged the consumer. This, on top of the demands made by the laboring people, means only another addition to the H. C. of L., and soon it will become necessary for another increase in the wages, etc., forever.

In the matter of preventing loss in transportation it has been suggested that it should be provided, as authorized by the decision of the supreme court of the United States in sustaining the Adamson Eight Hour law, that whenever a labor dispute threatens the operation of an instrumentality of interstate communication, the president shall appoint a commission which shall write a contract for the parties, to remain in force until they shall voluntarily agree between themselves, thus retaining to both parties their freedom of contract, subject only to the paramount interest of the public in the continued operation of the railway service. Such proposals merely bring emphaticaly to the attention of the public and possible disputants the limits which the paramount right of social self-defense has long since placed upon the activity of combinations.

This suggestion is only one of many, and until the general public demands in most emphatic terms that this loss shall be stopped, we will probably continue the everlasting condition and continued losses.

Farmers of the Ceres district in Stanislaus County are seriously considering drainage problems.

THE STATE FAIR

Continued from Page 295

Worth Billions," perhaps best indicates the scope of this fair. Almost every branch of industry of any importance comes in for representation. Of course live stock, agriculture and horticulture hold the center, with mining and manufacturing following closely in importance.

This year's show of live stock is in no way disappointing, and in many ways is a surprise to those who are in close touch with the industry. There is no better criterion by which to judge the progress of animal husbandry than the exhibits made by breeders. The growth of the business is reflected in the growth of the exhibits. The show of swine is outstanding in point of numbers exhibited. The growth of this branch of the live stock industry during the past few years, especially during the past five years, has been phenomenal. All breeds are seen in the pens, and competition for breed honors is keen. Judging began Monday morning, September 1. The following judges have been engaged to pass on the different breeds: Wyman M. Lovejoy of Illinois, Berkshires; Thos. A. Shattuck of Nebraska, Poland-Chinas; Dwight Putnam of Nebraska, Duroc-Jerseys; Professor J. I. Thompson, University of California, Chester Whites, Yorkshires and other breeds. Aside from liberal prizes offered by the fair management, the various record associations are offering many special prizes and trophies. Futurity shows are staged by Poland-China and Duroc-Jersey breeders. A feature that is being given added importance is the show of fat barrows in breed and inter-breed competition.

The dairy cattle division is particularly well balanced this year, the major breeds being out in force with a quality of entries that promises much. In point of numbers the Holsteins have the largest exhibit, with the Guernsey and Jersey breeds nearly equal and not far behind. The entry list of Ayrshires is strong. Hugh G. Van Pelt of Iowa, a dairy judge of national reputation, is aligning the various classes.

The show of beef cattle, while not large, brought out a number of new herds to measure their strength with many of the older established herds that have been factors at former fairs. Two breeds, Shorthorns and Herefords, are represented. Professor John C. Burns of Texas tied the ribbons in both breeds.

One of the surprises of the entire live stock division is the marked increase and interest in the horse department, both light and heavy breeds. So large has been the increase that stall room is almost at a premium and several of the barns have had to be remodeled in order to take care of exhibitors. Again, in this department there is a pleasing number of new exhibitors. Professor Burns is scheduled to rate the heavy breeds and Professor E. A. Trowbridge of Missouri, a judge of national standing, passes on the light horses in the breeding classes and the night horse show.

The sheep show is somewhat above the average, but not up to what it should be. The principal breeds came before Professor R. F. Miller, formerly of the University of California, but now of Texas, for judgment.

Every foot of space in the new county exhibit building is taken, showing a splendid exhibit of the varied resources of the counties of the state. Elaborate displays are being made, all vying with each other to present the most complete and attractive exposition of resources. The following counties have exhibits: Yolo, Kern, San Joaquin, Fresno, Glenn, Sacramento, Solano, Los Angeles, Tehama, Placer, Kings, Alameda, Siskiyou, San Louis Obispo, Humbolt and Calaveras. Various branches of the state government have exhibits illustrating their work, one of the most elaborate and educational exhibits being made by the state fish and game commission. For a birdseye view of California a visit to the county exhibit building is most impressive.

The University of California holds a large part in this year's fair. So important has the university exhibit become that a special building has been set aside to house it. Every department is represented, but the work of the college of agriculture is stressed.

The show of tractors, automobiles, farm implements, silos, etc., is complete, over 66,000 square feet of space having been taken by the tractor and implement dealers.

The management of the state fair recognizes that the chief function of the institution is to serve an educational purpose and to hold out to all an inspiration for better farming, better live stock and better citizenship. However, it is not unmindful that the fair is expected to amuse and entertain the thousands who each year come to Sacramento for recreation. Accordingly all the usual amusement features have been taken care of and arrangements made to crowd into each hour of the nine days entertainment of high order.

The California state fair belongs to every man, woman and child in this state. It is first an educational institution and holds out encouragement to all to make progress. As such it deserves and enjoys the support of the entire population, and this year's event marks a new milestone in the development of California resources.

Southern California Fair

Riverside

Oct. 7 to 11

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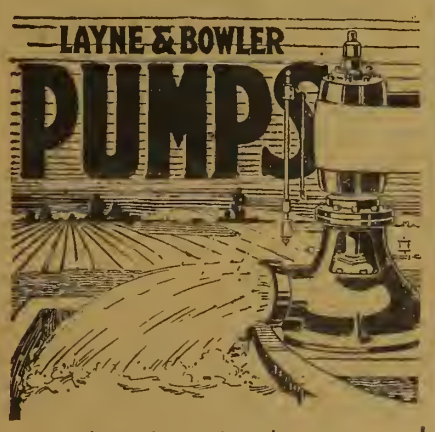

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OREGON GROWERS ASSOCIATION

The new Oregon Growers Association has already lined up 15,000 acres of fruit in the Willamette and Umpqua Valleys and has hardly started its membership campaign. It will start with the crop of 1920. Robert C. Paulus, manager of the Salem Fruit Union, will be general manager and J. O. Holt, manager of the Eugene Growers Association, will be manager of the packing corporation, which will pack all fruits of the association. Many of the local growers' associations have voted to disband after the present crops are attended to and to become members in the new organization.

Prof. C. I. Lewis, for 14 years chief of the department of horticulture at the Oregon agricultural college, has resigned his position to become organization manager.

APPLE CIDER

Prohibition has created a great demand for non-intoxicating beverages, and nowhere is this demand more in evidence than in the case of our fruit juices. The fact should not be overlooked by those who have apples going to waste. There is a good chance to turn such fruit into a profitable source of revenue by making it up into cider.

It is predicted that with the increased demand, apple cider this fall and winter will sell for anywhere from 30 cents to one dollar per gallon. Much cull fruit which might not otherwise be profitably disposed of may be used in this way.

Care in washing the fruit used and in discarding the decayed and wormy apples will help in building up a trade.

Hard cider is, of course, tabooed, and as sweet cider is a more or less perishable product, suggestion in regard to keeping it sweet may not be amiss. Either of the following methods described in the American Fruit Grower is effective:

"Cider can be kept indefinitely with flavor and appearance unchanged at exactly the point desired and allowable, and you don't have to use poisonous preservatives either. Just filter it and then pasteurize it in the final container (bottle or jug) sealed tight at about 150 degrees Fahrenheit and hold it at that temperature for half an hour and you can't tell it from fresh new juice.

"Perhaps the most simple method known is to screen the cider through a cloth to remove the larger particles of solids, put in a copper kettle, evaporating pan, or steam evaporator, and heat until it will just come to a boiling heat. Meantime keep skimming off the scum as fast as it rises. The moment the juice comes to a boil, shut off the heat and pour into sterilized gallon jugs or other containers in which it can be corked up tight. The corks should be pressed a little below the level of the top and covered over with sealing wax. Then store on the floor of a cool cellar and the juice will keep for many months."—R. A. McGinty, Colorado Agricultural College

Order tulips, daffodils, and hyacinths for spring flowering. They may be planted the last of September or first of October with good results.

PROFITS FROM BY-PRODUCTS

The by-product, at one time considered a negligible quantity, is rapidly changing its significance, and has in several industries actually supplanted the product itself by taking first place as a financial success. The fruit business has taken such a development. On this point the American Fruit Grower comments:

The supply of fresh fruit is altogether too small to satisfy the fruit hunger of the purchasing public. It was long a question with growers of many fruits what could be done with the less perfect, the undersized and the windfall. Moreover, fruit will not keep fresh indefinitely, and even with such varieties as are suited to cold storage the expense is a heavy item during the months of storage.

When people cannot get fresh fruit they yet demand some fruit product, and the man who puts a good one on the market is sure of a satisfying return. Fruit juices of all kinds, jellies, jams, pastes, preserved fruit, and canned and dried fruit, all command good prices which will rise with the rising prices for fresh fruit.

Methods of producing by-products are constantly improving, and there is no reason to fear overproduction. There is a substantial underproduction at present and, should the time come when this is no longer so, the multiplicity of by-products offers a splendid outlet for the surplus.

It is unnecessary, however, to await an unlikely overproduction of fresh fruit before going into the business of by-products. It will be well worth your while to study the possibilies in this line of such fruits as you raise. Beginning in a small way, until you have found your market and know what its demands are, you may develop a line of sales that will surprise you by being really more profitable than the sale of your fresh fruit now is.

Close-Up Orchard Work.
30-X Samson Sieve Grip Tractor in operation.

"HONEYDEW" GRAPES

A special conference was called by Director Hecke recently for the purpose of formulating regulations to govern the handling of "honeydew" grapes in packing houses to prevent the spread of mealybugs. It was definitely decided that under no conditions would grapes showing honeydew be permitted to be packed in crates for shipment. The mealybug under consideration has been in the state for many years and is common in greenhouses over the entire United States. It has shown a marked fondness for grapes ever since vineyards became extensive in California. While the insect does not destroy either the vine or grape, the sweet exudation which is deposited upon the fruit lessens the market value of the product. It is hoped to check this pest before it becomes generally scattered throughout the state. Some vineyards have been found so badly infested that growers will probably be unable to ship a car of grapes from these infested vineyards. Growers and packers are requested to avoid as far as possible bringing "honeydew" grapes into the packing house. They are not only hard to sort and cull, but there is great danger of spreading the mealybug to uninfested vineyards. Regulations regarding the handling of such "honeydew" grapes will be forthcoming in the near future.

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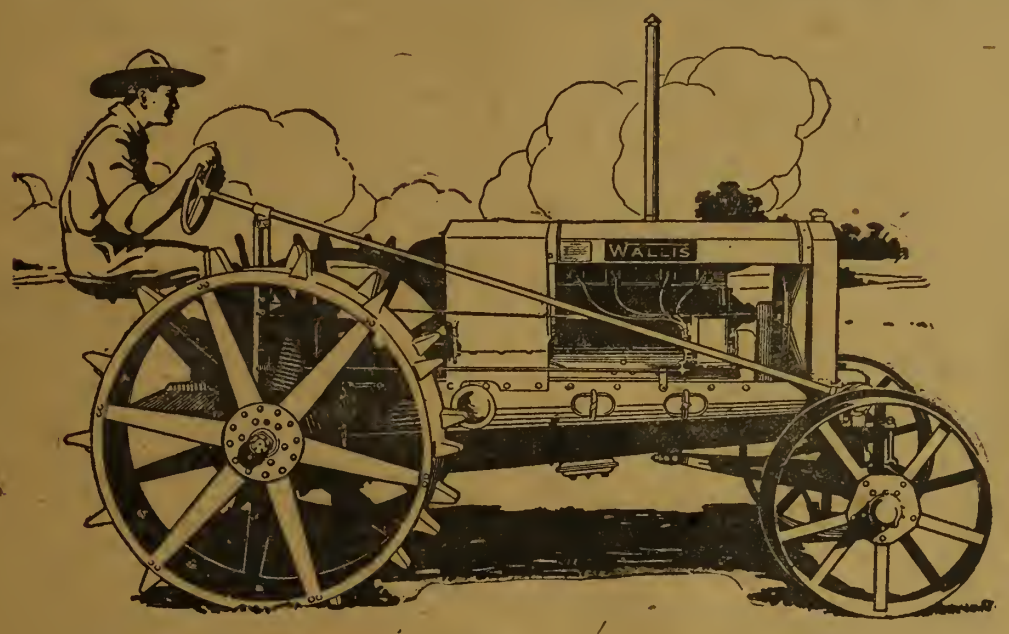

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Moreover, a well-known institution, fifty years old, sells the Wallis, America's Foremost Tractor.

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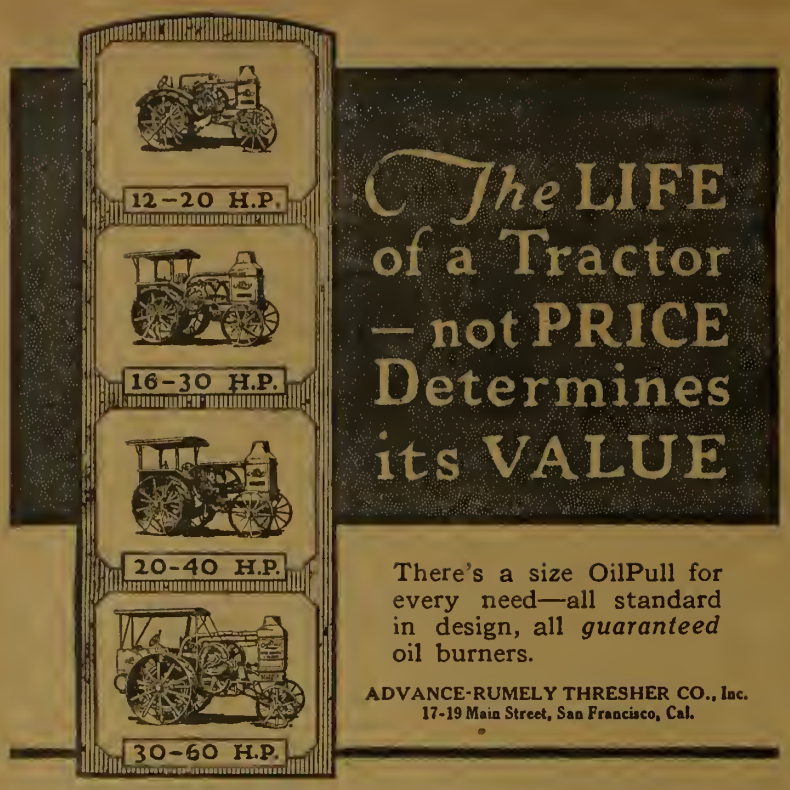
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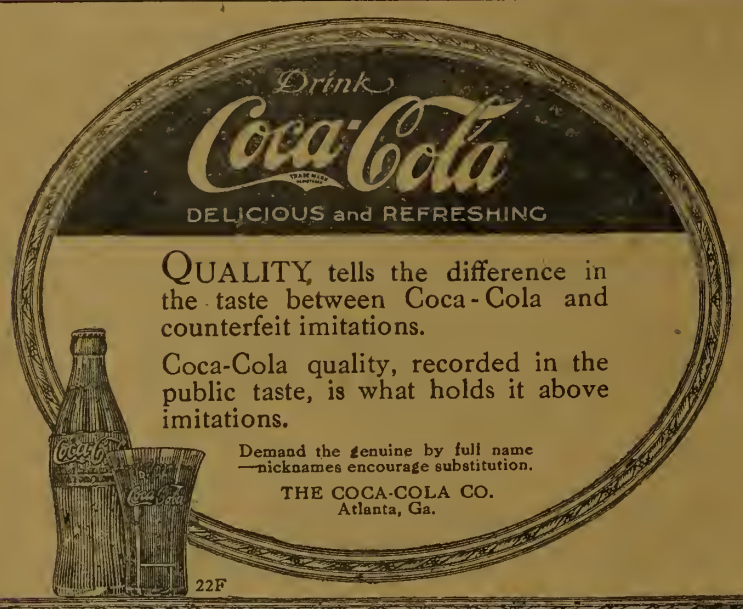
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California Soils for Wheat and Barley

By Norman F. D'Evelyn

THE only soils in California that are not suitable for wheat are the peat and muck formations on the deltas of the San Joaquin and Sacramento. With all other soils it is mostly a matter of preparation of soil, of seed selection, of moisture, drainage, and time of planting.

In 1918 88 acres of very thin red gravelly clay near Chico produced 514 sacks of Baart wheat. In the same year 60 acres of sedimentary adobe near Stockton produced 1320 sacks of wheat, and many thousand acres of black loam land in the Tulare Lake region produced as high as 25 sacks of Sonora wheat per acre. The Moreing Brothers on their Natomas properties in 1918 had a yield of nearly 1000 acres that produced 25 sacks of Early Baart per acre.

The 1919 harvest has shown some equally satisfactory results. Nearly every type of soil has produced its quota of wheat. Failures have been due to lack of rain, foul land, poor seed, late planting, hot winds, poor soil condition and drainage rather than to lack of fertility of the soil.

The old claim that California wheat lands have played out is a fallacy. This year many fields are yielding as much as they did 35 years ago. A large amount of California's original wheat land is now planted to orchards, vineyards, alfalfa and rice, but there are still available many thousands of acres of pasture land, sandy and clay loams, that will produce six to twelve sacks (13 to 26 bushels) of wheat per acre at a good profit to the grower.

A study of California soils shows many varying types with the loams predominating. We have loams, clay loams, sandy loams, fine sandy loams, gravelly loams, and heavy stony loams. We also have considerable adobe soil—including clay adobe and black adobe. The adobe soils, the loams, red clay loams, and some of the sandy loams are good yielders of wheat. The rolling lands from Merced to Chico along the Sierra Nevada are mostly clay loams of varying composition, and capable when not too stony or too steep, of being so farmed as to produce good wheat crops.

The clay adobe of the Montezuma hills, the black adobe lands around Stockton, above Sacramento, and in the Salinas Valley will produce and have produced large yields of wheat. The alluvial soils on the west side of the Sacramento River are well suited to wheat as are also the lands of the west side of the San Joaquin Valley.

Whether wheat is the most profitable crop to raise on these various soils is quite another problem. There are many factors influencing the decision that every farmer must make regarding his crops. Many figure that if they can get 20 sacks of barley per acre they are doing better than if they produced 10 sacks of wheat.

Land that is foul with black oats will produce more barley than wheat, but land that is not well drained, or on which the water stands for many hours, or in localities which have late frosts, is not as suitable for barley as for wheat.

The introduction of early maturing wheats such as Early Baart and Bunyip has made it possible to produce 10 to 24 sacks of wheat on land that previously yielded eight to 10 sacks of Bluestem wheat. Lack of rain during April has always decreased the yields of Bluestem and Club wheats in California—while Early Baart and Bunyip are far enough advanced in their growth not to be so affected.

The wheat farmer must know better how to prepare his soil. He must choose the kind of seed most suited to his soil and climatic conditions. He must plant good seed at the proper time. He must see that his land is properly drained—and finally, he must eliminate weeds, black oats, smut and other foreign substances that cut down his yields and affect the value of his crops.

Dangerous Plants

"It is rather alarming to realize that a number of the wild flowers of which we are all so fond contain deadly poisons," says an article in "On Nature's Trail" in the Boy Scout magazine, Boys' Life.

"The daffodil is an instance in point. Its long, narrow leaves contain a powerful irritant poison, and children should be warned most strongly against chewing them.

"The common foxglove contains a poison which has the most extraordinary effect upon the heart, whose action may be reduced to only 17 beats to the minute. Of any one thus poisoned, the pupils of the eyes are widely dilated, and his only chance of life is to lie absolutely still until the doctor comes.

"Everyone knows the wild arum or cuckoo-plant, with its big heart-shaped, glossy leaves. A most dangerous plant it is, too. If you chew a leaf your tongue swells enormously; so much so that you will be almost unable to swallow. Melted butter is the best remedy for poisoning by this plant.

"The most dangerous of all common hedgegrow plants is the aconite or monk's hood, which has palm-shaped leaves. A very small dose causes a strange tingling all over the body, and partial blindness. A little more and death is certain.

"These are all plants which are more or less attractive to the eye. There are others which seem to advertise themselves as dangerous. The hemlock, for instance. If you pinch a leaf it gives out a nasty, mousy odor. One need hardly state that it is very poisonous, being a powerful narcotic. The sufferer sinks into a drowsy state, which, if remedies are not at hand, ends in death.

"All the nightshades have a sinister appearance and should be avoided altogether. There are also many common shrubs of which tho leaves, if eaten, produce unpleasant results. Among these are the common privet, the elder, holly and laburnum.

"Plane-tree leaves will cause in some people an illness resembling a bad attack of hay fever, and this not through chewing, but merely handling them. The eyes become red and swollen, while nose and throat are sore and inflamed.

"Quite a number of plants are possessed of short hairs in their stems or leaves, which will cause a rash to break out upon sensitive skins. One such is the Primula obconica, which is one of the commonest pot plants in greenhouse or on window sills.

"Bulbs of the Roman hyacinth are covered with a sort of light scale, which comes off on the hands and sets up an unpleasant irritation which sometimes spreads up the arms.

"Many who work in coservatories or glass houses often find that hyacinths cause severe eye trouble. The idea is that the pollen is the irritaing cause."

CLAUSEN RETURNS FROM OVER SEAS

C. P. Clausen, entomologist and assistant superintendent of the state insectary prior to his enlistment, has returned to Sacramento. He saw active service with the 54th Artillery, U. S. A. Expeditionary Forces in France. Mr. Clausen expects to resume the same duties with the new department of agriculture in which he engaged under the commissioner of horticulture at the time of his enlistment. While in Paris, he visited the parasite laboratory in Rue Claude Bernard and spoke with Dr. Paul Marchal, with whom the state insectary is cooperating with regard to insect pest control.

Do not try to see how many flowers may be packed into a vase, but rather how few. Often one flower makes a more attractive a vase as a dozen.

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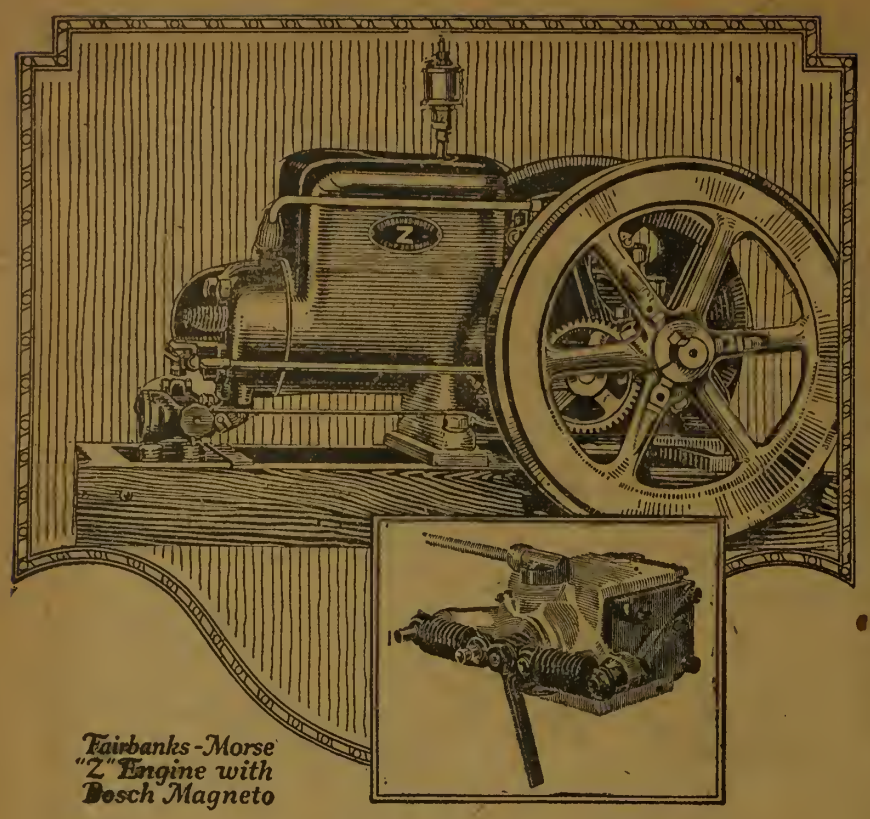

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This Month in the Vegetable Garden

Southern California

By D. F. Reichard

MANY have been disappointed with their gardens the past summer because they have not seemed to flourish as usual. Do these people realize that the rainfall last winter was only one-half of normal and that the ground did not have a thorough soaking during the whole season? The time is now at hand to put in the fall and winter garden. During September the greater part of California's winter vegetables are planted.

The handling of the soil is very important in getting the seed to start and establish itself. Flood or thoroughly soak the land to be used before working it up, pulverize the surface and let it lie for a week. As sections are to be used soak them and work again, thoroughly pulverizing so as to make a good seed bed. Sow the seed at once before there has been much opportunity for evaporation. Sow seed deeper than in the spring because the ground dries out faster at this time. It is a very good plan to furrow out, planting the seed on the ridges. Then after a few days irrigate by letting the water run slowly down the furrows. This method gets the moisture to the sprouting seed without wetting the ground over it. Cultivate the furrow as soon as the ground works up nicely.

It is getting late to plant any of the tender crops except in particularly favorcd spots, although I have planted sweet corn on September 9 and had green corn for Thanksgiving and Christmas in the eastern end of the San Fernando Valley. Canadian Wondcr beans would do as well if we had a mild fall. But this is taking chances. The safe things are the hardy root and heading crops. Carrots, beets, turnips, parsnips, kohl rabi and salsify all do well during the fall months, and if planted during September are ready for use from December on. Besides the root crops mentioned spinach and lettuce are grown very extensively for shipment to Eastern markets. Cauliflower and cabbage seed are sown this month for the main crop which comes off during February and March. Early onions are also put in this month by starting the seed in seed beds for transplanting later. The minor vegetables, mustard, parsley, radishes can all be put in for good results.

Do not plant pole beans, okra, squash, potatoes or other tender stuff; cold weather will come on before it can mature.

Keep all stuff in the garden well irrigated and cultivated for continuel growth and development.

Northern California

By A. R. Gould

ALTHOUGH we are nearing the end of the summer season there is no reason for relaxing efforts. Active preparations should be made with a view to having a few hardy vegetables for the winter months, and the ground should be made ready for these with as little delay as possible. Then we still have many crops to harvest and store away for the coming winter and it will be necessary to use every care in the selection of the root-crops for winter storage, as anything showing disease or being damaged in any way should be discarded, for they may cause the loss of half the crop stored. We gave particulars of method of storing last month, and those crops such as beans (Green Pod), tomatoes, turnips, carrots and many others may be preserved by the evaporation method now rapidly coming into use. Tomatoes may also be canned, small onions and cucumbers pickled in vinegar. Dry beans, all varieties, should be collected and stored in a dry place, which also applies to peas. Most of the squash and pumpkins will keep for many months if stored in a dry cellar.

Do not fail to keep a record of the crops harvested, also the location in the garden where grown. This is important if you would avoid planting the same crop in its former location again. As soon as the plots are cleared, deeply trench with manure to put them in shape for the next crop. The wise gardener always looks ahead, and whenever he looks behind it is at his past experience, and it is these careful observers who are successful. The great secret of success in the working of soil, and the most important operation, is trenching or moving it to a depth of two to three fect, and even more if conditions permit. This will assist drainage and aeration and will render it workable and fruitful. It is sound practice to bring the subsoil to the surface when trenching, to thoroughly mix this with the top soil. Lime may be applied with advantage to most soils, also soot and ashes. These should be forked in the surface after the trenching has been done.

Celery

Those plants put out early will be ready to blanch this month, and by this we mean that the stems may be made white and crisp by tying thick paper around them. Sometimes the soil is drawn up for this purpose. Any plants showing signs of attack by insects should be thoroughly dusted with arsenate of lead in dry form. Continue to water this crop with soot water or some good liquid manure.

Leeks

For blanching the same treatment as advised for celery will apply, and all forward plants should be so treated. Water with liquid manure at least once a week, as this crop is a very heavy feeder. The leek is practically the most hardy vegetable we have. It is unharmed by frost and will last all through the winter season. Unfortunately its value is little known and it is not nearly enough grown or appreciated.

Tomatoes

The season for picking is now at hand and they will ripen fast if some of the foliage is cut out where it is too rampant. Avoid overhead watering as there are still many flowers on the vines which should set fruit. Do not pick the fruits too green this month as they will ripen better on the vine than off, and be careful not to bruise the fruits. Remove any showing signs of tomato spot disease quickly and destroy these with a strong solution of sulphur or bury with quick lime. Any of the diseased fruits lying around will be a menace, and the spores when once in the ground will cause trouble in the future.

Beets

Sow for winter use Detroit dark red or Improved Blood Turnip. Have the ground prepared with well rotted manure and sow in rows 18 to 20 inches apart. Later thin out in the rows. It takes about two ounches of seed to sow a row 100 feet long. Roots of this crop now matured should be dug and stored.

Beans

Dry beans should be collected and kept in their respective varieties and may be used for seed as well as for cooking. A sowing of the Broad Windsor bean may be made now, also the Canadian Wonder, a well flavored green pod which is fairly hardy. Have the ground well cultivated before sowing.

Kale

Plants of these may be put out from sced bed, and those who have poultry should plant as large an area as possible as it makes the finest green food

for the winter as it is very hardy. It is also excellent as a table vegetable.

Brussels Sprouts

If these were not planted last month as advised plant them 18 to 20 inches apart in rows 24 inches apart. They delight in rich soil and require a fair amount of water. At the end of this month another sowing should be made to provide plants which will give a succession.

Lettuce

Sow White Paris Cos and New York or Los Angeles very thinly broadcast on a well prepared bed and afterward plant out in rows as desired.

Squash and Pumpkins

Many of these may now be harvested and stored in the cellar or a dry shed.

Cabbage

Make a sowing of Autumn King and American Savoy for winter use.

Carrots

Follow up your beans with carrots, Danver's Half Long or Early Shorthorn. Sow the seed thinly in rows 18 inches apart.

Potatoes

Complete the digging of this crop and store the tubers for future use in dry earth or sand. The later crop should be well culttivated and irrigated.

Strawberries

Prepare new beds for this profitable crop and have the ground well trenched and heavily manured. Many young plants will be available and should be removed from the parent plant to set out during the month. Plant in rows 20 inches apart.

Onions

Complete harvesting this month. The bulbs should be tied or roped together by the dried tops and may be hung up for future use in a dry shed. In this way they will last for months. Use every care that the bulbs do not get bruised.

This Month in the Ornamental Garden

Southern California

By A. Layman

SEPTEMBER is one of the best lawn making months of the year. Notwithstanding that, it is probable that the greater number of our lawns are made in the spring time. But if the site of the lawn has been kept thoroughly moistened during the past few weeks and the weeds hoed off as fast as they appear, the making of the lawn during the month of October gives the grass time to start and get thoroughly established before the mass of weeds which start in the spring time can crowd out the blue grass or white clover.

Spade deeply, irrigate, after a few days firm and settle the ground so as to secure perfectly even surface, rake off surface stones, even small pebbles. When seed bed is perfectly prepared seed with blue grass or with blue grass and a small quantity of white clover as preferred, at the rate of, say, one pound of blue grass to every 200 square feet of space. A pound of white clover will sow 300 square feet.

The raking in must be very lightly done or the seed will be buried beyond recovery. An exceedingly light mulch of thoroughly rotted manure is fine. We have seen lawns made which were mulched with dry dust-like scrapings from dairy corrals. This is good but calls for a vast amount of hand weeding because of the weed seeds carried in the manure. Give light sprinklings two or three times daily according to weather conditions. Weed as necessary, mow when high enough, trap the moles, and by Thanksgiving a beautiful lawn will be had.

If the old lawn has been neglected through the summer this is a good time to rake in new seed, plenty of fertilizer, raw bone meal or, rather, thoroughly pulverized bone "flour," which makes an exceptionally good dressing.

Divide the old iris; plant new. This is an ideal time for such work. It will soon be time for planting daffodils and other spring blooming bulbs. so that the ground may be well moistened and spaded in preparation for this beautiful flower. Gladiolus which are through blooming may be removed and the bulbs dried off for December and January planting. In case of highly desirable varieties use extreme care in saving the tiny corms which have formed around the old bulbs. Gladiolus "runs out" if one simply depends upon the old stock, and these little corms are the foundation for new and more vigorous bulbs.

Watsonias should be divided at once; they will give a glory of bloom next April and May. Amaryllis may be divided as soon as it finishes blooming.

Golden glow is blooming. Quick acting fertilizer and plenty of water make a perfect glory of this plant.

This is the period of the year when chrysanthemums demand greatest care. If large blossoms are desired, disbudding, fertilization, staking, and irrigation must all be attended to.

The sowing of annuals is always in order in California. Especially is this a desirable time to scatter freely the seed of our California state flower, the golden poppy. Let every waste space be filled with seed, and fall irrigation will give an early start to this wonderful flower.

Northern California

By A. R. Gould

AUTUMN tints that beautify the foliage of most deciduous climbing plants and trees will soon be the prevailing features in our gardens, and much of this can be used with good effect in vases or for decorations. Most of the summer flowering annuals are past and for fall use we now rely on our perennials; Michaelmas daisies, golden glow, erigeron, gerbera, etc., and just now the dahlias are the mainstay. Later on two useful annuals will be evidence; Tithonia speciosa, the Mexican orange zinnia-like flower, and cosmos in double and single form, and these by the way will need staking as both subjects grow tall and have slender branches which will readily break with the wind. A careful watch for that frequent visitor, the aphis, green, brown and black, should be kept and it should be met with a spray of Blackleaf 40, the nicotine solution. The diabrotica and four-lined bug should be hand picked from the dahlias and other blooms which they attack. Slugs will also find a hiding place in the clumps of delphiniums and other perennials. They should be destroyed where possible, and hand picking these is the most effective way we have discovered yet and we have hunted them for years. Where there is an abundance of water the lawns should not be neglected, and any bare spots should be re-sown after being well raked, and sand should be applied after the seed is sown. Any worn-out lawn can also be restored by the application of dried blood, sulphate of ammonia, or nitrate of soda, which should be applied mixed with sand or fine soil carefully.

Chysanthemums

These useful autumn flowers are now showing their buds very freely,

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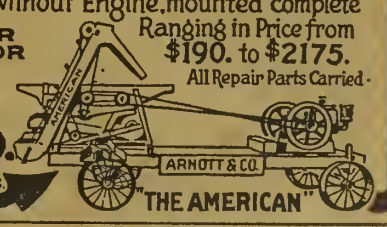

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and while we wish to have and must look for, small flowers in some varities such tho pom-poms or button types and many single forms, we aim to have large flowers in the curved and reflexed types, and on these we leave the best bud to provide our prize bloom. On some of the more bushy types we thin out a few buds, leaving three to five on one branch. This work of disbudding should be attended to, and all of the large flowered types should be given overhead protection by a covering of cheesecloth. The plants will also need feeding at least twice a week with liquid manure or soot water and any signs of green fly or aphis should be removed by spraying with nictotine.

Freesias

These are our earliest bulbs and the most fragrant. They multiply very rapidly once established. Bulbs may be secured and planted now in the open ground, while a few may be placed in fairly rich soil in pots for flowering in the house. These pots may be plunged in ashes or sand for the first few weeks to encourage root action. The best varieties are Improved Purity and Barr's Primrose.

Seed Collecting and Sowing

Many annuals such as marigolds, African and Freneh, calendulas, ageratum, cornflower, etc., will be past blooming and mueh seed can be eolleeted from these; also from sueh perennials as Oriental poppy, erigeron, hollyhock, columbine and gaillardia. Seeds of the perennials named may be sown at onee for spring plants; also ealendula which is very hardy. Other seeds to be sown now are pansy, forget-me-nots, alyssum, aubretia, arabis, gladiolus, wallflowers, English daisy and stocks for winter flowering.

Primulas

The primrose family is a very large one and includes many popular types, amongst which are primula veris and P. vulgaris, well known types, P. vulgaris coerulea, a rare blue form sported from the yellow, or English primrose, P. malacoides, a charming form of delicate pink and lavender shades, P. Kewensis, now being largely planted; a fine yellow verticillate type and effective for massed groups, P. Obconica in various shades, noted for its long period of flowering, and P. polyanthus, well known hardy flowers. All these are worthy of a place in your garden, and plants should be seeured as soon as possible. They will all thrive in semi-shade and should be planted in fairly rich soil. Sceds of most of the above may be seeured and sown at once if this method is desired, but your nurseryman ean usually supply strong plants for fall planting.

Sweet Peas

The winter flowering types as mentioned last month may still be sown as advised.

Flowering Shrubs and Roses

Go over these very carefully and prune out any dead wood. Seeds of the Spanish broom, acacia, etc., can be collected and sown. Any black scalo should be sprayed with kerosene and soap emulsion with nicotine added. Cut off any dead flowers and water to encourage new growth.

Bermuda Onions

By J. Paul Hatch

Among both growers and eonsumers of onions in Southern California Bermudas have beeome a favorite.

The extreme mildness of flavor, its adaptability to growth in our winter elimate, early maturity and heavy yield make a eombination of good points which wins their way everywhere. Bermuda onions, the pure white or crystal wax, and the white or yellow skin, are well known in Coaehella and Imperial Valleys, where many earloads are shipped out every year. The Bermuda onions are also becoming well known on the coast. The planting of seed in Coaehella and Imperial Valleys is usually done from the latter part of August up to the end of October for an early spring crop. On the seeond day of April, 1914, I saw Japanese loading out the first earload of new Bermuda onions from Brawley, for that year. And later years the new erop has begun moving in the month of March there. About seven years ago the growers used to figure the returns per aere for Bermuda onions, with a good market price holding out through the season, at over $400, while the price the past two years has been higher than usual. Bermuda onions will produce from 300 to 800 erates, or expressed otherwise, from 150 to 400 sacks of onions per aere. They do well for the large grower, small truck gardener or in the home garden.

The seed is usually planted with hand pushed drill seeders in rows 14 to 16 inches apart for single rows, or for the double row system, two rows six inches apart with 18 to 24 ineches space between. The plants when the size of a peneil should be thinned out, leaving three to four inches apart in row. When the onions reach maturity, the tops will begin to wither and fall. No need for tramping or other smashing down with risk of injury to bulbs.

Harvest by hand for a small patch or use horse and cuttor sled to eut under a few rows at a time, then gather up and trim tops and roots by hand and pack in crates or sacks for market. On land near the coast and in back country where average rainfall is about 15 inches, Bermuda onions ean be raised without irrigation if planted early enough.

Here in Escondido I planted one pound of yellow skin or white Bermuda onion seed on November 20, 1918, over a month later than I should have planted it, so as to got more benefit of the rainy season, and I planted this seed on just one-sixth of an aere of ground and sowed the seed a great deal thicker than necessary in order to use all of the seed on that particular piece.

On aecount of planting as late in the fall as I did, I irrigated just onee in the month of May and I figured that I had only a fair yield of 50 crates, but the price being good they sold well. During the month of April and May I sold $25 worth of green bunch onions, and during the month of June $105 worth of dry onions, or a total of $130 worth raised on one-sixth acre of land. I might add that now I am beginning to harvest a crop of turnips, lettuce and carrots raised on same piece ground since the onions were harvested.

WORK IN MY GARDEN

"This is a busy month, to be greatly enjoyed as a time for starting the growth of so many lovely flowers," says Fanny L. Ryan in California Garden.

"Winter blooming sweet peas should now be planted in well prepared soil, and if kept well fertilized and watered should bear flowers in ten weeks.

"Now is a good time for planting freesias, oxalis, Spanish iris, ranunculus, anemones, amaryllis, paper white narcissus, watsonias, Roman hyacinths, the various lilies, especially paryii and humboltii, both native, calochortus, babianas, callas and the pretty gladioli of the Colville type. It is a small-flowered type and of two varieties, white and rose-colored. These bulbous plants, if properly cared for, will make the garden glow from November to May.

"For annuals plant pansies, mignonette, stocks, scarlet flax, calliopsis, sweet alyssum, phlox drummondii calendulas, scabiosa, a perennial in this country; auriculus, also perennial of wonderful beauty; poppies and perennial larkspur.

"To start the seeds of all these successfully in our dry climate, a covering of sawdust an inch deep will save much time and labor. It is so light the little seedlings can prick through it and it will act as a mulch while they are growing, and prevent the soil from baking."

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and give full name and address. Unsigned communications receive no attention.

Fraudulent Seed

I wish to ask two questions which I think would be of interest to quite a number of your readers. One is this: When I buy Peruvian alfalfa seed at 42 cents per pound and it turns out to be the common alfalfa which I could have bought at the same time at half that price, what recourse have I? The second question is along the same line and is this: When I buy certified seed potatoes and get two or three different kinds, all mixed together, what can I do about it? I bought both the alfalfa and the potatoes from a local firm which got the seed from one of the big Los Angeles seed houses. It seems as if there should be some way to get back at these fellows.—Subscriber, Elsinore.

We believe that all nurserymen and seedsmen "give no warranty, expressed or implied, as to description, quality, productiveness or any other matter of any seeds, bulbs, plants or trees they send out, and they will not be responsibile in any way for the crop. If the purchaser does not accept the goods on these terms, they are at once to be returned." Hence we take it there is little chance for collection of any damages in such a case. There should be, however, opportunity for collecting the difference between price of seed bargained for and seed delivered, for no matter how many reservations a merchant may make in his guarantees there can be no cover for direct fraud.

An Unjust Husband

This department is in receipt of an extended letter from a subscriber, a woman who does the milking and at times the feeding and all work connected with a dairy of ten cows, even to separating, besides doing all of the housework and much other of even the heavier outside work. She chronicles the fact that "We came to California from Omaha ten years ago. At that time he gave me $1 to buy a hat, and in all of those years I have not had another. . . . In all that time I have not had a new coat or a dress that cost over $1." Other points are given in the letter showing that the wife and homemaker has not had as much consideration as has the live stock on the ranch, but the question of such treatment is entirely outside the jurisdiction of this paper other than to call attention to the fact that such a man is not worthy of the blessings of living in a free country.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Workmen's Compensation

I wish to have my house painted and hire a contractor who has men under him to perform the work. Do I need to insure the contractor under the state compensation fund? If he should be injured, would I be held responsible?—Subscriber, Burbank.

The term "employe" under the workmen's compensation act excludes any person whose employment is both casual and not in the course of the business of the employer. The term "casual" refers to employments where the contemplated work is to be completed in not exceeding ten working days, and the total cost of such work is less than $100. An independent contractor such as this man would be is very probably also excluded from the act, although it would seem that if he receives wages irrespective of profits, he might be deemed an employe, however, as your work would fall within the term of "casual" it would clearly be unnecessary for you to insure.

Filing On Spring

A owns property on which there is a spring. Between the land of C and A there is a piece of land owned by B. The spring has never been used by A. Can C file on the spring and obtain a right of way over the land of A and B?—Subscriber, San Jacinto.

If a right of way can be purchased from A and B there seems to be no objection to C filing on the spring, but he could not obtain such right of way except with the consent of A and B. If you should file on the spring it would be necessary for you to do so by petition to the state water commission.

Note from Husband to Wife

A man gives his second wife a note covering the value of the property which she possessed before marriage. Her property is then transferred in his name. If he dies intestate leaving two children by his first wife, can she collect on the note from the estate? Would it make any difference whether the note was dated prior to or after the marriage? Is there a limit to the time for which the note may be drawn?—Subscriber, Claremont.

The note being given for a valuable consideration, the wife could undoubtedly prove her claim against the estate at the time of the death of the husband. It would make no difference whether the note was given prior to or after the marriage, but it should be given contemporaneously with the date of transfer of the property. There is no limit of time for which the note may be drawn, in fact some railroad mortgage notes are drawn for as long as 99 years. The plan suggested is, however, very liable to lead to trouble both during the marriage and subsequent thereto. The wife would stand merely as any other creditor, and the note would be just as good as the estate which was left and no better.

FIGHTING WEEDS WITH FENCES AND SHEEP

"County Horticultural Commissioner Earle Mills made an interesting report to the board of supervisors of Butte County recently," says Weekly Newsletter of the state department of agriculture.

"The report was the result of a petition that had been filed with the supervisors by some 40 water users of the Sutter-Butte canal to the effect that the sides of the canal were infested with Johnson grass and that the ripening seed was carried onto the lands of the users.

"Mills stated that he had investigated the canal and found the condition of which the water users complained to be true. He further stated that he had interviewed the Sutter-Butte Canal Company officials and found them ready to proceed with a plan by which it is believed the Johnson grass menace will be entirely done away with in a short time.

"The plan is that the company will proceed to fence its entire system of 112 miles. A fence will be run on both sides of the canal system at the edge of the right-of-way, thus fencing in on both sides of the canal a narrow strip of land. Into this enclosure, the canal company will put sheep. From 500 to 700 head of sheep will probably be placed in the long narrow enclosure and will be alowed to feed off the banks of the canal. In this way the Johnson grass will not be permitted to go to seed as the sheep are close eaters."

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For the Orange Tortrix...

Mr. H. J. Ramsay, head of the field department of the California Fruit Growers Exchange and Mr. R. S. Woglum, entomologist of the U. S. department of agriculture recommend the use of Lime Sulphur plus Arsenate of Lead for the control of the Orange Tortrix or the smaller worm which resembles the Tortrix, both of which puncture the orange rind and cause the fruit to decay in transit.

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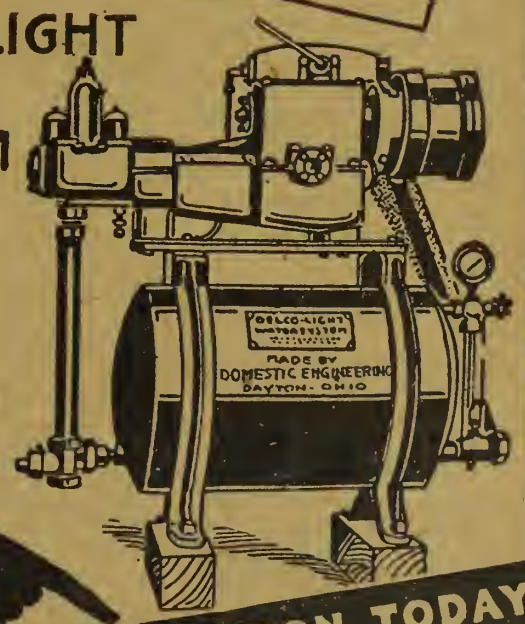

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50 Registered Holsteins 50

at Public Auction

Having leased their ranch, Ageo Bros. will sell at public auetion 50 registered Holstein cows, heifers, and bulls, at

Holtville, Imperial County, California

Wednesday, October 8, 1919

This is a well bred offering, and the females are practically all in calf to the richly bred bull Toyon Fayne Caldessa, who is by the 41 pound bull King Valdessa and out of a 30 pound 4 year old daughter of King Hengerveld Aaggie Fayne.

The offering of bulls is an excellent one, and should be particularly attractive to dairymen in Imperial and other southern counties, for it is not often that so desirable a lot is offered at auction so close to home.

Catalog in preparation. A copy free on request.

Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager,
Sacramento, Calif.
Auctioneers—Rhoades & Rhoades, Los Angeles.

Finderne Soldene Pontiac Valdessa

— The Bull with the Backing —

The Names of 10 World's Record Cows Appear in His Pedigree

FINDERNE HOLINGEN FAYNE—Butter in 365 days at 3 years old, 1395 pounds. World's three year old record.
FINDERNE NETHERLAND FAYNE—Butter in 365 days at 27 months old, 1200 pounds. World's record two year old.
(Will this record ever be excelled?)
LUTSCKE VALE CONUCOPIA—Milk in 365 days, 31,246 pounds. World's record when made.
SEGIS FAYNE JOHANNA—Butter in seven days 50.68 pounds. World's record when made.
FANCHER FARM MAXIE—Butter in seven days at four and one-half years old 46.84 pounds. World's record.
K. P. PONTIAC LASS—Butter in seven days, 44.18 pounds. World's record when made.
VALDESSA SCOTT 2D—Butter in seven days, 41.88 pounds. World's record when made.
FINDERNE SOLDENE HENGERVELD—Butter in seven days 35.34 pounds. World's record for heifer with first calf.
GRACE FAYNE 2D'S HOMESTEAD—Butter in seven days 35.55 pounds. World's record when made.
MABEL SEGIS KORNDYKE—Butter in seven days at four years old, 40.32 pounds. World's record.

We have his sons and daughters for sale, one to a carload; also some extra good young cows and promising heifers bred to him. 225 head to select from.

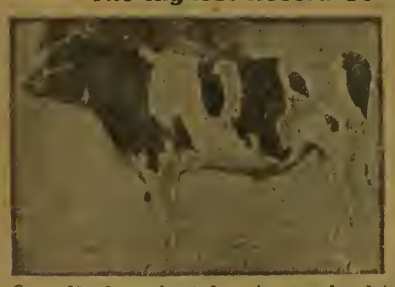
CAN YOU BEAT IT?

Geo. A Smith & Son

Corcoran, Cal.

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker



His dam: ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—	
Milk 338 days	18,849.40
Butter	866.28
At six years—	
Butter seven days	34.13
Milk	532.40
At five years—	
Butter seven days	28.85

She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.

Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho

Anoakia Breeding Farm
Santa Anita, California
Anita M. Baldwin, Owner W. H. Taylor, Supt.

WHERE TO BUY YOUR

herd bull. We can be of material assistance to you in solving this question.

Sir Veeman Korndyke Pontiac

Our senior herd sire is a son of Sir Veeman Hengerveld, the sire of more 30 pound cows than any living sire. Five other sires bred for production. A good sire will increase your milk production. We have increased ours 100 per cent the past two years. We can sell you a young bull at a very reasonable price.

BURR FARM, Los Angeles, Calif.

Breeders of Registered Holsteins
Farm at E. 26th St. and Downey Road
Business Address, 8th St. and Towne Ave.

Shorthorn Progress in California

By R. P. Royce

THE development of the cattle industry of this state has followed a rather unusual trend. In a section with a vast area adapted only to range operations, with natural conditions not paralelled in any other section that make it possible to have a twelve month growing year, considered from the earliest times as a leading cattle state, one might naturally expect that the industry would have been accorded every phase of management calculated to improve and make more profitable a business of such first importance. It is a lamentable fact, however, that only in the case of a few operators was any special effort directed toward improving the old methods handed down by the Spanish ranchers.

Perhaps the very fact that conditions were so near ideal as to make it possible to operate with a minimum of grief accounts for the backward development the industry must confess.

Here is the situation that has existed and still exists to a large extent. With a beef cattle population that runs into the hundreds of thousands (the estimated number at the present time is around 1,700,000 head) and a consequent need for hundreds of bulls annually, the state has never produced one-tenth the number required in pure bred bulls. Of course it is true that up to the present time by far the majority of the bulls used have been grades, but the fact remains that cattle outfits using pure bred bulls have been forced to secure them in other states.

The trend of the times indicates that from now forward there will be an increasing demand for pure bred bulls, and eventually it can be predicted that registered bulls will be in the majority. It has been estimated that with our present cattle population about 75,000 bulls are required, and of this number from one-half to one-third need to be replaced each year. There is therefore a tremendous market waiting to be supplied. It may seem strange in view of the above facts that the pure bred business has not developed faster. There is slight question that the logical development has been materially retarded by the coast markets. The markets have never been such as to put much of a premium on quality. Under the old time practices a steer was a steer, and while there is still much to be desired in the way of improved markets, advancing costs of production are causing cow men to look to the pure bred bull to cheapen their costs.

There is another factor that it seems would have stimulated pure bred herds in this state. In a way California occupies a sort of isolated position as regards the established centers of pure bred production. Situated at the extreme western edge of the country, the added cost of buying bulls in the Middle West and shipping here is so great as to lead to the assumption that every effort would have been made by the cattle interests to establish breeding centers nearer the base of their operations.

Strange as it may seem, one does not need to hark back many years to a time when the Shorthorn herds of California, herds that were real factors in the breed, could be named on one hand.

During the past few years, particularly during the past three years, there has been a marked growth of interest in all classes of live stock, and no breed has come in for more interest than the Shorthorn.

More new herds have been established during the past three years than during any other ten years, and among the new herds are a number that have been established upon a foundation such as to give the greatest confidence in the future of the breed. It is a safe assertion that the past 12 months have witnessed the most active extension of Shorthorn breeding ever known in this state, and it is equally conservative to state that the next year will see even a wider growth.

A few of the principal events that led to the above remarks may be recounted. A California bred and raised steer was champion Shorthorn steer at the 1918 International. The second annual spring sale held by the California Shorthorn Breeders' Association established a new sale record for the Pacific Coast, and in that sale a "home bred" bull sold for $5500, which is the highest price that a bull of any beef breed ever fetched on the Coast. That sale not only started many new breeders with Shorthorns but resulted in the establishment of at least one herd that is bound to have a large influence on the breed. Reference is made to Conaway Ranch herd of which C. Harold Hopkins is manager. The Conaway Ranch is one of the large properties of central California, consisting of 27,000 acres, and it is proposed to develop a thoroughly first class herd. The sale also indicated a keener appreciation for real worth than has been manifested before.

Following the association sale W. M. Carruthers of Live Oak sold 39 head for an average above $800, a new high record for the far West. Again, in this sale a number of men made their first purchases.

Quite recently Edward Cebrian of San Francisco, who has acquired one of the largest and what is generally admitted to be one of the choicest collections of Shorthorn females, has brought to this state two of the best bulls available. Mr. Cebrian has secured the three-year-old Caledonia, imported by Peter Ross, for awhile at the head of the Gillespie herd in Oklahoma, and until coming West, at Anoka Farms. The second bull is the outstanding son of Gainford Marquis. Gainford Matchless, first as a senior yearling at the last International. The addition of two bulls of such acknowledged worth is certain to have a marked effect on the industry in this state.

Since last spring Messrs. Easton & Ward, owners of the Blackhawk Ranch, Diablo, and who have long been identified with Shire horses, have purchased a foundation herd of high class Shorthors with the intention of building one of the top herds of the West.

A number of smaller herds have been started and a number of very substantial men are making plans to take up the breeding of Shorthorns.

While many new herds have been launched, the older herds have all been strengthened by the addition of high class breeding material. The Hillcrest herd of Thornton H. Gilde, which is one of the oldest herds in the West, has acquired an imported bull, and the San Julian herd owned by the Thos. Dibblee Estate has added a number of imported individuals.

At present the tendency appears to be, for obvious reasons, to found the new herds on Scotch families, but as yet there is no evidence that breeders will be carried away by pedigree fads. While the preference is being given Scotch breeding and values reflect this preference, Western breeders are intensely aware that their outlet will depend on the estimation of their cattle by the practical range man who primarily looks for beef, scale, constitution and bone regardless of whether the pedigree reads "straight Scotch" or is rated "plain." So while California breeders would prefer Rosewoods, Augusta Victorias and other popularly rated families, they insist that first of all "the papers" belong to an animal of merit.

Another encouraging feature in this state is the increasing interest the smaller ranchers are displaying in Shorthorns. Up to quite recently most of the pure bred herds have been owned by large operators and the man with small acreage has usually gone in for dairying. But the problem of labor for dairy farms is becoming so acute that many are thinking of turning to beef cattle as a way out.

Again, the idea long held, that beef cattle are not profitable on high priced irrigated land, land selling for $250 to $400 or $500 per acre, is fast giving way in the face of facts.

As a whole the Shorthorn business in California is on a highly satisfactory basis. The breed is in the hands of high class men and is attracting others of like calibre. The California

Shorthorn Breeders' Association which controls to a large extent the destiny of the breed, is making every effort to keep the business on the high level it is on now. This association is sponsoring every movement calculated to extend the business on a sound basis. Small herds are encouraged, and the association through its annual sales furnishes an outlet for the surplus bulls. There is a fine spirit throughout the business that is worth much. So far there has been no evidence of speculation.

In closing attention should be called to the constructive work directed by the college of agriculture to the entire pure bred live stock industry. Through the showing made by that institution at the International great impetus has been given all breeds.

This year for the first time there are to be three big live stock shows, the California State Fair, the Los Angeles Live Stock Show and the San Francisco International Live Stock Show. The influence of these shows will be wide and responsible for attracting many new men to the business.

The time is not far off when California Shorthorns will hold a prominent place in the affairs of the breed.

Live Stock News Notes

SALE CALENDAR

Ayrshire Cattle

September 16. Preston School of Industry, Sacramento.

Holstein Cattle

September 18. Henderson Company and Bonita Stock Farm, Stockton.
October 8. Agee Brothers, Brawley.

Shorthorns

October 16. Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

September 17. John M. Bernstein and W. L. Haag & Son, Hanford.
September 19. San Joaquin County Poland-China Breeders' Association, Lodi.
September 30. Dimmick Brothers and DeRaad, Hanford.
October 4. Marsh & McCracken, Modesto.
October 7, Bassett, Ross and Crawshaw, Hanford.
October 11. Kings County Poland-China Breeders' Consignment Sale, Hanford.
October 18. Trewhitt, Vaughan and Nehls, Hanford.
October 21. Tulare County Poland-China Breeders' Association, Tulare.

Alex Whaley, Tulare, has a herd of registered Holsteins from which high production may be rightfully expected. Among the younger things are a number of granddaughters of Segis Pontiac De Kol Burke and a daughter of Sir Veeman Korndyke Pontiac out of the 30 pound cow Melba Hengerveld. Mr. Whaley's 25 pound two year old, Eldorado Winifred, daughter of the 32 pound cow Winifred Hotaling 3d, looks promising for a large record later on. The head of the herd, Sir Aaggie De Kol Acme 2nd, has the distinction of having the highest average in the world, for a bull of service age, for butter produced both in one year and two years by five of his seven nearest dams. He is by the same sire as the bull that sold in the Philadelphia sale for $11,000.

W. J. Higdon, Tulare, now has a herd of registered Holsteins that ranks as one of the greatest in the West both for production and type. Ten records from 30 to over 34 pounds butter in seven days have been made by cows and heifers in the herd, while yearly records range to over 1000 pounds butter. The senior herd sire Prince Riverside Walker is by Prince Gelsche Walker and out of that great old cow Aaggie Acme of Riverside, who recently increased her record to 1053 pounds butter in one year, and who is the dam of the world's official yearly butter record cow Aaggie Acme of Riverside 2nd. The junior sire is King Korndyke Pontiac 20th, son of Miss Valley Mead De Kol Walker, the great daughter of Prince Gelsche Walker that has broken two world's records as a heifer. Both of these bulls are getting a very choice lot of calves, some of which stand in the very foremost positions in this state both as to breeding and individuality.

Walter F. Mitchell, Visalia, will soon be milking a bunch of registered Holsteins again, despite the fact that he sold off his milking cows last May. The splendid daughters of Prince Hiske Walker are growing up rapidly, and Mr. Mitchell's herd also contains some very choice heifers by other sires, among them some daughters of the famous bull It. The herd is now headed by the $5000 bull King Abbekerk Johanna Segis, whose dam is the 41.02 pound cow Adirondac Wietske Dairy Maid.

V. F. Dolcini of June Acres Stock Farm, Davis, has just added to his Holstein herd a bull and eight heifers. To head his herd of good young females Dolcini purchased the richly bred bull Sir Aaggie Korndyke Mead whose sire is Sir Aaggie De Kol Acme, the famous son of Aaggie Acme of Riverside 2nd, whose strictly official record of 1331.78 pounds butter in one year is a world's record. The dam of Dolcini's bull is Lady Mead Salambo who made 950.01 pounds butter from 22,097.8 pounds milk in one year, she a daughter of King Mead of Riverside and out of Pet Salambo of Riverside who made 1003.28 pounds butter from 22,287 pounds milk in one year and who has another daughter going at a 1000 pound gait this year. Five of the seven nearest dams of Sir Aaggie Korndyke Mead average 1096.28 pounds butter in one year, placing him well up among the best bred yearly record bulls of the breed, while five of his seven nearest dams also average 30.89 pounds butter in seven days. One of the strongest points in his pedigree is the fact that ten of his 14 nearest ancestors have produced daughters with records above 1000 pounds butter in one year. The females in the herd will be put on test regularly as they freshen, and by breeding them to such a high class bull Dolcini is preparing to reap the benefits of highly bred Holsteins much earlier than falls to the lot of the average breeder. Sir Aaggie Korndyke Mead is by the same sire as the bull that sold for $11,000 at Philadelphia in June and is also a three-quarter brother to the great young bull Sir Aaggie Mead recently purchased by Toyon Farm Association, Los Altos, for service in their top notch herd. The heifers trace twice to Pontiac Korndyke on the sire's side and to Juliana King of Riverside on the dam's side. Their grandsire is a three-quarter brother to Rag Apple Korndyke 8th who recently sold in the East for $60,000.

This blood combined with the Prince Gelsche Walker and King Korndyke Sadie Vale blood already in his herd ought to put Dolcini forward in the ranks of Holstein breeding.

A. D. Severe, a breeder of Poland-Chinas in Iowa, on his recent trip through the state, stated that The Yankee, Jr., was one of the best sons of the The Yankee that he had seen. In the sale of Williams Brothers, owners of The Yankee, held August 6 one of his sons, a September pig, sold for $1200, and two January pigs sold for $750 and $535.

In the sale of Monroe McCoy and Son August 1, the top of the sale was a son of The Yankee that went to R. A. Welch of Red Oak, Oklahoma, for $3500, and two sows in the sale, by The Yankee, sold for $405 and $450. John M. Bernstein secured a son of The Yankee, The Yankee, Jr., as a running mate for his well known boar President. He also secured 40 or 50 big type sows and gilts. The tops of these and some daughters of the President will be offered in the sale he and W. L. Haag and Son will hold, and will be bred to The Yankee, Jr.

As the blood of The Yankee is so much in demand Mr. Bernstein believes he is rendering the breed a service in introducing the blood into this state.

Henderson Company, Sacramento, has made very substantial progress during the past year, both in respect to its farm and its herd of registered Holsteins. The herd now numbers 333

Invest Your Money in Profitable Poland-Chinas

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Forty boars ready for service—20 bred sows and gilts.

Sired by California's leading big type boars, such as Major Hadley Wonder, Matchless Big Bob, Big Bone Bob, Golden State King and Big Ursus, Jr.

Farmers, here's your chance to select your boars for fall breeding. All animals have been carefully selected from the herds of the

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Just to Remind You...

MARSH AND McCRACKEN

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These two herds are devoted to the production of better Poland-Chinas. In them you will find the richest blood lines, best individuality, careful matings and intelligent development.

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AYRSHIRES

at Public Auction

STATE FAIR GROUNDS

SACRAMENTO, CALIF.

Tuesday, Sept. 16, 1919

Preston School of Industry, Ione, Calif., will disperse its entire herd of registered Ayrshires in this sale, affording buyers an opportunity to secure representatives of this good breed for the first time at public auction in California. The sale will contain approximately

60 Registered Cows, Heifers and Bulls

The foundation females in this herd came from some of the best known herds in the United States and Canada, and they have been mated regularly with high class bulls.

The cows are mostly all young, regular breeders, and the entire offering is in good physical condition. Every animal is guaranteed to be a breeder and is tuberculin tested.

Whether your need is for registered Ayrshire cows, bred or open heifers, or a good bull, you should find something to suit in this offering.

Catalog free on request.

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California Breeders Sales and Pedigree Company

C. L. HUGHES, Sales Manager, Sacramento, Calif.

COL. BEN A. RHOADES, Auctioneer, Los Angeles.

Ord L. Leachman
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head and includes an extra choice lot of young things out of highly bred cows and by their great herd sires King of the Black and Whites, King Pontiac Segis Inka, and King Lillian Walker Segis. To feed this large herd additional acreage on the ranch has been seeded to alfalfa, and the crop this year will run up around 1200 tons, sufficient to take care of the hay problem for the herd. A good crop of corn will go into the big silos on the place, and this in connection with the crops of barley and oats will make up a very large part of the ration necessary to successfully handle the herd. Official testing is just now about to begin for the season and Superintendent George Wendt has many very promising candidates under his care.

Bonita Stock Farm, Lodi, the property of J. M. Henderson, Sacramento, is one of the high class breeding farms of the state. It is an excellent property, considered as farm land, and is well improved with barns and other buildings. The herd of registered Holsteins on the place now numbers 160 head, and the young cows in the herd justly rank among the choice ones of the West in both type and production. The herd is headed by the richly bred bull Supreme Glista Pietje, who is also an individual of marked excellence. Manager Verne Heath will continue the program of official testing in the herd, and the herd promises to be a source of news when the season's official testing begins soon.

Marsh and McCracken, who hold a joint sale of Poland-Chinas in Modesto, October 4 state that if breeding and individuality are the accepted standards they have no fear as to the outcome of their sale. With the blood of King's Big Bone Leader, grand champion of 1918, and an accepted leader as a sire of big type Poland-Chinas, together with Major Hadley Wonder, grand champion in 1917 and the sire of champions, predominating in this sale, there is no reason why this sale should not prove attractive to the breeders on the Pacific Coast. Fifty bred sows and gilts will be sold.

The San Joaquin Poland-China Breeders' Association which will hold its first sale in Lodi September 19 believes it is offering the farmers a real opportunity as well as a great saving of time by selling at this time a number of good boars just coming to proper age for service. Heretofore it has been necessary when buyers wanted a young boar to visit the herds of the various breeders to make their selections. The association has selected these boars for the convenience of these buyers as they can come to one place and secure just what they want. In addition to the boars to be sold a number of good sows and gilts bred to the good boars in the herds of the members will be offered.

A special attraction in the sale of Dimmick Bros. and C. G. DeRaad, which will be held in Hanford September 30, is a high class daughter of The Yankee which was purchased from Williams Bros., Villisca, Iowa, last winter. This sow farrowed nine pigs by King Giant, four of which will be in this sale, the others having already been sold. Dimmick Bros. state that this sow has wonderful individual merit and being by The Yankee should prove especially attractive to breeders desirous of adding this blood to their herds. This sale will be a complete dispersal of the entire herds of C. G. DeRaad and Dimmick Bros. and offers a great opportunity for those interested in Poland-China swine.

In the coming banner sale of bred Poland-China sows and gilts to be held in Hanford by John M. Bernstein and W. L. Haag and Son September 17 the two boars to which they will be bred are creating quite a stir in swine circles due to the prominence of their sires. In the herd of John Bernstein is The Yankee Jr. a son of Williams Bros.' boar, The Yankee, whose get have been so much in demand of late, a senior pig selling last month for $3500 and several spring pigs selling all the way from $500 to $1200. In the Haag herd is found a son of Liberty Bond. In a recent sale, sows bred to this boar made the average of $650. Practically all the animals in this sale will be bred to these two boars and as the sows carry the blood of some of the most popular sires, this sale offers unusual opportunities for the introduction of this new blood.

H. S. KING HERD TO BE SOLD

Southern California dairymen will be very much surprised to learn that H. S. King of Long Beach is disposing of his entire herd on September 12. This herd was founded about 16 years ago, and up to the present time nothing but the best of pure bred sires have been used. The dams of the present herd are principally daughters of two royally bred sires obtained by the Bixby Land Company from the famous A. W. Morris & Sons herd of world record yearly production cows at Woodland. When these cows were sold at auction on April 15 this year they made one of the highest sale averages ever made in California, proving conclusively that using the best that could be purchased in pure bred sires was appreciated by the intelligent dairyman.

The present herd is practically 31-32nds pure bred, being sired by pure bred sires and out of the above mentioned cows. Undoubtedly this is the best herd of young grade Holsteins ever offered at public sale on the Coast, and the only reason that it is being sold is the fact that the portion of the Bixby Ranch on which the dairy farm is located is being subdivided. The sale will be conducted by Col. Ben A. Rhoades and Harold B. Rhoades of the firm of Rhoades & Rhoades.

SOUTHERN CALIFORNIA DAIRYMEN'S DAY

Farm bureaus of Southern California, under the leadership of Robert W. Hodgson of Los Angeles County, are planning for the observation of Dairymen's Day in connection with the Los Angeles Live Stock Show. One day during the show has been set aside, that of Thursday, October 23, as Farm Bureau Dairymen's Day. Adviser Hodgson writes:

"There will be a morning program in the auditorium of the state exposition building, and in the afternooon Mr. Scribner will conduct a dairy cow judging demonstration on the show grounds. Our program for the morning session has not been definitely arranged as yet but it is expected that we will have B. H. Rawl, chief of the dairy division at Washington, for one of the speakers. We are assured of S. H. Greene of the state dairy council as another and expect G. M. Brown of the Burr Creamery to speak for our cow testing members. G. E. Gordon, assistant farm adviser, will speak on feeding rations of dairy cows. We have been assured of the cooperation of practically all dairymen's organizations in this part of the state and expect to have one of the largest gatherings of dairymen ever held in this part of the state."

SPECIAL TO NATIONAL DAIRY SHOW

President H. E. Van Norman of the National Dairy Show is anxious that a large number of Californians shall make up a special car for this great exhibit of dairy appliances and dairy products to be held in Chicago in October. Arrangements have been made to attach this car to the Overland Limited leaving Oakland Pier Thursday morning, October 2. Sam H. Greene, secretary and manager of the California Dairy Council, is working with President Van Norman in this effort to secure a great representation of Pacific Coast dairymen. Mr. Greene writes:

"This year the federal government has joined with the management to make it the biggest and most instructive show that has yet been held. Doubtless a larger number than ever before will go to Chicago for the week October 6-12. Heretofore they have gone by ones and twos on different days and different trains, to be lost as Californians in the great crowds that attend the show. Now the vice director of our college of agriculture and dean of the university farm school is the president of the National Dairy Show. Californians ought to have pride in that fact and do something to show it.

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Registered Shorthorns
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100,000 FEET OF NEW AND SECOND-HAND PIPE AND CASING
PIPE—Practically all sizes from ⅛ to 15 inches.
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RIVETED PIPE — 4 to 12 inches, as good as new. We also carry valves and fittings.
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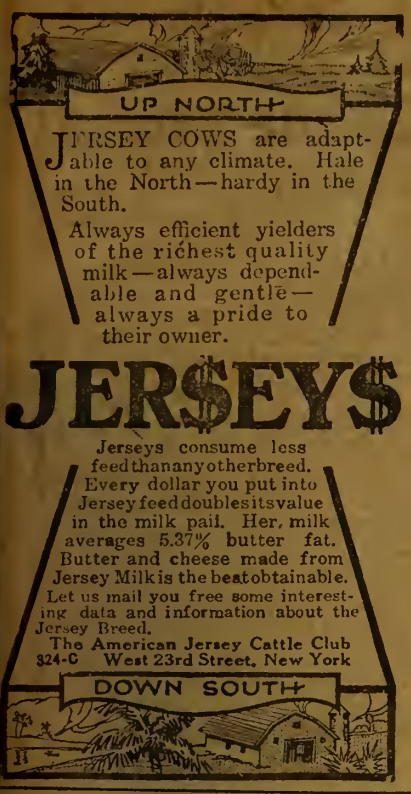
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Jerseys consume less feed than any other breed. Every dollar you put into Jersey feed doubles its value in the milk pail. Her, milk averages 5.37% butter fat. Butter and cheese made from Jersey Milk is the best obtainable. Let us mail you free some interesting data and information about the Jersey Breed.
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JERSEYS

Jersey Bull
For Sale
A fine straight one, bred right, priced right
S. F. Williams
Chico, Cal.
Member Orland Jersey Cattle Club

Venadera Herd
Offering four daughters of the great bull Altama Interest, 7 to 10 months old. All from Register of Merit dams.
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All My Records
Are made under ordinary dairy conditions
The Farmers Cow is
The Jersey
Young Bulls For Sale
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Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
Modesto Cal.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

10 Jersey Bulls
We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.
Arden Dairy, Certified
El Monte, Cal.

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

HEREFORD BUSINESS BOOMING

John A. Bunting, secretary of the Pacific Coast Hereford Breeders' Association, says that the interest in Herefords is showing a marked increase and predicts that during the next year many new herds will be established. "Since the 1918 state fair there has been a number of new herds established and all the older herds have been greatly strengthened," Mr. Bunting stated, and added. "The demand for breeding stock is developing so fast that breeders are finding it difficult to keep their herds intact. During the past year a good many California Herefords have been taken by buyers from the Hawaiian Islands, and apparently the only reason more did not find their way to new homes in the Pacific Islands was due to the fact that they simply could not be obtained. Buyers who were here in the spring and went home short are back again and making substantial purchases. During the past two weeks a buyer from one of the Hawaiian Islands visited breeders in this state and selected the largest shipment yet made, and included in the lot was a yearling Bonnie Brae bull from the herd of W. J. Bemmerly, Woodland, that represents the highest price ever paid for a California raised Hereford at either public or private sale.

"Since the first of the year a number of very high class bulls have been added to herds owned by members of this association. The Caziers in Nevada selected the sensational young bull Beau Bianchard 76th from the Engle herd in Missouri at the highest price ever paid for a Hereford bull in either Nevada or California. The price paid was $10,000. The bringing of such a bull to this Western country is certain to have a far reaching effect on the business. Another notable addition to the Pacific Coast Herefords was the purchase by H. H. Gable of Esparto of the crack bull Don Perfect 4th, a son of the International champion, Point Comfort 14th.

"That this section is attracting considerable attention from breeders in other sections is indicated by the recent transfer of the good herd owned by William Briggs of Texas to a ranch he has just purchased near Dixon.

"The local demand for Hereford bulls is far in excess of the supply and it will require many more herds before the demand can be handled. There is no reason why this state should not be producing all the bulls needed for range work as it is certain that California cattlemen would much prefer to buy their bulls at home. With such a keen demand at home and our established trade with the Islands taking all we can spare it looks as though the breeding of Herefords presents about the most attractive business proposition to be found in this state.

"The Pacific Coast Hereford Breeders' Association is lending every encouragement to new men entering the business, and through our association sales we offer means of selling that are proving highly satisfactory."

GLENN COUNTY BREEDERS PLAN BIG SALE CIRCUIT

If plans now being considered by Glenn County breeders materialize the second week of August, 1920 will see staged one of the biggest live stock events ever held in the West. The plan contemplates holding a circuit of pure bred auction sales in which all breeds represented in the county will be sold. Glenn County claims the honor of having more pure bred Berkshires and Duroc-Jerseys, more individual owners of registered Shorthorns than any Western county. Glenn County is also noted as a Jersey center. It is thought that at least enough sales can be arranged to occupy a full week.

W. C. Swett reports the sale of 47 four months old registered Duroc pigs to Mrs. Ross E. Whitley of Van Nuys, Los Angeles County; also 17 head of bred registered Duroc sows. The pigs are by Grand Golden Model, Model Defender 1st, and J. T. Cherry King Orion.

Worth Investigating

Our recent purchases of some of the best bred Duroc-Jerseys from the leading eastern herds enable us to offer animals of true Duroc type, quality and breeding. When you think of Duroc-Jerseys, think of

The Key Herd of the Pacific Coast

Just now we have a few sows and gilts, bred to an outstanding boar that will afford you a profitable investment at the price we are asking. Young pigs of both sexes. A few service boars. We will be pleased to send you full particulars,

H. P. Slocum and Son
Willows, California

WHAT DO YOU WANT?

We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.

George Junior Republic Chino, Calif.
also Breeders of Holsteins

Duroc Jerseys In San Diego County
GREAT MODEL---The Most Popular Sire in the West
Winsor Ranch, Bonita, Calif. Address R. K. Walker

As Evidence

that we are breeding popular Duroc-Jerseys, we made the highest average in the July sale of the Tulare County Duroc-Jersey Breeders' Association. We topped the sale at $300.
Herd Boars: Lord's Orion Cherry King and Joe's Orion Cherry King 5th.
Joe N. Chinowth Visalia, Calif.

M. BASSETT, Hanford Calif.
Breeder Big Type
Poland-Chinas
A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

Matchless Big Bob

is matchless in more ways than one. Big Boned, High Backed, plenty of length and imparts these high qualities to his get. Mated with our Big Type sows his get are now in demand by breeders and pork producers. Write us for particulars.
Watch for his get in Poland-China Sale at Lodi, Sept. 19th
LAKESIDE FARM
Geo. V. Beckman & Sons, Owners
LODI, CALIF.

Blue Valley Model
Our junior herd boar comes from a long line of strictly big type breeding. Individually he is all we could ask. We sell big type Poland-Chinas that give satisfaction. Write
Poland China Ranch H. B. Peake, Mgr.
San Bernardino, Calif.

FUTURE HERD SIRES
A better lot of young boars, future herd leaders, cannot be found. Sired by Golden State King and Big Bone Bob. Breeders who have seen my young Poland-China boars are unanimous in pronouncing them excellent prospects. They are high backed, big boned and have plenty of stretch. Write me for description.
J. F. Lehman Lodi, Calif.

Big Type Poland-Chinas

that are strictly big type. Big type sires—big type dams produce for me real big type animals. Usually sold down close but frequently have an exceptionally good one for sale. It will pay to keep in touch with me.
Eugene Miner Lodi, Calif

The Pacific Herd of Big Type Polands.
Herd sire, King Hadley and A Wonder blood lines.
A few classy 5 months' old boars for sale.
Satisfaction or money refunded. Prices reasonable.
Mrs. C. H. Andrews
Route 1, Box 46. Modesto, Calif.

Suppose—

A wrench, a hammer, a rock, an iron bar or a spade accidentally gets into your silage cutter! What then? Something must give way!

The ACME Cutter

is a safe machine to operate. The positive break pin safety device and the quick acting reverse lever insure safety. The Acme simply CANNOT "BLOW UP."

If a hammer, rock or any other hard substance gets into the feed rollers, Zing! go the safety break pins. The pulley and fly wheel run free and every part of the cutting mechanism stops before any damage is done.

STEEL FRAME CONSTRUCTION

The Acme is the only cylinder cutter with all-steel frame construction. You will find it the sturdiest, strongest built, most durable and dependable ensilage cutter you can buy.

Our Free Catalog Describes All Sizes

DE LAVAL DAIRY SUPPLY CO.

61 Beale St., San Francisco

Would You Spend $1.00 to make $3.00?

Dimmick Bros.' and C. G. DeRaad's Big Dispersal Sale of Poland-Chinas

TUESDAY, SEPT. 30, 1919

at Hanford, Calif.

Invest in a bred sow and she will make you $3.00 for every dollar invested.

SPECIAL ATTRACTION

A daughter of that famous boar, The Yankee, and four of the litter will sell. Make up your mind now to buy this sow or one of her pigs.

Every one interested in Poland-Chinas will find in this sale something that will satisfy both as to quality and price.

EVERYTHING SELLS

Bred Sows, Bred and Open Gilts, Spring Pigs and Herd Boars

Sale at 10:30 a.m. Lunch at Noon

GEO. W. BELL, Tulare; Auctioneer

When writing advertisers, mention The Cultivator.

Of Interest to Sheepmen

The following discussion of classes and grades of western wool by the field animal husbandman of the Idaho agricultural extension service is of interest to wool growers. These points will be discussed with sheepmen by members of the live stock squad, a party of live stock experts and students being sent over the state by the agricultural extension service of the University of Arizona, for a series of meetings and demonstrations with sheep and other live stock men.

"Generally speaking, there are two classes of wool, staple and clothing. To these a third, or braid, is sometimes added.

"The classification into staple and clothing is on the basis of length. Staple goods are two and one-half inches or more in length. Clothing wools are shorter. Braid is a term given to long wools such as Lincolns and Cotswolds. Sometimes this is called luster wool. Staple wool is sometimes called clothing wool.

"The grades of wool are made on the basis of fineness. Usually the finer the wool the better the price per scoured pound. However, because of the low shrinking qualities, the coarser wools may sometimes sell for a higher price in the grease than the finer. The grades that apply to this country are fine, half blood, three-eighths blood, one-fourth blood, and braid.

"Wool of the different grades comes from the folowing: Fine and fine medium, Merino and Rambouiliet; half blood, crossbreds; three-eighths blood, Shropshire, Hampshire, Corriedales, crossbred; quarter blood, Shropshires, Hampshire, Oxford and crossbreds. (Sometimes low quarter blood from the long wools); braid, Lincoln and Cotswold.

"Because the grades shade into each other this list is not entirely complete. For instance, there are fine medium, high three-eighths, low three-eighths high one-quarter, etc.

"Many of the published prices are on the scoured prices while we deal here only with the wool in the grease. The local price will depend upon several factors, the chief of which is the amount of yolk (grease), suint (perspiration) and dirt.

"One other point must be considered in determining the value of wool clips. Some of the wool is poorly grown, from inferior and poorly bred sheep, or from sheep that have received poor care. Again it may have been well grown but allowed to become full of chaff, sand or burrs, or been poorly sacked with the tags and sweepings mixed through the sack and the fleece of black sheep, bucks and ewes of different breeds all mixed. It may have been tied with binder twine. Perhaps it is wet or the sacks have been allowed to lie on damp ground. If so and the wool is sold on its merits or consigned the grower can expect a reduction in proportion to the damage done."

Cattle Confidentials

Ben J. McKinney, practical cattleman of Tucson gives the students who are taking the course in range live stock production at the University of Arizona some worth while advice. Among other things Mr. McKinney says:

"I erect chutes and vaccinate the calves. I was one of the first men to vaccinate in Willcox County. Its efficacy was soon proved and in 1916, I purchased 5000 pills, which was 95 per cent of the pills used north of the railroad track where are found as fine range cattle as are raised in Arizona.

"Plenty of salt should be out at all times. Salt is one of the best cowboys I ever employed. It keeps the cattle at home and together, making them gentle and fewer bulls are required.

"The proper handling of cattle will increase the calf crop. By this I mean handling cattle as quietly as possible, bringing them quietly together to brand, to vaccinate, to wean the calves or to gather the steers. They should not be run and roped and unnecessarily excited. In Sulphur Springs Valley, up to within a few years ago, to have the respect of the balance of the boys, a cowboy had to be able to tournament a cow. By this was meant to run up by the cow's side, turn the rope over her back and get both front feet. Then turn your horse off to one side, upsetting the cow so she usually struck on her back. One would run or lope about 10 or 15 miles, making the outside circle about 20 to 30 miles, tournament several cows on the way back, rounding-up from 1000 to 6000 head of cattle. Saddle horses were then changed and the cows and calves were cut out. Next men were sent in to cut the strays, then the calves were branded, averaging about 400 a day. One day we branded 875. That day has passed. More calves would be branded on one of those round-ups than there are cattle in that country today.

"The Wild West day is over. The large ranges are gone. This year quite a number of stock, including yearling steers, were bought on the range by weight, and this method is growing in popularity. The cost of raising cattle is mounting higher and higher. Hence, to be profitable, cattle must have constant and intelligent care. The day of the scrub cow is passing. The demand is for a high standard and we must furnish the supply. It is not a question of will we raise good cattle, we must raise good cattle."

Carruthers Sale of Berkshires

The sale of Berkshires held by W. M. Carruthers Saturday, August 23, on the farm near Live Oak, was well attended and was conspicuous by the attendance and support given it by the breeders of the state. While the sale was principally of young boars and gilts that will be old enough to breed this fall for spring litters, a number of carefully selected sows and two bred boars were included in the offering. The principal attraction centered around the 1918 reserve grand champion boar, Live Oak Champion.

He went to the herd of R. J. Merrill and Son, Morgan Hill, for $425, the price being hardly in keeping with his breeding and individuality. The top sow, Live Oak Belle, was purchased by H. C. Muddox and Son, Sacramento for $285. Other sows in the sale sold as follows:

3—R. J. Merrill & Son, Morgan Hill, $145.

4—H. C. Maddox & Son, Sacramento, $285.

5—Geo. P. Robinson, Sacramento, $155.

6—C. N. Esender, Los Angeles, $110.

8—C. N. Esender, Los Angeles, $1[illegible]

12—Gilt A. B. Humphrey, Escalon $130.

1—Boar, R. J. Merrill & Son Morgan Hill, $425.

2—Boar, Geo. Kounias, Mod[illegible] $155.

Average $188.81.

The young boars and gilts sold [illegible] from $30 to $90, making in every way a very satisfactory sale. Ord L. Leachman, Sacramento, was the auctioneer.

HORSE MEAT FOR HUMAN FOOD

To open up the channels of trade for some of the inferior horses in this country that do not pay for their keep and to increase the meat supply in some of the largest cities in the United States and abroad where horse meat is used for human food, the United States department of agriculture is authorized by congress to inspect horse meat and horse meat products. The amendment to the regulations governing meat inspected by the department was passed by congress on July 24 with an appropriation of

$100,000 to carry on the work during the fiscal year ending June 30, 1920

While it is expected that as a result of this amendment inferior horses throughout the country will be slaughtered for human food, it will open a market especially for the small horses (many of them wild) on the western range. These animals are eating much of the limited supply of range feed which is needed by live stock that is better able to pay for its keep. Elimination of the undesirable horses not only will save feed for more worthy cattle and sheep but will add hides to the leather supply and increase meat stocks.

Every establishment in which horses are slaughtered for the preparation of food products for transportation or sale in interstate or foreign commerce must be federally inspected under the new regulations. All horse meat for export trade must be inspected. The slaughter of horses and the preparation and handling of horse meat must be conducted in establishments separated from those in which other animals are killed and handled. All horse meat or horse meat products must be conspicuously labeled or branded: "horse meat" or "horse meat product," and must bear the statement "U. S. Inspected and Passed by the U. S. Department of Agriculture." The regulations list a number of horse diseases which, if found in any animal slaughtered will cause it to be condemned as food.

CONTRA COSTA COW TESTING

The Contra Costa Cow Testing Association reports for the month of August 20 cows giving over 1200 pounds milk; 11 cows over 50 pounds fat. The best record was made by a pure-bred Holstein owned by Bock Brothers. She gave 2520 pounds milk and 78.12 pounds fat. E. H. Fox of Oakley owned seven of the 20 cows giving over 1200 pounds milk and four of those giving over 50 pounds fat. M. W. Hotchkiss of Knightson had five cows giving over 1200 pounds milk and three cows giving over 50 pounds fat. Durrough Bros. of Oakley had four cows giving over 1200 pounds milk and two cows giving over 50 pounds fat.

A FARMERS' FAIR

As the date for the Southern California Fair at Riverside, October 7 to 11, draws nearer it becomes more evident that the largest fair in the history of that organization wil be held. The premium list, published and circulated this year is more comprehensive than any former one, with new departments and new classes.

The live stock division of this fair promises a very marked increase in each department. The pen space in both the cattle and the swine departments is being considerably more than doubled, and more is asked for. The dairy breeds will be especially well represented, responding to the large increase in pure bred dairy stock in Southern California. The swine department is stepping far ahead of any previous record and will show full classes in the leading breeds.

The goat show promises to be the largest ever held in the United States. The building, just completed, provides room for 300 animals. The apiary men claim they will make the greatest honey and general apiary display at Riverside this fall ever gathered together for show purposes.

The poultry show has always been a leading feature of the Southern California Fair and this year's display will in many particulars exceed any previous show. Rabbits have been given a special department and will have many times the entries ever before shown in this fair.

Every year there has been some great racing and Riverside has the reputation of having the fastest track in this part of the state. This year a very attractive race program has been arranged and some good racing is promised.

Another new feature for this fair is the auction sale of pure bred stock which will be held Friday and Saturday, October 10 and 11. Col. W. C. Lookingbill will be manager of this sale. A large entry list of fine stock is assured from the number that has already come in, and a great sale will undoubtedly take place.

A wool pool under which sheep raisers would cooperate at shearing time was proposed by John H. Guill, Jr., of Chico, at a meeting of the Butte County farm bureau held in Oroville. A great amount of expense would be saved and added profit accrue to the raiser, he said.

Combination Sale

65 Registered Holstein Cows Heifers and Bulls

Consigned by

Henderson Company, Sacramento, Cal.

Bonita Stock Farm, Lodi, Cal.

Stockon, California

Thursday, September, 18, 1919

The offering will contain a richly bred lot of females, many with A. R. O. records and out of A. R. O. dams, and, with the exception of a very few unbred heifers, every female is either fresh or well along with calf.

These good cows and heifers are bred to King of the Black and Whites, who has more A. R. O. daughters than any other bull on the Pacific Coast; King Pontiac Segis Inka, son of King of the Pontiacs; King Lillian Walker Segis, son of King of the Black and Whites; Supreme Glista Pietje, a 32-lb. sire, and others of sound breeding.

BULLS IN THE SALE

The offering will include a number of richly bred young bulls, some ready for service, presenting one of the most desirable selections of the season for the breeder or dairyman wanting a herd bull.

Every animal guaranteed to be a breeder

No animal in sale tuberculin tested

Sale will be held at DARBY'S BARN, corner East Jefferson and Pilgrim Streets, Stockton, California, where cattle will be on exhibition two days prior to sale. Some and see them before sale.

Catalog free on request to management.

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Cal.
Auctioneers: COL. BEN A. RHOADES, Los Angeles.
COL. GEO. W. BELL, Tulare.

Breeders Are Offered a Wonderful Opportunity in the W. L. Haag & Son and John M. Bernstein Banner Sale of Big Type Poland Chinas

TO BE HELD IN

...HANFORD, CALIF., WEDNESDAY, SEPTEMBER 17, 1919...

THE YANKEE, JR.
Son of the World's Famous Boar, The Yankee

These two boars, mated with the sensational lot of big type sows and gilts, affords the purchaser the opportunity of not only adding to his herd the most popular Poland-China blood of the present time but from the litter he can select and develop his own herd boar whose breeding will command the respect of the entire Poland-China fraternity.

LENDORRIS LIBERTY BOND
Son of Glover's Marvel Liberty Bond

Where, and at your own price, can you buy as high class Poland-Chinas as are offered in this sale? They have been selected from the herds of such well known breeders as John Bernstein, W. L. Haag and Son, Wm. Bernstein, E. D. Frazier, Thos. M. Hunter and Sons, J. A. Gerlaugh, and sired by such boars as Frazier's Timm 2nd, President, Giant Jones, Young Jumbo, K's Big Price 2nd, Miller's Long Chief and King's Big Bone Leader.

Can anyone doubt but what this offering will attract a flood of discriminating buyers who realize this is their real opportunity for securing animals of such rare breeding and individuality, such, that never before have been offered at public sale in California.

Why Buy Unsalable Blood? Buy what is demanded. Don't let it be a matter of cost or price—Get what you want—What you need—Get it at this sale.

Messrs. Haag and Bernstein extend a cordial invitation to every lover of good swine to attend this sale and be their guests.

Lunch will be served at 11:30 A. M. Sale will start promptly at 12:30 P. M.

H. M. BERNSTEIN, Hanford, Auctioneer

Everything in sale double immunized. Write for catalogue to either

W. L. HAAG & SON, or JOHN M. BERNSTEIN, Hanford

On Wednesday, Sept. 17th, all roads will lead to Hanford, Calif.

PLAY the smokegame with Prince Albert if you're hunting for tobacco that will cheer your smoke-appetite! For, with Prince Albert, you've got a new idea on the pipe question that frees you from stung tongue and dry throat worries! Made by our exclusive patented process, Prince Albert is free from bite and parch and hands you about the biggest lot of smokefun that ever was!

Prince Albert is a pippin of a pipe tobacco; rolled into a cigarette it beats the band! And, what you're going to find out pretty quick thousands of men discovered as long as ten years ago when P. A. started a smoke revolution!

Get the idea that P. A. is simply everything that any man ever longed for in tobacco! You never will be willing to figure up the pleasure you've missed once you get that Prince Albert quality flavor and quality satisfaction! You'll talk kind words every time you fire up!

Toppy red bags, tidy red tins, handsome pound and half-pound tin humidors—and—that classy, practical pound crystal glass humidor with sponge moistener top that keeps the tobacco in such perfect condition.

R. J. Reynolds Tobacco Company, Winston-Salem, N. C.

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· 1919 ·

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REMEMBER THE DATES AND BE SURE TO BE THERE

HANDLING AND CONDITIONING SHOW CATTLE

By Alex. McDonald, University Farm

Editor's Note: The following article was prepared by Alex McDonald who is in charge of the beef cattle at the University Farm. McDonald is regarded as one of the most expert feeders and fitters in the world and has to his credit the grand champion and reserve grand champion steers at the 1916 International and many other famous winnings. His advice is sought and appreciated by all.

I am asked to write an article on "letting down," or carrying highly fitted show cattle from one year to another and still retaining the bloom and smoothness so desirable in high class show animals.

After viewing the splendid specimens that are exhibited year after years at the state and other fairs one would almost think that any information in this connection would be uncalled for. However, for the benefit of those who plan to fit and show a few cattle and have had no former experience in handling them a few suggestions along this line may prove of interest.

The mild California winters where green grass is usually available simplifies the problem of carrying show cattle and furnishes a striking contrast as compared with climatic conditions in the Eastern states. In my opinion plenty of green feed and abundant exercise are the two most important factors in cooling out and conditioning a show herd for next season's fitting.

When the last show of the season is over and the cattle retired to their winter quarters, the grain ration may be gradually reduced, eliminating the noon feed, turning the cattle on pasture during the day and feeding grain morning and evening. After a short time, in the case of mature females, the grain ration may be reduced to once daily, and in some instances when an animal has a tendency to stay fat under almost any conditions if the pasture is fairly good, the grain ration may be dispensed with entirely for a time.

With the younger animals I prefer to feed grain twice daily during the winter months, the amount, of course, to be determined by the condition of the animal, and where a very prospective candidate for next year's showing is in evidence, a nurse cow furnished morning and evening would be a decided advantage.

I have always found a grain ration composed of rolled or ground barley, oats and wheat bran, equal parts by bulk, to give good satisfaction. A few beets may be fed to good advantage, but where green grass is available it is not so important that beets be fed. The importance of exercise will, of course, apply to the younger cattle also, and care must be taken that the animals do not become infested with lice, for a lousy animal presents an unthrifty appearance no matter how well cared for otherwise.

It will also be well to give close attention to the young calves, and when a good prospect appears see that a little extra milk is furnished. Do not attempt to crowd too much with milk at first, as the digestive organs of a young calf are easily overtaxed, causing stomach trouble, and sometimes a chronic bloater will be the result.

The nurse cow will usually care for two calves nicely until they are from four to six months old. At this age one calf will usually be able to take the milk from the average nurse cow.

A CRACK SHORTHORN SALE

One of the attractions of the fall season will be the sale of 45 head of high class Shorthorns for the Roselawn herd at Woodland, of which Henry M. Elberg is proprietor. The Roselawn herd is one of the oldest herds in the state, having been established something like 30 years ago by W. B. Gibson, father of the late T. B. Gibson. The herd has always enjoyed a high reputation and has been the source of many of the best cattle produced in this state. The approaching sale is made necessary by a rearrangement of the leases controlled by the Gibson Estate, whereby Mr. Elberg surrenders part of the land he is now operating. This reduction in acreage necessitates a substantial reduction of the herd to a point that will permit it fitting into the contemplated plans.

The sale promises to afford a rare opportunity for breeders and beginners to select breeding material that would probably never be offered for sale were the herd maintained at its present proportions. One of the chief attractions will be the three year old herd bull Crescent Dale, a splendid red son of Whitehall Rosedale by Avondale. His dam is a daughter of Ruberta's Goods and out of an imported cow. This bull is one of the really good bulls to sell in the West this year. He is a bull of size with a remarkably smooth covering of thick flesh. Calves by him are of a quality to suggest that he can be rated as a valuable sire. Several extreme top females will sell, including the good cow Mischief E 3d, grand champion at the 1918 state fair and dam of the Roselawn herd bull, Roselawn Champion, junior champion at the 1918 state fair. The sale will be managed by the California Breeders' Sales & Pedigree Company, Sacramento.

HIGHLY ESTEEMED POLAND BREEDING

Recent Eastern sales of Poland-Chinas tend to forecast the high value placed upon certain blood lines and individual sires. By the recent sale of Mabel's Jumbo at $18,000 by Halford and Hassler a new record price for a Poland-China boar was established. Mabel's Jumbo was sired by Long Jumbo, who also sired Jumbo Bob, the sire of W. L. Haag and Son's senior herd boar Young Jumbo. Like his illustrious grandsire, Young Jumbo is also siring sale toppers, as open gilts by him were the highest priced open gilts sold in the last two Poland-China sales held in Hanford. In the Haag herd will be found a large number of his daughters, some of which will be included in the sale to be held in Hanford September 17 by the Haags and John Bernstein. Haag and Son consider themselves very fortunate in having in their herd two such splendid boars as Young Jumbo and Lendorris Liberty Bond, representing the blood lines now being sought by many of the foremost breeders of Poland-Chinas. Sows and gilts bred to both Young Jumbo and Lendorris Liberty Bond will be included in the sale, and the breeders on the Pacific Coast will, therefore, have the opportunity of adding this blood to their herds.

A big live stock meeting was held at the Chaffey Union School farm on August 20. F. H. Scribner, dairy expert of the Los Angeles County farm bureau, and Prof. J. I. Thompson of the state university, gave addresses.

Coulson's Baby Chick Milk Mash

The Best Feed for first six weeks

Write for particulars

Coulson Co.

Petaluma, Calif.

Culling for Egg Production

By Jean A. Koethen

THERE has never been a time in the history of the poultry industry when the thoughts of poultrymeu turned so persistently to the elimination of the unfit. It seems from published statistics of one sort and another that the non-producer is the one great stumbling block to the industry. If every hen in every flock could be counted on to lay even ten dozen eggs in a year, there could be no question of profit in a properly managed business. That there are many hens in commercial as well as farm flocks that never come up to this record is beyond question. War necessity forced us to find methods of picking out the high and low producers. There is no longer room for the latter. They must be detected and removed.

The whole matter of culling naturally falls under three heads: the culling of pullets that have not yet laid, the culling of pullets that have laid but a short time, and the culling of hens that have laid six months or longer. In culling pullets that have not yet laid we look first of all for vigor, and second for capacity.

Vigor

No pullet can stand up under present day requirements that does not possess what is known as constitutional vigor or inherent vitality. Such a bird will have a full, bright eye, an alert air, and usually a short well curved beak, short legs and short toenails. A vigorous pullet grows and matures more rapidly than one lacking in vigor. She is usually the first to begin laying in the fall, hence the birds that lay earliest may safely be banded as probably those that will always be prolific layers.

Capacity

When we speak of capacity we mean the size of the abdominal cavity. Outward and obvious signs of capacity are the long back and deep keel which have always been considered characteristic of the egg type. A hen that is to manufacture many eggs must have room in which to make them. The Hogan system of picking layers is based entirely on capacity and is essentially a test of type, for, other things being equal, a pullet with long back and deep keel will be characterized also by a considerable space between the pelvic bones and the end of the keel. This distance has been found to range from three-fourths of an inch to as much as five inches. In pullets that have not commenced to lay it should be large enough to permit the insertion of at least two fingers, and some experts say three. Others believe the length between keel and pelvic bone is not itself a reliable test but must be considered along with the cheracter of the pelvic bones. If these are straight and thin the hen is a promising layer; if they are thick and bent in toward the center she is not so promising.

Performance Vital Test

Having selected the pullets that have vigor and capacity, our next step in culling is to watch them for two or three months. Here a trapnest is almost essential. If that is out of the question, as it is on most poultry plants, the next best thing is the keeping of a pen record. "If a pullet does not lay 20 eggs a month after she is once fairly started, I don't want her," said a successful poultryman to me not long ago. A little leeway must be given the pullet that is beginning, but after the first month she should lay 20 eggs each month. If the pen record shows a lower average than this it is time for the poultryman to ask the reason. Comparison of the pullets in the pen with respect to type, comb, and general alertness and vitality will usually result in the detection of the low producer right at the beginning of her career. Examination of the pelvic bones may also be a sufficient test, for the oftener a pullet lays, the wider apart and the more elastic are these "lay" bones, as they are sometimes called.

Culling by Color

From May to September we may cull the flock that has been laying since October or November of the year before by the color of shanks, earlobes, vent and beak. This is a test that is usually applied several times and is not considered final unless corroborated by the Hogan test.

"We cull by the color test entirely," said the proprietor of a 4000-hen ranch in answer to my query, "but the Hogan test always backs it up." On this ranch the hens are culled in May, June, July and August, each culling removing the hens that have stopped laying and are beginning to molt. The culling might be deferred till the molt is completed, but the owner thinks he is saving money by eliminating the early molters at the beginning instead of at the end of the molting period.

The theory of the color test is simply this: The body of the bird contains quite a large amount of yellow pigment, which is most easily seen in the shanks of yellow-legged birds, about the vent and in earlobes and beaks. When a hen is laying this yellow pigment is absorbed and put into the yolk of the eggs she lays. As the body does not contain pigment enough for all purposes the yellow parts of the body fade as more and more eggs are produced. A pullet that has laid steadily since November will in May show pale shanks, earlobes, beak and vent. Especially about the vent is the change in color noticed. Color fades out first here, as production continues, and returns soonest after production ceases.

When a flock is culled in May by the color test, the birds that have either not been satisfactory producers during the winter or have already begun to let up in their laying preparatory to the molt may be easily recognized by their yellow shanks, etc., while those that are still laying

(Continued on Page 319.)

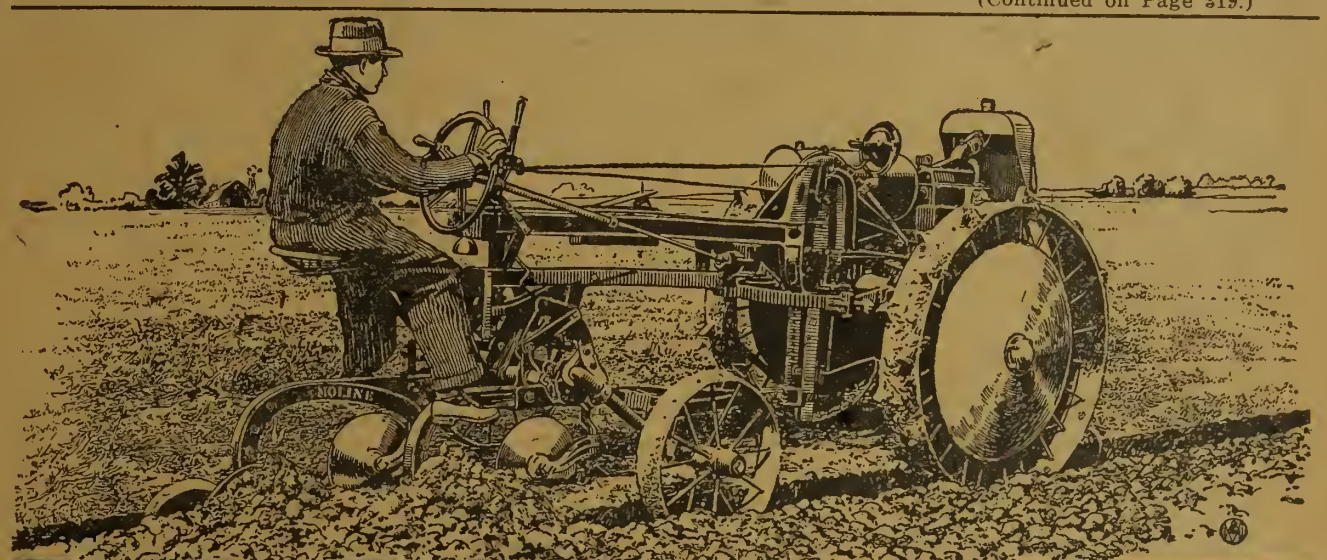
POULTRYMAN'S CALENDAR—SEPTEMBER, THE CULLING MONTH

Culling does not begin in September, but it should be finished by that time. Many poultrymen begin to pick out the low producers in May and continue at regular intervals until September. Others cull less regularly but make a general round-up by the middle of September.

On many poultry farms the pullets are Hoganized in September, those which pass the test being put in the laying houses and the others being sent to market or segregated for further testiug.

In September the hens that have laid off to molt show it very plainly by their yellow legs and earlobes and their deeply colored beaks and vents. Those that have not molted are ragged in feather and pale in shank and vent. It is these late molters that are recognized as the heavy layers.

Only probable or tested producers should be left in the houses after September. Every early molter, every sickly or lazy bird, every backward pullet should be culled out. Success with poultry is largely a question of careful and remorseless culling.



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For Sale on Account of Death and dissolution of partnership, our home of 67 acres; 50 acres in nuts and fruit. Good income. No gravel or waste land; some alfalfa. Beautiful location on the S. P. R. R. 11 miles from Sacramento; 1 mile from Elk Grove. Fine schools; good roads; all conveniences. Place noted for its fancy products. See some of these in Sacramento County Exhibit at State Fair. Buildings, pumping plants, etc. A-1. Price includes tractor, team, farm equipment, farm tools, etc. No better bargain ever offered. Tribble Bros., Elk Grove, California.

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For Sale—Fruit and Poultrymen—It will be to your advantage to write today for information about the Paradise district—deep rich soil—ideal mountain climate. (Above frost and fog.) Electricity and an abundance of pure water.
Choice tracts $100 per acre.
PARADISE LUMBER CO.
Paradise, Butte County, California.

For Sale—To Settle Estate: 11 or 14 acres in the Pomona district at less than real value; 11 acres at $20,000 or 14 acres at $28,000; oranges, lemons, solid on the 11 acres; fair buildings and several kinds of fruit on the other three; $15,000 cash will handle, plenty of water with place. P. A. STANLEY, Fullerton, California, R. 4, Box 123.

For Sale or Trade—160 acre ranch will sell with stock and equipment, or will sell land alone, have A-1 land, near town, lots of water; or will rent to reliable party. I have other business and must sell or rent this place. For full particulars address, Chas. E. Johnson, Yermo, California, Box 34.

Livingston Lands For Sale—I have several small tracts of Livingston sandy loam, unimproved, which I will sell at a fair price and on reasonable terms. Will take Liberty Bonds at par in full or part payment. G. H. Winton, First Bank of Livingston.

For Sale—Twenty Acres Alfalfa, 26 fine Holstein cows, 1 fine Holstein bull; good pumping plant; good 7-room house; two good cow barns. Fifty tons of alfalfa in the barn. Will sell reasonable. Address S. Stokes, Artesia, California. Phone 7105.

For Sale—Fruit, Almond and Alfalfa Lands, abundant water available; river bottom lands, improved and unimproved, 20 acre tract and larger. J. F. Corbett, Willows, California.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

For Sale—Finely equipped poultry farm at Atascadero, California. Write for particulars and terms. Bestrun Egg Farm, Atascadero, California.

For Sale or Exchange—Lot on High Street, Oakland. For particulars address R. A., Box 161A, Acampo, California.

For Sale—30 Acres Alfalfa.. Write me for descriptions, price, terms. L. E. Williams, R. D. No. 1, Box 10-B, Imperial, California.

Wanted to Lease Five or More Acres—must have plenty of water, also good house. Address: R. B. HALL, Venice.

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For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

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Tanks, Tanks—100 used redwood, iron tanks, no profiteering in these prices, which are same as before war: 200 gallons, oak cask, $4.75; 1000, $27.50; 1600, $35; 2000 redwood, $28; 3000, $33; 4000, 5000, $48; 6700, $58; 25,000, $125; 35,000, $185; bunch galvanized tanks, 100 to 3000 gal., make new galvanized tank, 22 gauge, 1000, $39; 2000, $52; go in car door. Cheap freight. Also 50 windmills, 25 pumps, 50 cylinders. DEMMITT CO., 120 N. Main, upstairs. Yard, 816 Yale, Los Angeles.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

CATTLE

AUCTION

150—HEAD OF HOLSTEINS—150

2—PURE BRED HOLSTEIN BULLS—2

At the H. S. King Dairy, 5 miles south of Compton and 5 miles north of LONG BEACH

FRIDAY, SEPTEMBER 12th at 10 a. m.

When we tell you that this is undoubtedly the best bred herd of grade Holsteins ever offered at public auction on the Pacific Coast, you will realize that they must be pretty good. The dams of this herd were the results of the use of pure bred Holstein sires for 15 years and the herd that is to be sold on the 12th is practically 31-32nds pure bred.

This stock has excellent type, nicely marked, growthy, in fact cannot be duplicated. The offering will include 40 head of heifers milking with their first calf. Included in this lot are some exceptionally heavy producers. 88 head of heifers from 20 to 24 months old, all heavy in calf and include a large number of heavy springers. 22 yearling heifers.

For full information in regard to this sale write auctioneers.

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110 EXTRA HIGH GRADE HOLSTEINS
A complete dispersal of the Roeber Company herd on their farm, 4 miles north, 1½ miles west of Maxwell, Colusa County, California. Irrigation of nearby rice fields has raised the water level of the alfalfa fields, curtailing the crop to such an extent that this sale is necessary. One of the finest herds in California. High class Wisconsin cows and their daughters by one bull whose sire is out of a cow that made over 18,000 lbs. milk and over 776 lbs. butter in one year, and by one whose sire is a grandson of Tilly Alcartra out of a dam that made over 17,900 lbs. milk and over 702 lbs. butter in one year. One of the very best herd of grade Holsteins ever sold in northern California. Date of sale, Tuesday, September 23, beginning promptly at 10 a. m. Auctioneer, Col. Ben A. Rhoades, Los Angeles. Sales manager, C. L. Hughes, Sacramento.

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Two registered Guernsey bulls, nine months old, P. J. Weisel, Santa Fe Springs, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Grecnough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

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CASTLEVIEW

Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

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Do you realize this is the only opportunity you have ever had on this Coast to secure the pigs of a Grand National Champion? Duke is breeding them long and thick. He is getting old and may die any time. You are started right if you get his pigs. A very good April boar pig sired by Duke and from a half sister of Rincons Rival 2nd, cholera immune, $35.00. Sandercock Land Co., in charge of Natomas Sales, 23 Montgomery Street, San Francisco, California.

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Sired by
ORION CHERRY KING, JR.
the $3,500 Boar.
is making his mark as a great breeder. He heads our herd of up-to-date Durocs. The most popular blood lines are represented in his pedigree—the kind that have laid the foundation for many prize winning herds. Choice spring boars for sale. If you are in the market for some outstanding boars, we have them. F. D. BURR Co., ORLAND, CALIFORNIA.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

Illiliken Chester Whites; July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Durocs—A few very fine gilts and boars five months old, about 175 pounds, Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Faifadale Farm Durocs, Perris, California. Our $2000 boar, Great Orion Sensation, Jr., heads herd. Fifteen prospective litters by Giant Orion. Write B. H. Wilkinson, Mgr.

Duroc-Jerseys at Ireland, home of Cherry Volunteer II and Ireland's Joe Orion. Ranch at Owensmouth, California, City Office, 1219 Brockman Building, Los Angeles, California.

A Few Poland-China Boars ready for light service by King's Big Bone Leader and President. Priced right. Full particulars on request. John M. Bernstein, Hanford, California.

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

We Have 100 Young Gilts and Boars, bred in the purple, which we are selling for about half their value. Money back if not satisfied. Derryfield Farm, Capital National Bank Bldg., Sacramento.

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The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Fine Chester Whites, 2 months, 4 months. Very reasonable. K. Weilman, Los Altos, California.

Duroc-Jersey Swine For Sale, best blood lines. Bred sows and gilts, service boars. Jersey Queen Farm, San Jose, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

A. R. Bardrick, breeder of Duroc-Jersey hogs. Stock for sale. Oceano, California.

El Profito 296867, a 900-lb. line bred Big Timm boar in service. Write. Viola L. Renwick, Santa Barbara, California.

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Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

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Fall Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock. Price during August: 25, $4.00; 50, $8.00; 100, $14.00. Price during September: 25, $4.50; 50, $8.50; 100, $15.00. Special prices 500 and 1000 lots. Safe delivery guaranteed; you pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in world. Established 1893. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

Baby Chicks From My Carefully Selected, thoroughbred flock of S. C. White Leghorns. I am booking orders now for a limited number of first class chicks August and September delivery at $15.00 per 100. Make your arrangements early. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Petaluma Hatchery — Established 1902. Can ship day old chicks to points reached in three days. Four varieties. Why not have the best? Free fall circular. L. W. Clark, Petaluma, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

Baby Chicks—Order fall chicks now from our large heavy laying S. C. White Leghorns. Tupman Poultry Farm, Ceres, California Box 7 "C."

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

Wanted Two Dozen Rose Comb White Wyandottes. Yearling hens, also two 250-egg incubators. Issott, 440 Hedding Street. San Jose, California.

For Sale — Silver Campine Cockerels — also eggs for setting. Roy Ward, Lindsay, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

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MISCELLANEOUS

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A Large Assortment Used Motors and Gas Engines always on hand. Let us know your requirement. Your order—no matter how exacting—can be filled. One of the best Electrical Repair Shops on the Coast. At Your Service. For all-around satisfaction take up your problem of equipments and repairs with Karl A. Hedberg, 131 Fremont Street, San Francisco, California.

Made of Redwood, Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 81 Washington Building, Los Angeles, California.

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Autometer—Reduces car expenses, troubles, accidents, improves mental, physical condition. $1 00 prepaid. Kautch, 122 Miner, Stockton.

Milch Goats and Orpington Chickens—Cash Nurseries, Sebastopol, California.

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PIANOS—PLAYER PIANOS
Paige Piano Co., 1600 Clay Street, Oakland, California.

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For Sale—Golden Pheasants in full plumage. E. Borchert, Garden Grove Road, Anaheim, California.

WANTED

Want Responsible and Experienced fruit, alfalfa or grain irrigation farmers to work on crop share basis. Land is river bottom tule land, plenty of water, good living conditions and good markets. Will enter into one or two years contract with right men and might extend same into option of purchase. Party should have some implements, live stock or money with which to buy them. Please state age, farming experience, from whom you have rented, amount of livestock and implements you own, financial condition, and size and age of family. State when your services will be available and amount of land you can handle. Address Herman Janss, San Joaquin, Fresno County, California.

Wanted, Work on Ranch by married man, life experience, 7 years experience with pure bred pigs, four years with present position. Can give reference. Write F. R. Callaway, Del Sur, California, or Phone Lancaster, Graham Ranch No. 2.

Orchardist and Ranch Manager of executive ability. Experienced in stock and general farming desires charge of going place. Would consider lease or investment. Box 99, California Cultivator, 112 Market Street, San Francisco.

Wanted by married man, good dairy or alfalfa ranch in Marin or Sonoma Counties, on shares or would take position as foreman. Address R. 5, Box 131, Petaluma, California.

Wanted—A thoroughly efficient man to take charge of curing and packing of lemons and oranges in Northern California. Apply to James Mills Orchards Corporation, Hamilton City.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Wanted to Buy Second Hand hog wire, 34 or 36 in. high in good shape for to fence 20 acres. W. J. McCardia, Blythe, California.

Agents Wanted — Sell Automobile Tires and tubes on liberal commission. Address Arnott & Co., Dept. 10, Los Angeles.

Wanted to Hear From Owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Wanted—Position as foreman on ranch. J. R. Dickson, R. R. No. 2, Highland, California.

Bees Wanted—In boxes or patent hives, also equipment. Address E. C. Rothchild, Rutherford, California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Write for Circular and Prices of Seeds. Wanted Sudan. Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

For Sale—Everbearing Strawberry Plants —Progressive, $1.50 per hundred; Superb, $2.50 per hundred, postpaid. G. M. Hawley, La Mesa, California.

Wanted Seed Beans for fall planting. Address K. W., Seedman, Cultivator.

RABBITS

For Sale—You will be satisfied with my high grade New Zealand Reds, Pedigree and Utility Stock at reasonable prices. F. R. Caldwell, Broodmoor, San Leandro, California.

Money in Rabbits—We are having a special sale of very fine bucks and does at reduced prices. Write us for particulars. H. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

GOATS

Registered Angora Bucks from kids to 5 years of age. As good as the best. Thorne Ranch, Uno, El Dorado County, California.

ENGINES

For Sale—Waterloo Boy tractor, just completely overhauled, engine rebored and guaranteed in perfect mechanical condition. Good reason for selling. Also small Bean thresher. P. J. Weisel, Santa Fe Springs, California.

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For Sale—Lauson tractor, Deering harvester thresher, Moline 3-14 in. tractor plow, John Deere double disc. Used one season. A-1 condition. C. L. Thornton, R. 1, Box 30, Tulare, California.

SHEEP

Sheep for Sale—Young Merino and Rambouillet ewes; North California stock. Apply, write or wire ANDREW H. McINNES, wool and sheep broker, 408 Bank of Italy Bldg., 550 Mont. St., San Francisco.

For Sale—225 unshorn merino ewes—old but in good fair order. Address: James G. Mee, St. Helena, California. Phone 60 F 1-1.

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Pacific Auto and Engineering School offers a practical course in auto and tractor tuition; day and night classes. 337 Golden Gate Avenue, San Francisco. Phone Market 1799.

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CULLING FOR EGG PRODUCTION

Continued from Page 317.

heavily will show it by their lack of color. The June, July and August tests merely take the early molters. The hen that is still laying heavily in August has a pale, ragged look. She is not one of these flightly females that are always thinking about their looks, not she. By September the early molters are already in their glossy feathers and bright yellow shanks. They began to rest too soon and may well be eliminated. Examination of the abdomen and pelvic bones will almost always reveal that these hens are not laying and have not been laying for some time.

Watch the Count

One of the best tests of a hen's present performance is her comb. When the comb is bright and red and fully developed the hen is unquestionably laying. When the comb is small, pale and dried up, production has ceased. If such a comb is noticed in the spring, when all hens should be laying heavily, she may as well be removed from the flock. If such hens are put by themselves for a short time their value can soon be determined. If extra feeding does not change the appearance of their combs they may be classed among the slackers and sent to the butcher.

No one of the above tests can be absolutely relied on by itself, but the application of all together will soon bring up the production of the most unpromising flock.

LIVE STOCK ASSOCIATIONS MEET FAIR WEEK

A number of live stock associations held meetings at Sacramento during the week of the state fair. The California Shorthorn Breeders' Association met and dined at the Travelers' Hotel the evening of September 1. The Pacific Coast Hereford Breeders' Association and the California Holstein-Friesian Association claimed the following evening for their meetings and banquets held at the same hotel. Other associations held meetings during the week.

TEHAMA COUNTY FARM BUREAU MEETINGS

The regular meetings of the Tehama County farm bureau will be held as follows during the month of September: Antelope, 9; Dairyville, 10; Oak Park, 12; Richfield, 15; Corning, 17; Bend, 19; Los Molinos, 22; Proberta, 24. Directors meeting in Red Bluff on September 19 at 1:30 p. m. All other meetings at 8:30 p. m.

The annual meeting and picnic will be held on September 27. This will be an all day meeting. The business meeting and election of officers will be called for 10:30 a. m. Everyone is cordially invited to attend the annual meeting. Bring your picnic lunch and stay all day.

SAVING MAN LABOR IN SUGAR BEET FIELDS

Farmers Bulletin 1042 of the United States department of agriculture, Washington, D. C., discusses the saving of man labor in sugar beet culture. It discusses the question from every standpoint of culture, harvesting and delivering. It will be sent to every sugar beet grower who writes to Washington requesting it.

4 to 18 tons
of green corn silage
per hour, day after day

The one-silo farmer and the big custom operator who handles the work for a whole neighborhood, both find the solution of silo-filling problems in the

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Safe SILAGE CUTTER and SILO FILLER

Money-Making Features of the Money-Maker

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QUALITY

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The safety features of the MONEY-MAKER are invaluable. The AUTOMATIC SAFETY YOKE stops and reverses the feed the instant that the operator's hands get too close to the feed rolls. The CUSHION DRIVE takes up all shocks, jars and unusual strains and saves repair and replacement bills, and means UNINTERRUPTED service.

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LOS ANGELES.

Household Department

"DE BIGGES' PILE"

I

"Heah Yo' Washin'ton Lincum Lee,
what kin' of boy yo' gittin ter be?"
Stan'in thar, lik' yo's nofin ter do but
watch 'at woodpile front ob you.
Spec' dem logs is gwine ter say—"We's
goin' ter split oursel's terday, jus'
run erlong, ll'l boy, an' play."

II

"Oh! 'Yer has done a lot, but it seems
as tho' de res' keeps pilin' mo' an'
mo',
An' yer reckon, ef dey gwine that a'way
ter ac', yo'll neber hab de time ter
play.'
"Sho, 'at's kase mos'ly all de while, yo'
jus' keep watchin' de wrong heap,
chile. Turn 'roun', an' look at de
'is done' pile.

III

"Ain' ah tole yer time 'n' agen, 'at when
yer grows an' gits 'mong men,
Dey aint gwine ter car' what you' 'has
ter do,' but dey'll sho wan' er know,
what's 'been done' by you.
An' de mo' 'ls dones' yer has ter show,
de mo' day's gwine ter respe' yer
so, an' point yer out where'er yo'
go.

IV

"Fo' de man what shirks his wuk ter
fret 'bout his job wha' aint done
yet,
Jus' as sho's yer a foot high, son, is de
feller what neber gits nofin done.
An' nofin done means nofin ter eat, an'
mos'ly holes in yer trouser seat,
an' yer rated 'No 'Count' by all
yo meet.

V

"So—wheneber yo' has a task ter do, jus'
'member what Ah'm tellin' you,
Inodah ter 'complish de 'tings yer should,
yer mus' do lik' yo's shoppin' 'at
wood—
Don' fret 'bout what aint done, chile,
keep pluggin' away an' in a while,
de one whats Done is de 'Bigges'
Pile.'"—Clarence Elmer, in Boys'
Life for September.

THE PERFUME CLERK

By Marianne Grauss, in Youths' Companion

LONG aisles smelling of soap essences; an electric fan running overhead; on the right, a display of umbrellas and gloves; in front of the counters, stout women, thin women, awning-striped skirts and tailored models; behind the counter, girls with fluffy hair and powdered faces, and one girl especially who was called Rosalys — those were the things that Alice Hall saw when she closed her eyes. When she opened them, she saw the growing wheat that was of such vast imoprtance to her country, and muddy water flowing lazily in ditches or spreading over a field. She had just finished irrigating for the day.

The times of the perfume counter seemed long ago, and that girl called Rosalys not herself. When she first went to town, Alice Hall had begun to spell her names "Alys"; then she had taken Rose as a first name, for an aunt she had; and finally, somehow, she was Rosalys.

Only. John Mason had never learned that name. He had refused point-blank to learn it. John was the only real thing it seemed to her now in all that time during which she had worked at the perfume counter. She had been engaged to him all the while. Because she had always hated her life on her uncle's farm she had gone to the city; at the same time John had left his mother's place and had found work in the city, too.

Seated on the doorstep near the pinto beans Alice laid her head wearily against the frame. While they were in town, she and John used to go almost every night to the motion pictures. That seemed strange now; and it seemed stranger still that she had liked it all so much.

Into her life as a perfume clerk who was beginning to save finery for her wedding had dropped a great bomb—the war. At first it sputtered as if it were never going off; and at worst it seemed to make no personal difference to her. Then suddenly it had torn her life to pieces. She was not sorry for that—she had changed so—except that John was gone. Inside the house she heard his mother cough, and she went to take her a drink of water.

"It's swect of you, child, to come and help on the place this summer."

Alice smiled. It was a comfort to be needed. Farm laborers were nowhere to be had. She and John's brother Roscoe—who lived in the gray cottage across the fields—and Roscoe's wife, Mildred, were caring for the crop.

"You've always hated farm work," gratefully resumed John's mother.

"No—really. I like it."

It had never been the work that she hated; it was the loneliness of the country; especially the dark, quiet nights, when there is so much time in which to think and to be afraid. She tried to think how brave John had been; she tried to be brave herself. But she had always been afraid of darkness and of quiet, and of death. She would not tell his mother that she was afraid to think; that might lead her to guess something that she was not to know while her heart was weak from her last attack of rheumatism.

"Dear me!" Alice continued. "I shouldn't want to be selling perfume with the world begging for wheat."

"Did you look in the R. F. D. box today?" John's mother asked.

Alice nodded and went on rapidly: "All the people with boys at the front tell the same story. There'll be no letters for weeks, and then seven or eight will float in on the same mail. You mustn't think because we don't hear—"

Her voice broke; she went out of the room hastily and wandered down to the road, where the zinc mail box was nailed to a tree. There was nothing inside; she had known that there would be nothing. When she put her hand in to feel, a sick sensation came over her—she was remembering that day when had found a franked letter that was not in John's handwriting. It was addressed to his mother, who had been very ill that week, and Alice had opened it. She would never forget the words written in the strange hand:

"Reported by Swiss Red Cross a prisoner in Germany."

First she had given the letter to Mildred; then she had gone back to the house. It was dinner time, but food seemed to choke her—because probably John was hungry.

A month had passed without further word. Then one afternoon Mildred had beckoned Alice to come into her house; Roscoe had opened the mail box that day.

Alice remembered that afternoon clearly. Mildred had closed the door to keep out the children. Then Roscoe had said:

"We have news. It is really good news. John isn't a prisoner any more—he's free."

Alice had guessed at once—she had not needed the line, "Reported dead by Swiss."

Probably they would never learn more than that bare fact.

She turned from the empty mail box tonight and went through the big front yard, under the old trees where she and John used to swing as children. Then she crossed the irrigating ditch and in the deepening dusk wandered at the edge of the wheat She had come in the early spring and had seen the grains of wheat fall into the ground to die—and now, before long they would bring forth fruit. She had seen them leap up from the earth, bright and strong in the sun; but the fields were darkening now. She could hear owls in the trees by the river; overhead the nighthawks still screamed as they chased gnats.

Alice was afraid again. When she was a little girl, her mother had died; and after that Alice had always been afraid. Now, she was afraid of everything, but especially afraid to have John die. Sometimes, when it was dark and the frogs made a noise in the ditch, or the wind blew, she almost resolved to run away back to the lights and the picture shows. She ought not to have to live during the war. She was not fit. The stars frightened her—strange worlds that no one knows about— and those dim fields, across which she could not see.

It was a hot night. A bank of clouds rolled up out of the west. Alice went in and locked up the windows. John's mother had always slept without turning a key; John was like her, not afraid of things that might be in the dark. That night Alice made the house so close that she could not sleep.

She lay awake—she thought—until nearly midnight. Then, suddenly, she sprang up in bed, and her heart thud-

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When boiling beef, ham, tongue etc., let them cool in the water in which they were boiled and they will be deliciously moist and sweet.

ded against her breast. She could hear Mrs. Mason breathing. What had sounded to her like a step outside the window must have been the rustling of the cottonwood trees in the wind. But she put on part of her clothes and went into Mrs. Mason's room; she wanted to speak to some one. But John's mother was sleeping so quietly that Alice would not disturb her; she crept back to bed.

A few minutes later she sprang up again. This time it was not the wind she had heard, for the air was now still. Some one was on the porch. She heard the knob turn softly.

She knew what John's mother would done in her place; but Alice could not make herself go to the door and look out through the glass. She lay with her heart pounding at her chest like a workman's hammer. At last she slipped out of bed and, putting on her wrapper and slippers, crept to a window.

The moon was overcast, but through the clouds a dim light relieved the darkness. Alice could see the big lilac bush—and the swing. She could see the porch also, and no one was there. A shudder and a chill shook her body. She did not know what she dreaded—she was wondering what terrible visitor had been on the porch a few minutes before.

After a time she crept back to bed and lay with wide-open eyes, listening. It grew very dark outside. The damp air was like a sponge, muffling everything. Then the wind rose; so she could not be sure whether she heard the wind or soft footfalls going round the house to the side porch. There was a hammock on the side porch, where John used to sleep on hot nights. The hooks and chains creaked; she did not know whether the wind was blowing the hammock, or whether the intruder had brushed it aside, in order to approach the side door.

She thought she would just lie there and wait for morning. For a long time she heard nothing except Mrs. Mason's breathing. The intruder, she thought, had gone away. Finally the fatigue of a hard day of work overcame her resolution, and she fell asleep.

Her dreams were so bad that she soon woke. It was raining hard; there was thunder in the distant mountains and now and then a white burst of light. She knew, although she did not know how she knew, that she and Mrs. Mason were not alone in the house. For a moment she sat up in bed and could not move—the pounding of her heart made her so sick.

At last she slid to the floor, still in her wrapper and the pale blue kid slippers with gold buckles that she used to wear when she was a perfume clerk.

Then in the room over her head she heard such a creaking step as that which probably had roused her from her sleep. She went into Mrs. Mason's room. That time John's mother stirred and asked as if half awake:

"Did John get in?"

"No. This is Alice," replied the girl

Her voice was steady, as if she had not been a coward, as if perhaps she could meet her test. She opened a door into the hall. There was a light in the room at the head of the stairs. When she saw the lamplight filtering through the shadows of the staircase, all her courage went. She unlocked the hall door. Roscoe's cottage was three quarters of a mile away.

But she could not be such a coward as to go—to leave Mrs. Mason alone. She turned back. "Alice," said Mrs. Mason, "John got home, didn't he?"

Alice stationed herself just outside the door leading into the hall. "No," she answered; "you were dreaming."

Then she heard some one coming downstairs.

"No, she isn't dreaming!" said a voice. "She heard me. I was so afraid—her heart, you know—I broke in like a thief when it began to rain. But—"

He forgot the rest of his sentence—forgot everything when he saw Alice at the foot of the stairs. "Al?" he cried. "Al! Why, Al, I telegraphed to your boarding house—why, Al-ice!"

Before Alice had come to herself, his mother called again, and they ran into her room.

He picked his mother up in his arms, as if she had been a baby. Then he laid her back into the chair where she slept because her heart was so weak that she could not lie down. Now and then he patted her shoulder and laughed; and Alice, who stood on the other side of the chair, laughed, too, but wiped her eyes. The Masons were not tearful.

Evidently John had been ill, for his face was as white as a baby's; she guessed it was pneumonia, since he had been sent all the way to the dry air of the Rockies to recuperate. He looked questioningly at Alice over his mother's head; and the girl knew just what he meant: "Have you heard any report about me?"

Alice nodded.

His eyes questioned again: "Has mother?"

Alice shook her head violently: that was to indicate, "No! And don't you dare startle her!"

In his face, white from hardship and the illness that had followed it, some old scars showed. Once, when he was a child, he had caught a bobcat and tried to train it for a circus animal. He had got those scars as he was trying to teach it to stand up on its hind legs. Suddenly Alice burst into laughter. Why had she not known that John would get out of the prison camp? If anyoue escaped, it would be Private Mason, U. S. Engineers!

"What are you laughing about?" His eyes were shining as he asked; but he knew.

"What are you children whispering about?" asked his mother. "John, come round here where I can see you."

"I'm going to tell her about it, Alice; it won't hurt her. Mother doesn't scare worth a cent, you know. Say, mother, I've been a prisoner. It's a fact! Bunk Sackett and I made a break for it and got away; and the little German camp commander felt so bad about it he reported us both 'Died of wounds.' And I've got a furlough. What was the use letting you know I was coming? I didn't know it myself till I started, and I was sure to be here before a letter."

He stopped speaking, abruptly. Outside, hail had burst from the clouds of the night. It thundered on the roof like the shrapnel of the battle field. Alice gave a little gasp of relief that he was out of the shrapnel now. Surely he had done his "bit"; he would not be sent back.

(Continued next week.)

FAIR PRICE FOR SUGAR 11 CENTS

In line with the endeavor to establish reasonable living prices the food administration announces that sugar should not retail for more than 11 cents a pound and that "where it is retailing for more it indicates that either the wholesaler or retailer is making an unreasonable profit."

VENUS, THE EVENING STAR

Beautiful Venus is now glowing in our western sky as the evening star. Every evening she is lower and lower, and by the middle of September will no longer appear above the horizon. After that we must get up early in the morning and look for her in the east where she will appear as our morning star. If we follow the old Greeks and Romans who loved to watch the stars, we will call this planet Phosphorus or Lucifer (the morning star). As evening star it was to them Vesper or Hesperus.

THE GROUND GLASS BOGEY

Now comes the army medical corps and knocks into a cocked hat another of our cherished worries which figured so prominently through war days. W. H. Feldman of the Colorado Agricultural College is authority for the statement that experiments by the army medical corps have disproven the popular belief that ground glass is harmful to the digestive tract.

Glass was ground and sifted to secure varying degrees of fineness and considerable quantities of the material were incorporated in fresh meat, the same being fed to hungry dogs. This was repeated in some instances on a number of days, after which the dogs were killed and the digestive tract examined both with the naked eye and the aid of a microscope, and no injury whatever was perceptible. Before being killed the dogs apparently suffered no inconvenience and appeared normal in every way.

What Do You Know About Pianos?

Assuming that you can "tell a good tone," can you judge the hundred and one things which enter into the making of a Piano, the things which have their part in making and maintaining a good tone? Do you know the differences in plate and scale design? Are you familiar with the various actions? Are you a judge of the wood, the wire, the felt, the veneers and all the other materials which enter into the making of a Piano?

Probably not — not one person in a thousand possesses this expert knowledge. After all, when buying a Piano you depend greatly upon the expertness and the integrity of the dealer or house. Let your greatest care be the selection of the Piano House. Tell that house what you would like and what you can afford and they will guide your selection of a Piano with expert judgment and a sincere desire to serve you well. Beware of a "cheap piano"—in the end it is the most expensive. Avoid the alluring statements of some dealers — they are but pitfalls to catch the unwary. Protect yourself by going to a Piano House with a reputation for integrity and fair dealing—you will never regret it.

We invite you to call at any of our stores — or write us asking for illustrated catalogs and prices.

We are dealers in Steinway and other Pianos, Pianola and Duo Art Pianos, Aeolian Player Pianos, Player Rolls, etc.

Sherman, Clay & Co.

Kearny and Sutter Streets, San Francisco
Fourteenth and Clay Streets, Oakland
Ninth and J Streets, Sacramento
325 E. Main Street, Stockton
J and Merced Streets, Fresno
190-192 S. First Street, San Jose
Stores also at Vallejo, Portland, Seattle, Tacoma, Spokane.

Filled with Pearl Oil, a good oil heater gives comfort without dust or dirt. Oil consumed only when needed; portable, economical.

Pearl Oil is the ever obtainable fuel, refined and re-refined to be pure and clean burning. **Order** by name—Pearl Oil.

We recommend Perfection **Oil** Heaters.

STANDARD OIL COMPANY
CALIFORNIA

Los Angeles Markets

Los Angeles, September 4, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 57 lb.; prices to retail merchants in 1-lb. squares, 57@58.

Dairy Exchange prices last week on extras:

Aug.	27	28	29	30	Sept. 2	3
'19 ...	59	59	59	..	56	57

CHEESE

Brokers' prices:

California fresh, lb., 33; price to retail merchants, 34@35.

EGGS

Fresh extras, Produce Exchange closing price 58 dozen, price to retail merchants 62 dozen; case count, Produce Exchange closing price, 56 dozen; price to retail merchants, 60 dozen; pullets, Produce Exchange closing price, 48; dozen; price to retail merchants 49; pewee pullets, 33.

Dairy Exchange prires last week on extras:

Aug.	27	28	29	30	Sept. 2	3
'19 ...	53	53	53	..	57	58

POULTRY

Prices to producers: Hens, lt., 28½; heavy, 28½@33; colored over 4 lbs., 36; broilers, 28; fryers, 25; roasters, 33; old roosters, 10; capons, 42; ducks, old, 25; ducklings, 26; geese, 25; turkeys, 34@40; squabs, 45.

Belgian hares, live, 15.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 17.00; 150 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.00; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 3, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market unsettled. New stock, Stockton Burbanks, 2.90@3.00; poorer, 2.60@2.85. Homegrown White Rose 1.00@1.10 lug box.

Sweets, lb., 4½@5.

Onions: Demand and movement moderate. Homegrown and Stockton White Globes 90@1.00 per lug box; 2.50@2.75 per cwt. Yellow varieties 2.50@2.75 cwt.; lug boxes 85@1.00; local sack lots 30@35 cents lb.; bulk 35@40 cents.

VEGETABLES

These are the actual prices obtained September 3, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Kentucky Wonders, 3@3½ lb., practically no demand.

Carrots, doz., 35@40.

Cucumbers: Local lug, 25@35; pickles, 1.00@1.50.

Celery: Local, best, 75@1.00 dozen

Corn: Roasting ears, 50@60 per lug of 3 dozen.

Eggplant, best, lb., 2@2½.

Peppers: Bell lug, 25@35; Chili, 40@50.

Peas: Local, lb., 8@10.

Tomatoes: Lug, ripe, 40@50; shipping 50@65.

Turnips, doz., 35@40.

FRUITS

These are the actual prices obtained September 3, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: Gravensteins, packed, 2.75@3.00. Skinner Seedlings, packed, 2.40@2.60. Crab apples, per lug box, 2.25@2.40. Jonathans, bulk, 6@7 lb.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews 75@80. Paul Rose 60@85. Various varieties, cabbage crates, 2.50@3.50.

Grapes: Demand and movement moderate, market firm. Sales direct to retailers: Local: Bulk per lb., Muscat, Malagas and Hamburgers 5@6; Tokays 6@8; Concords 8@9.

Nectarines, lb., best 6@6½.

Peaches: Demand and movement moderate, market firm. Sales direct to retailers. Local: Various varieties, bulk 4@6 lb., according to quality and condition.

Pears: Demand and movement good, market firm. Sales direct to retailers. Northern: Bartletts, standard boxes, 2.75@3.00; fancy, bulk 6@7 lb.; choice 4@5.

Pineapples, lb., 15@17.

Plums: Demand and movement slow. Satsumas, 5@6 lb. Hungarian, 4@5.

Watermelons: Demand and movement slow, quality and condition generally good. Local Chileans and Klondikes, large 1½ lb., medium 1, small ½ lb.

Lemons: Fancy packed, 5.75@6.25; local pack, 4.00@4.50; loose, some tree ripe, 3.00@3.75.

Oranges: Valencias, medium fancy, 4.75@5.25; local pack, 2.50@3.50.

Grapefruit: Local fancy, 2.50@5.00 bx., poorer, 2.50 up.

HONEY

Supplies very light. Estimated the season is half over. Demand and movement good, market firm, little change in prices. Carloads f. o. b. usual terms: White Orange Blossom, mostly 20; White Sage 20; Extra Light Amber Sage 18½@19; Light Amber Sage 17½; Light Amber Alfalfa 15@16 lb. Beeswax: l. c. l. sales mostly 40 lb.

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat .....19.00@20.00
Barley .....16.00@21.00
Alfalfa .....18.00@22.00
Wheat or Barley straw .....9.00@11.00

The Alfalfa Growers of California, Inc., 525 Central Bldg., Los Angeles, furnishes the following quotations on alfalfa hay. Below are its selling prices to carload purchasers f. o. b. cars Los Angeles on the new 1919 crop:

No. 1 dairy .....28.00@29.00
Standard dairy .....25.00@27.00
Standard alfalfa .....23.00@25.00
Stock alfalfa .....21.00@23.00

GRAIN AND FEEDS

Price local grain exchange, August 26:
Milo maize, 2.76@2.80.
Egyptian Corn, 3.25.
Barley, 3.00@3.02½.
Eastern Kafir, 3.72½.
Cotton Seed Meal, 68.00.

San Francisco Markets

San Francisco, September 3, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:
Extras 59
Firsts 57

Prices extras last week and year ago:

Aug.	26	27	28	29	30	Sept. 2
'19 ...	59½	60	61	60½	59	59
'18 ...	53	..	52½	52½	52½	..

Rcts. wk. ending September 2, 3252 centals.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....33@34½
Cal. Y. A. fy. 38
Ore. Triplets 33
Jack, full cream .....27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:
Extras 63½
Firsts 52

Prices extras last week and year ago:

Aug.	26	27	28	29	30	Sept. 2
'19 ...	58½	58½	59	59½	62	63½
'18 ...	59½	..	61	61	62	..

Rcts. wk. ending September 2, 316,110

POULTRY

Hens, W. Leghorns, 28@30; colored, 35@36; roosters, young 33@34; old, 19@21; broilers, 30@34; fryers, 33@34; squabs, 2.50@4.00 dozen; ducks, 25@27; geese, 23@25; broiler turkeys, 40@47.

Belgian hares, live, 15@16; Jackrabbits, 1.50@3.00 doz.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7½; common to thin, 4@5½.

Calves: Light weight, 12½@13½; medium, 11½@12½; heavy, 10½@11½.

Lambs: Yearlings, 10; milk, 12@13.

Sheep: Wethers, 8½@9; ewes, 6½@7.

Hogs—Hard, grain-fed, 100 to 250 lbs., 17; do, 250 to 300 lbs., 16½; do, 300 to 400, 16.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle—Good grass steers, 1000 to 1200 lbs., 10@12½; medium to good grass steers, 950 and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs—Top packer hogs, hard and well finished: 175 to 250 lbs., 18½; 150 to 175 lbs., 18; 250 to 300 lbs., 18; over 300 pounds, 17½; under 150 lbs., 17½. Usual dock and price discount for other weights and kinds.

POTATOES

Potatoes: Per 100 lbs.: River, choice 1.85@2.00; fancy 2.00@2.25; sweet, lb., 5@5½.

ONIONS

Onions: Onions, fancy, 2.00@2.15; choice, 1.85@2.00; Garlic, 21@22½.

VEGETABLES

Wholesale selling price:

Beans: String, 2@3½; Wax, 3@4½; Pole, 2¼@4; Limas, 4@6½; Italian, 3@4½.

Cabbage, doz., 40@55.

Celery, doz., 20@25.

Cucumbers: Large box, 60@75.

Corn, doz., 15@30; sack 1.50@2.25.

Eggplant, southern, fy., 50@65.

Lettuce, doz., 25@35.

Okra, green, lb., 6@8.

Peppers, Bell, lb., 75@1.00; Chili, 7@11.

Peas, lb., 5@6.

Radish, 7@9 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.25@1.50.

Spinach, 75@1.25.

Tomatoes: Sacramento River, 50@75; Bay, 50@90.

Squash: Summer, cr., 50@65; Italian, 50@75 bx.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 6.50@7.00; choice, 5.50@6.00; standards, 4.00@4.50; lemonettes, 4.00@4.50; grapefruit, fancy, 3.00@5.00; choice, 3.00@4.00; oranges, 4.00@4.50.

FRESH FRUITS

Wholesale selling price:

Apples: New crab, 1.25@1.50 for 20-lb. box; Gravensteins, 2.00@3.00 bx.; yellow transparent, 3.00@3.25; Alexanders, 1.75@2.25 bx.

Apricots: 1.25@1.50; loose, lb., 7@8; 130@160 ton.

Bananas, 7@8.

Blackberries: So. 8.00@8.50.

Cantaloupes: Per crate, 75@1.00; pony crate, 50@90; flats, 40@50; Honey Dew and Casabas, 1½ per lb.; 75@1.00 per bx.

Figs, 1.50@2.00 bx.; Brunswick, 75@1.00.

Grapes: Supplies heavy. Demand and movement good, market steady. Sales direct to retailers — 4 basket crates, Thompson Seedless 1.25@1.35; Tokays and Malagas 1.25@1.50.

Loganberries, ch., 8.00@12.00.

Huckleberries, lb., 16@18.

Nectarines, red and white., cr., 1.00@1.25.

Peaches: Supplies heavy. Demand and movement good, market steady, no change in prices. Sales direct to retailers: Bartletts, standard boxes, best 2.75@3.00.

Plums: Cherry, 50@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00@1.25.

Prunes: Fancy German, 1.00@1.50; choice, 2.50@3.00, according to size and weight.

Pineapples, doz., 2.00@5.00.

Raspberries: Ch., 15.00@18.00.

Strawberries: Ch., 14.00.

Watermelons, lb., 1¼.

DRIED FRUITS

The California Prune and Apricot Growers, Inc., announce prices:

Apricots, Sunsweet Quality: Choice 25, extra choice 26, fancy 27, extra fancy 29, Fancy Moorparks 29, extra fancy Moorparks 32. Growers Brand Quality: Choice 24½, extra choice 25½, fancy 26½. First Quality: Standards 19, slabs 21.

Prunes, basis price: 20-30s (flat lb.) 22, 30-40s (basis) 16, 40-50s (basis) 14, 50-60s (basis) 12, 60-70s (basis) 11½, 70-80s (basis) 11, 80-90s (basis) 11, 90-100s 11, 100-120s (flat lb.) 8½, 120s and up (flat lb.) 7½. Growers' Brand ⅛ cent under these prices.

Peach prices for the 1919 crop were announced at Fresno, July 16, by the California Peach Growers Inc. The price list agreed upon by the directors and announced by General Salesmanager Sturtevant, follows:

Effective this date and until further notice, our prices f. o. b. our California factories, on 1919 crop dried peaches for the domestic and foreign trade: September, October, November shipment, sellers' option; guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾; Muirs, 15.
Choice yellows, 15¼; Muirs, 15½.
Fancy yellows, 16½; Muirs, 17½.
Extra fancy yellows, 17¾; Muirs, 18¾.
Slabs yellows, 14½.

For "practically peeled" add 1½ cents per pound (any grade).

Prices above are all bulk basis.

For packing in: 50-pound or 25 kilos boxes add 1 cent per pound.

25-pound or 12½ kilos boxes, add 1¼ cents per pound.

10-pound boxes, add 2 cents per pound.

Blue ribbon peaches packed five-pound cartons, 12 per case, 12.00 per case.

Blue ribbon peaches packed two-pound cartons, 24 per case, 10.00 per case.

Bakers' special, "practically peeled," 16¾ per pound, bulk basis.

Figs: Wh. stand., 16; ch., 18½; ex. ch., 20; fy., 22½.

Apples: Ch. (in 50's), 21; ex. ch., (in 50's), 21½; fy., (in 50's), 23.

Pears: 1919 crop, stand., 20; ch., 22½; ex. ch., 23½; fy., 26.

NUTS

Almonds: The Exchange will make prices about September 10.

Prices named by outside buyers:

Nonpareil, 36, IXL 33, Ne Plus Ultra 32½, Peerless 29, Drake 26, Golden State 25, Languedoc 25, Hard Shell 20.

HOPS

Contracts for 1919 crop, 50@52½ lb.; 1918 crop, 50@55.

RICE

California: Fy., 12.00; ch., 11.75; flour, 4.75; Paddy, 5.00@5.25 per cwt.

These quotations are per 100 lbs. gross weight for double bags of either 100 lbs. or 224 lbs. gross. Prices on mats are per two mats and come packed double mats of 48 lbs. gross each.

BEANS

Shippers quotations f. o. b. California: Bayo 6.50@6.75, Blackeye 5.75@6.00, Cranberry 7.00@7.50, Fava nominal, Garbanzo 11.25@12.00, Lima (f. o. b. So. Cal.) 12.00, Lima Henderson Bush 10.50@11.00, Pink 6.75@7.00, Red Kidney 11.50@12.00, Red Mexican 5.75@6.25, Tepary 3.00@3.50, White, large 7.50@7.75, White, small 7.75@8.00.

HONEY

Offerings light. Demand moderate and improving, market firm. Prices paid to producers. Extracted: Alfalfa Light Amber 14@16; White 16@18; Sage Light Amber 15@17; White 18@20; White Orange 18@20.

GRAIN AND FEEDS

Oats: Red feed, 2.85@2.95; black, 3.00@3.10 per cental.

Corn: California yellow, 3.65@3.75 cwt., Egyptian 3.40@3.50; Milo maize, 3.20@3.25.

Rye, 3.15@3.30.

Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of August 30, Scott, Wagner & Miller says:

Receipts past week 3459 tons. Thu notwithstanding the railroad strike which practically stopped the movement of all cars to this city for a short time, the receipts are somewhat higher than last week, but this is occasioned by the extra receipt of hay by boat from the bay and river districts which has been exceedingly heavy and no doubt will continue that way for some time to come as boats are available. Most of the hay arriving has been red oat from the reclaimed districts and alfalfa from the river districts. Although this hay moved off fairly well, demand has not been as brisk as it was. Third cutting alfalfa is now being marketed from the river and is as a rule of a very fine quality and sells well.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the Hay Market—for prices to consumer, charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay (light 5-wire bales) .....17.50@19.00
No. 1 Wheat or Wheat and Oat Hay .....15.00@18.0
No. 2 Wheat or Wheat and Oat Hay .....12.00@15.00
Choice Tame Oat Hay .....15.00@18.00
Other Tame Oat Hay .....12.00@15.00
Wild Oat Hay .....10.00@14.00
Barley Hay .....12.00@16.0
Alfalfa Hay .....17.00@22.00
Stock Hay .....8.00@12.0
No. 1 Barley Straw, bale.....50@80

Citrus Markets

Los Angeles, September 4, 1919

The railroad strike cut off new shipments and resulted in cleaning up all Valencias on hand in Eastern cities. Especially good prices were received in New York and Boston markets. Growers anticipate higher prices for the new fruit which is now going forward. About 4 cars of Valencias were packed and loaded when the strike began on the electric lines and these were hurried forward on steamlines or stored in pre-cooling plants to await the end of the disturbance. Eastern markets have already advanced $1.00 per box nearly all along the line. Late dispatches show the market advancing on both oranges and lemons, especially in New York and Boston.

Lemon shipments are very light, as is also the demand in Eastern centers. A few f. o. b. California sales are being made for ocean shipment up coast. Fifty-five thousand boxes of forcign lemons are received in Eastern ports and will soon be put on the market.

Shipments

Shipments of citrus fruits to date since November 1, 1918; Southern California Oranges, 30,921 cars, lemons 8787, total 39,708. To same date last season: oranges, 13,331, lemons 5296, total 18,627. Central California this season: oranges 4427, lemons 354, total 4781. To same date last season: oranges, 2539, lemons 115, total 2654. Northern California oranges, 244, lemons 2, total 246. Last year same date: oranges, 203.

AT THE AUCTIONS

September 2

New York: 25 Val., 1 grapefruit, 1 mixed, 1 lem. Val. 2.85-6.60, lem. 4.85-6.60, grapefruit 1.85-3.75.

St. Louis: 1 or., 2 lem. Val. 4.00-4.1 lem. 1.35-2.85.

September 3

New York: 12 Val. 2.65-6.65.

Boston: 6 Val. 1 lem. Val. 3.40-5.15.

Cleveland: 3 or., 2 lem. Val. 2.90-4.8 lem. 3.85-5.30.

Philadelphia: 6 Val. 2.65-6.00.

Pittsburg: 5 Val., 1 lem. Val. 1.6 5.60, lem. 1.50-4.15.

St. Louis: 1 Val., 1 lem. Val. 2.55-4.3 lem. 2.50-2.55.

Cincinnati: 2 or., 2 lem. Val. 2.25-3.8 lem. 1.60-3.45.

Pittsburg: 2 or., 1 lem. Val. 3.90-4.1

Teague's Thorobred
Citrus Trees
Are especially Grown for Planters desiring the Best. If better trees could be grown we would grow them. May we have your order?
The R. M. Teague Citrus Nurseries
San Dimas, California
Founded in 1889

Eggo-O-Latum Keeps Eggs One Year
It costs only one cent per dozen eggs to use Egg-o-latum. There is no other expense. Eggs are kept in carton or box in cellar. Eggs may be boiled, poached or used in any other way just like fresh eggs. Simply rubbed on the eggs a dozen per minute. A 50c jar is sufficient for 3 dozen eggs. At Drug, Seed and Poultry Supply Stores or postpaid.
GEO. H. LEE CO., Dept. 418. OMAHA, NEB.

It takes Brains to recognize a Good Tractor

WHEN you build a tractor to be sold on the basis of the service it gives, it has got to be sold to a man of brains.

Appearances speak for themselves.

Anybody can tell what a Tractor looks like—whether it has three wheels or four, whether the engine is upright or horizontal, whether its gears are enclosed or at the mercy of sand or gravel.

But it takes brains to get at the facts—to look into tractors instead of merely at them.

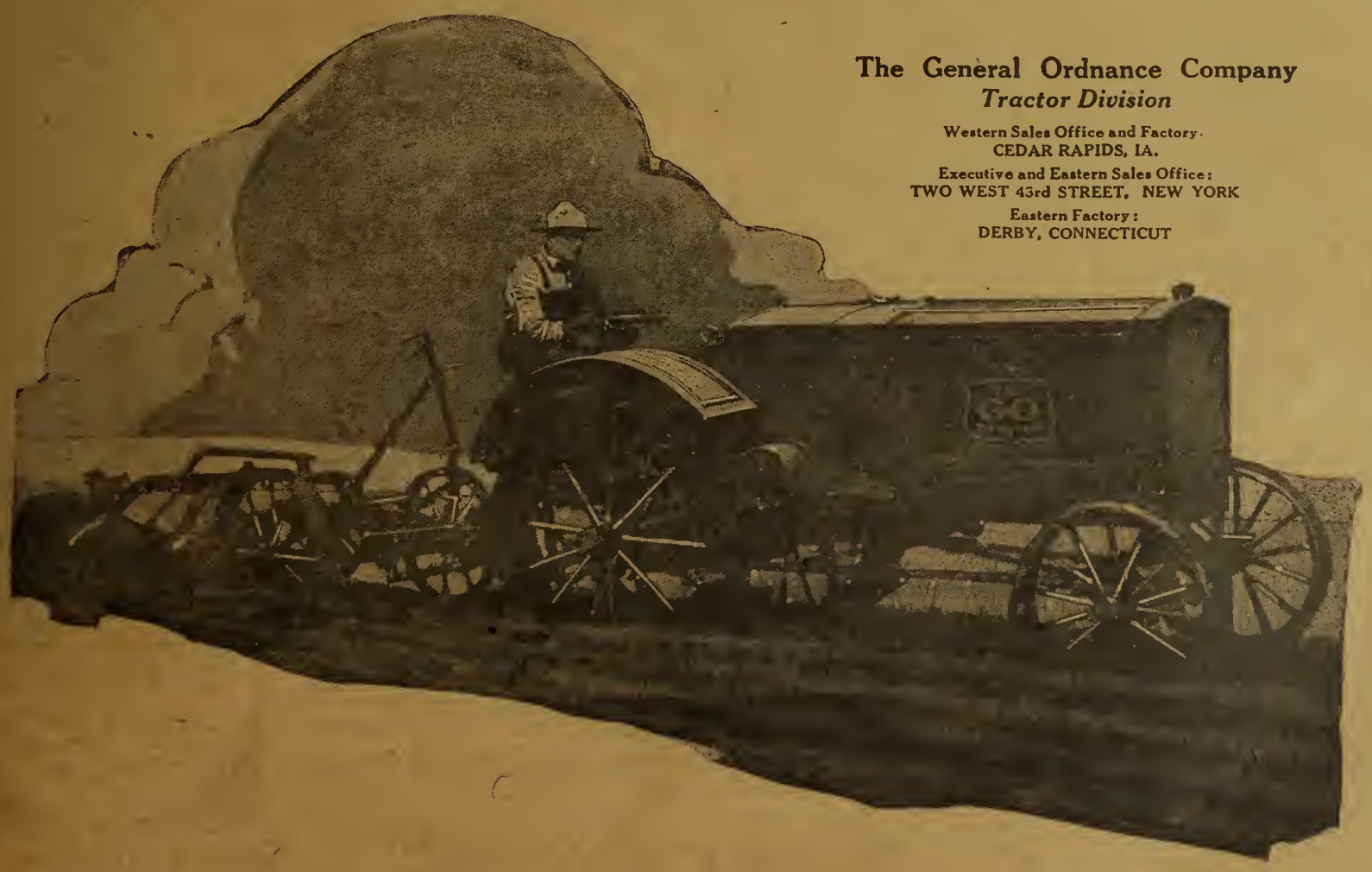
More and more, the farmers of this country are looking for the facts which determine the serviceability, economy and long life of a tractor.

And they are finding them in the G O type of tractor—the four-wheel, four-cylinder type, towards which the whole industry is tending. There are no tracks or sprockets in the G O Tractor to become filled with sand or to use up power in overcoming friction.

They are finding them in the G O driving mechanism—an exclusive feature which cannot be duplicated or imitated. With the G O friction drive, there is no possibility of stripping gears, because they are always in mesh. The speed of the tractor can be changed while in motion. It can be adjusted to any kind of work either in the field or at the belt—there are six speeds forward and six reverse.

They are finding them in the G O construction—so simple that anyone can keep it running strong and true. Every part is accessible. Every gear is enclosed in dust-proof casings—runs in oil. The driving wheels are independently controlled, making it easy to turn short, plow close to corners or pull out of any hole.

The man of brains, who is looking for more facts—for facts about the company behind the G O Tractor, its resources, its guarantee, and its idea of tractor service—can get them without obligation by addressing any of the offices below.



The General Ordnance Company
Tractor Division

Western Sales Office and Factory.
CEDAR RAPIDS, IA.

Executive and Eastern Sales Office:
TWO WEST 43rd STREET, NEW YORK

Eastern Factory:
DERBY, CONNECTICUT

The Winchester Pattern. 320 pellets out of a possible 431, or 74% of the shot charge, evenly distributed; no birds get through

How big a bag will *you* bring back?

THE difference between a bulging bag and a lean one is often a question of gun and shells and not of shooting skill.

Make sure you have the right game-getting combination—shells that kill when the aim is true, and a gun that enables the shell to make its best pattern.

Good shell patterns are either *allowed* or *prevented* by the character of the gun barrel—the chamber, bore and choke.

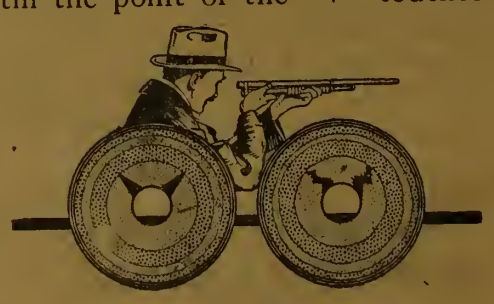
Faulty chambering even more than faulty choking tends to mash and "ball" the shot, making pellets fall short or fly wide.

And if a gun is faulty in its most vital part, the chamber, the chances are that the bore is also carelessly made.

From chamber to choke, the barrels of the famous Winchester Repeaters are bored to make the shell throw its highest pattern. They are free from shot-jamming defects. They let the shell do its full work.

"Line" test the barrel

Point a Winchester barrel toward the light and look through the bore. It looks like a highly polished mirror. Not a false shadow throughout the bore. Sight through the bore at a horizontal black line on the window. This line will throw a "V" shadow in the bore. Tilt the barrel till the point of the "V" touches the muzzle. The perfect "V" shows absence of irregularities.



The "Line" test

Perfect bore of Winchester barrel revealed under "Line" test.

Irregularities revealed in inferior shotgun barrel under "Line" test.

This is the "Line" test of a perfect bore. No faulty barrel can pass this test—the "V" will be distorted.

What (WP) means

This mark on a Winchester barrel means that the gun has passed the "Winchester Provisional and Definitive Proof" test, having been fired many times for smooth action and accuracy, and strength-tested by firing 25 to 40 per cent excess loads. This stamp stands for Winchester's guarantee of quality, with 50 years of the best gun-making reputation behind it.

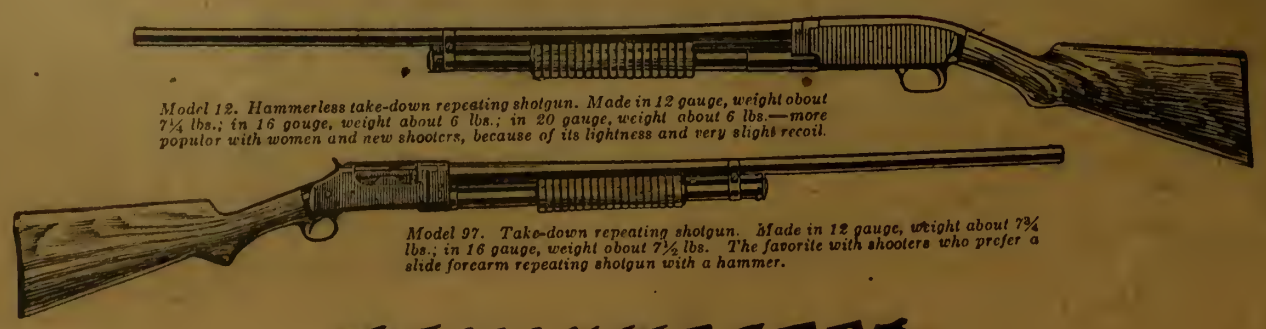
Your dealer will show you Winchester Guns and Ammunition

Before you take to the woods this Fall, get your dealer to show you a Winchester Repeater—Model 97 for hammer action; Model 12 for hammerless. Put one to your shoulder, try its balance, see how beautifully it handles. Your sportsman's instinct will tell you it's the best weapon you could choose. Leading hardware and sporting goods dealers in every community carry Winchester Arms and Ammunition. They will be glad to assist you in selecting the gun best suited to your needs. Upon request, we will mail you, free of charge, the complete catalog of Winchester guns and loaded shells.

WINCHESTER REPEATING ARMS CO.
Dept. 107 New Haven Conn., U. S. A.

Important Notice

The chamber, bore and muzzle choke of all Winchester Shotguns are *reamed* to micrometer measurements for the particular Winchester Shells they are meant to shoot. You will get the highest and most uniform pattern results by shooting Winchester shells in Winchester guns. The two are made for each other.



Model 12. Hammerless take-down repeating shotgun. Made in 12 gauge, weight about 7¼ lbs.; in 16 gauge, weight about 6 lbs.; in 20 gauge, weight about 6 lbs.—more popular with women and new shooters, because of its lightness and very slight recoil.

Model 97. Take-down repeating shotgun. Made in 12 gauge, weight about 7¾ lbs.; in 16 gauge, weight about 7½ lbs. The favorite with shooters who prefer a slide forearm repeating shotgun with a hammer.

WINCHESTER

World Standard Guns and Ammunition

C A

SEP 18 1919

CALIFORNIA CULTIVATOR

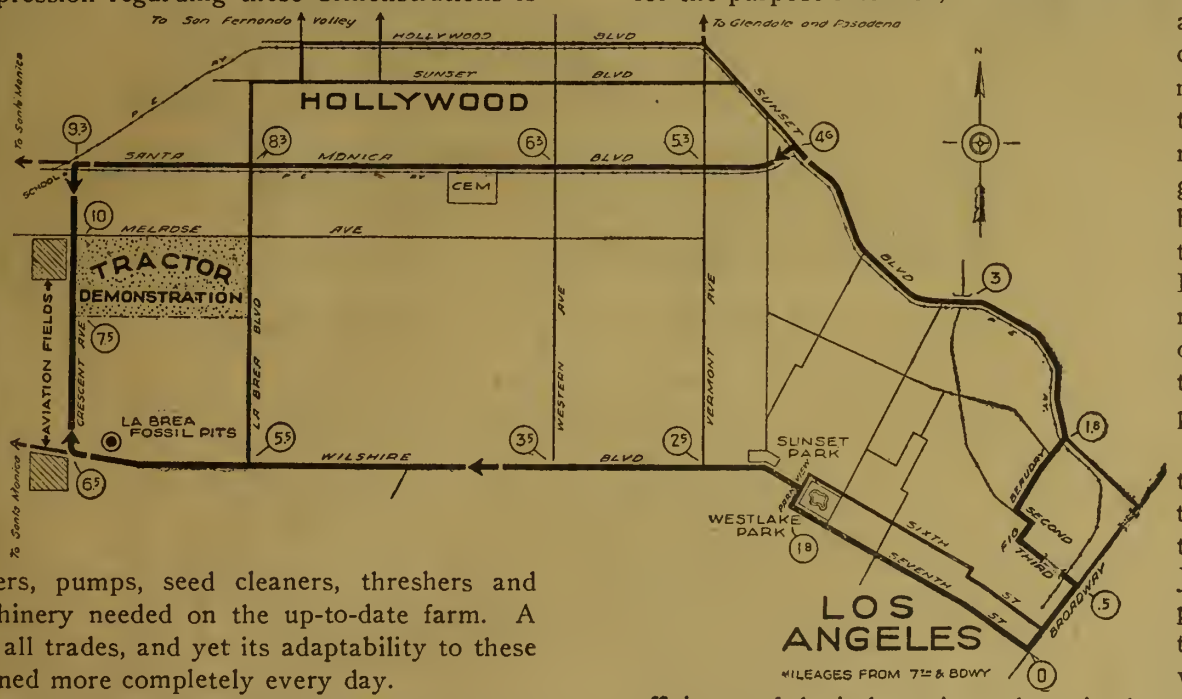
and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — September 13, 1919 — No. 11

Tractor Demonstration at LaBrea Field, Los Angeles

EFFICIENT farm equipment, or world's progress toward better farming, will be given fullest demonstration at the Fourth Annual Demonstration of the Traction Engine and Implement Dealers' Association of Southern California at La Brea Field near Los Angeles next week. The demonstration opens on Tuesday morning, September 16, and continues until and including the 21st. Every farmer who would make his place produce to the limit, whether he is yet in a position to give it complete equipment or not, should take advantage of this opportunity and be informed of the latest in implements and power. We say in implements, for perhaps the general impression regarding these demonstrations is that they are tractor demonstrations. They are that and much more, for, anxious to show the adaptability of their tractors to all problems confronting the farmer, the tractor people have secured fullest cooperation on the part of manufacturers of plows, harrows, disks, subsoilers, and, more than ever, are also showing the tractor's adaptability as a power for running silage cutters, pumps, seed cleaners, threshers and elevators or other machinery needed on the up-to-date farm. A tractor is not a Jack of all trades, and yet its adaptability to these many uses is being learned more completely every day.



Speaking at the recent National at Wichita, Kansas, Governor Allen of that state said: "The most important peace which can be brought about in the world today will be that which comes from the marvelously productive period we are now bringing about by power farming."

One of the evils of present farming the governor said, is absentee landlordism. Farming in his opinion should be done by the men who live on the farms. The world needs a larger number of farms. Men will fight for the farms upon which they live, but won't fight for their boarding houses. The fact that France is largely divided into small farms upon which their owners live was credited by Governor Allen with the downfall of German propaganda, and the governor through two years of Red Cross and Y. M. C. A. work in France had opportunities for reaching such conclusions.

Many a farmer will go to the demonstration with this one question: "Now, which is the tractor I want for my problem in hand?" But that is a question that will not receive definite and positive answer other than through the farmer's own observations, with the knowledge of his own problems. In general he will learn that the tractor can be made to plow and disk when the ground is soft and do the same work in the summer when the ground is hard. It must operate a great variety of belt machinery, and working out these various problems is highly important.

Demonstrations of power for orchard and field use have convinced farmers generally that tractors are practical. The demonstrations, however, do not conclusively prove that tractors are a success in every case with every farmer. It takes work, week in and week out, in the hands of farmers to determine this.

A large Eastern manufacturer recently remarked "The sooner we realize that we must make an absolutely dependable machine for the purpose intended, the sooner we will have served ourselves and those who purchase them." Fortunately the realization of this problem before the manufacturer has been general, and we do not believe there will be a tractor displayed on La Brea field which has not had the honest endeavor of its manufacturer behind every piece of metal in it.

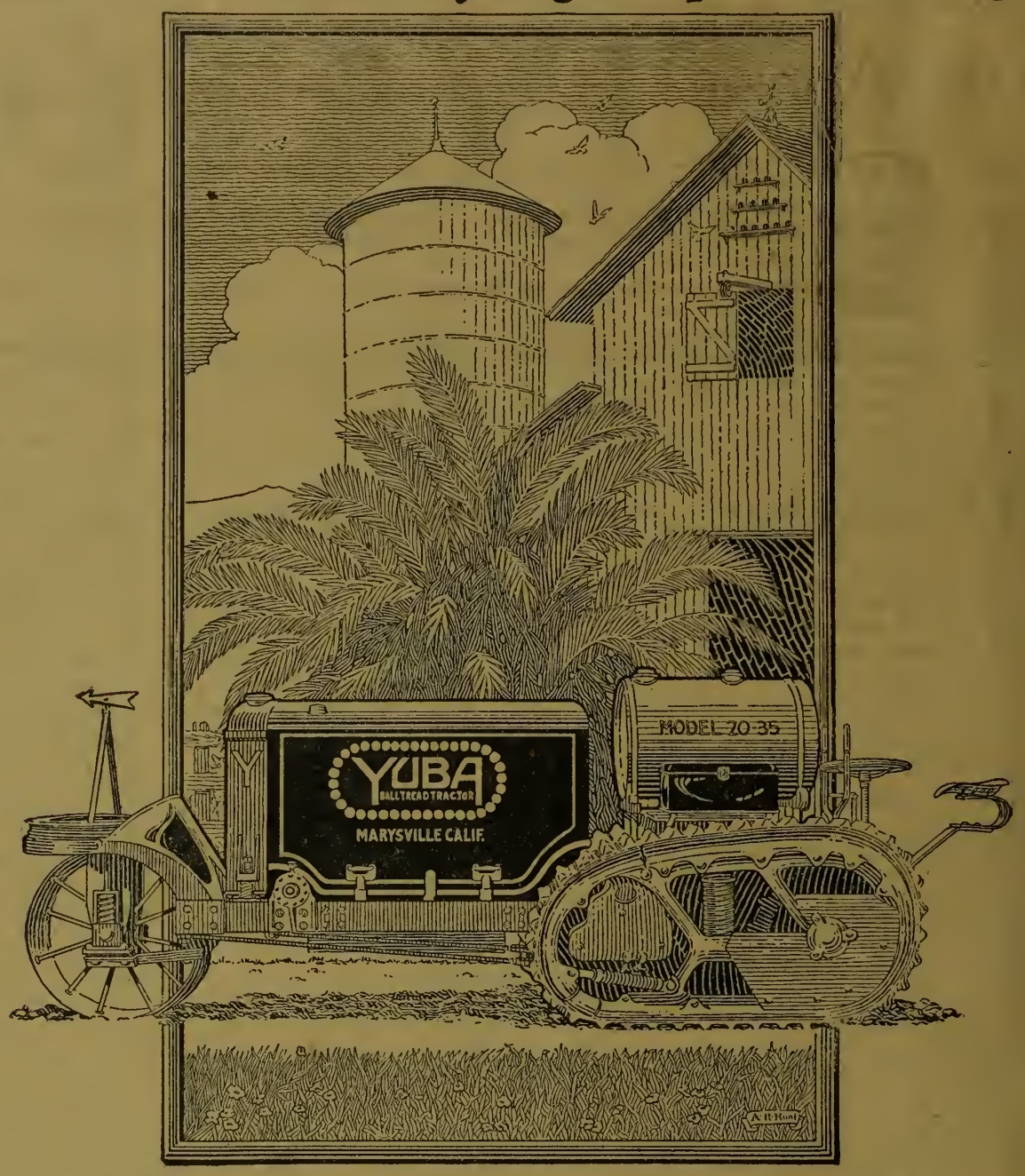
Commenting on getting the most out of tractor demonstrations the Chilton Tractor Journal says: "The primary purpose of tractor demonstrations was to establish the efficiency of the industry's products in the minds of the farmers for whom, of course, they were designed. They have done much to popularize tractors and pave the way for individual sales effort on the part of the individual companies.

"In the earlier days the farmer wanted to know that tractors would work. That they will work is now an established fact with him. What concerns him more now is which tractors will do the work best and whether they will stand up under the gruelling test of long hours of service."

The map shown on this page indicates how to find the demonstration field. From the center of Los Angeles there are two routes via: Sixth or Seventh from Broadway, out Wilshire Boulevard to Crescent Avenue, thence to the right to the big tents. The other route is through the Broadway tunnel, left on Sunset and Santa Monica Boulevards to Crescent. Turn to the left. This map is used by courtesy of the Automobile Club of Southern California.

Officers of the Traction Engine and Implement Dealers' Association of Southern California are: President, H. L. Marsh; Vice President, R. B. Dunsmore; Treasurer, J. B. Graves; Secretary-Manager, R. M. O'Neill. The directors are Messrs. H. L. Marsh. R. B. Dunsmore, A. W. Hudson, J. A. Hymer, M. Schartzman.

THE YUBA—*the tractor of highest price and highest quality*



The reasons for the price are in the tractor

—In the materials used—alloy steels wherever the life of a part may be prolonged; wherever strength may be increased; wherever the bulk may be reduced.

—In the workmanship—the degree of skill in machining the vital parts; the precision by which smooth-working is assured; the infinite care given minute details.

—In the *ball tread* principle, proved by five years' experience to be unequalled in delivering to the draw-bar the maximum percentage of motor power.

The high price is your guaranty against breakdown, loss of valuable time, big repair bills, annoyance; it insures getting your work done as you want it—and when you want it!

"The YUBA price is the right price for YUBA value!"

There are three sizes of YUBA Ball Tread Tractors: 12-20, 20-35, 40-70
Write us for the catalogue of the size you need; tell us how many acres you farm and the kind of soil

Ready for Immediate Delivery

Yuba Manufacturing Company

Marysville California

A. F. GEORGE COMPANY, Yuba Dealer

200 No. Los Angeles Street - - Los Angeles, Cal.

California Cultivator

Vol. LIII, No. 11 | Los Angeles, September 13, 1919 | One Dollar Yearly

Fourth Annual Tractor Demonstration

A Glimpse at Implements and Tractors in Miniature

From top down:—Delco Light exhibit near educational building. Next is the Rotary Grain Cleaner which was constantly in operation. Madewell pipe, true to name. One of the newer introductions, the Four Drive Tractor. Yuba, an old time favorite. Lauson, the "Pattern Tractor", more like the real thing. Dreaming of the trenches on the steps of the Caterpillar. Averys, a whole battery of them. The Monarch looks strong enough to rule.

THE TENTS are pitched; the last stake is set; even the exhibits are placed for the great Los Angeles tractor demonstration September 16-21. The grounds selected are on the Rancho La Brea west of Los Angeles, at the corner of Crescent and Melrose Avenues.

There has been a slight change in plans over those followed in preceding years, in this, that there will be no public contest, or general try-out, of all the tractors, during the afternoon. There will be demonstrations of the power of the tractors, of their efficiency and of the ability of the farming implements to handle the soil, but these will be conducted by each exhibitor as he prefers or, rather, we are assured, will be conducted by the exhibitor for the prospective buyer as he prefers. The tractor people are saying to the possible buyer: "Come on and state your problems, and we will show you how efficiency and economy are secured."

There are many other reasons why the rancher should take the necessary time to attend this fourth annual demonstration of power farming, for example:

One of the most attractive exhibits ever offered the rancher, of trucks, trailers, magnetos, spark plugs, piston rings, lubricating oils, in fact every accessory that can be used on tractor, truck or automobile, will be shown under a tent 100 feet by 350 feet in length. This exhibit in itself is an education to a great many of the visitors, and one could spend at least two days inspecting it to a great advantage.

Manager R. M. O'Neill states that reports already received from nearly every section of Southern California, and in several instances from points farther north, indicate an attendance at the approaching meet far in excess of that of any previous year.

The educational features of these annual demonstrations undoubtedly are responsible for the increasing interest shown each year by both dealers and consumers. The former recognize them as opportunities for coming in direct contact with the prospective user and in numbers not possible in any other manner; the latter as occasions for determining the tractor, implement and accessory best adapted to his needs.

The entire week will be full of interest to visitors, as every conceivable type of farm machinery will be seen in operation, including tractors, hay balers, feed cutters, threshers, separators and harvesters.

Of the exhibitors the A. F. George Company will show the following:

Yuba tractors in sizes 12-20, 20-35 and 40-70; John Deere tractor moldboard and disc plows; John Deere tractor disc harrows; John Deere packers and pulverizers, manure spreaders, corn binders, ensilage cutters operated by tractor, hay press operated by tractor, feed mill also operated by tractor and many small tools will be included in this exhibit.

The Los Angeles Auto Tractor Company will exhibit the Little Bear tractor especially adapted for orchard and small ranch work.

Fageol Truck and Tractor Company will exhibit their line of trucks and their latest improved model tractor with walking wheel.

The Electric Wheel Company of Quincy, Illinois, L. M. Railsback, Los Angeles representative, will demonstrate its latest model, a specially built California orchard tractor known as the Allwork 2nd.

Arnott & Company's exhibit will include Superior grain drills, Sanders disc plows, Imperial peg, disc spring tooth harrows and plows, Walter A. Woods harvesting and tillage tools, Farquahar bean and grain threshers, American bean threshers, the Iron Age line manufactured by the American Bateman Manufacturing Company and the McKay disc plow. This will be the first demonstration of this implement on the Pacific Coast.

The Washburn Bros. will demonstrate the Sandusky tractor. Model D 10-20 and the Model E 15-35.

Community Manufacturing Company, which is composed of local business men having a plant in West Alhambra, will offer for the first time at any tractor demonstration the Allen Model A 10-20 tractor. This tractor is suitable for orchards and ranches of small acreage.

The Smith Bros. will demonstrate the 12-20 Cleveland track type.

Douglas Boswell Company will demonstrate the J. I. Case Plow Company Wallis Cub 32-50 and the Wallis Cub Jr. 18-30; also a full and complete line of J. I. Case Plow Works implements.

Education in tractors can be obtained in many ways. The most thorough way is by visiting these annual demonstrations where one can make so many favorable comparisons, as every tractor of standing on the Pacific Coast can be seen on the same field, also a most complete line of power farming machinery.

A great many ranchers have held off placing orders for tractors and implements that are actually needed on the farm in hopes that prices will tumble, but such is not the case; if anything, they will go up, as that is the tone of the metal market today.

Other exhibitors will be the Bean Spray Pump Company, who will exhibit the Bean TrackPULL orchard tractor, and a complete line of spray pumps. California Moline Plow Company will have on exhibit six Universal tractors equipped with grain drill, corn binder, power lift disc harrow, power lift gang plow, both disc and moldboard, and a tractor mower. The Knapp Tractor and Machinery Company will show for the first time in Southern California demonstrations of the La Crosse tractors in two sizes, 6-12 and 12-24, also a complete line of implements. Oliver Chilled Plow Company will have on exhibit a full line of Oliver implements. Union Tool Company will show their Sure Grip 12-25. Frank O. Rellstrom Company will exhibit for the first time the Twin City tractor.

There will also be one of the most interesting and complete exhibits of accessories for tractors, trucks and autos ever assembled under one tent, including an excellent exhibit of trucks, pumps, irrigation machinery, and all kinds of household necessities; in fact, everything one can use.

State Fair in its Commercial Aspects

By M. C. Holman

WHATEVER may be said concerning the state fair as the centralization of agricultural and horticultural perfection may also be said for its commercial features. We keenly admire the gems of the garden and the field; we revel in the perfection of the fruits of the orchards; we delight in the handiwork from the schools and the homes and we marvel in the selections from the pens and the corrals. But let us not, in our anxiety to praise the works of nature and the development through man's ingenuity, forget that the achievements of machinery measure well forward in our category of pleasurable sights at the state fair.

We are sometimes given to thinking that the exhibits represent but a form of advertising; that the manufacturers are simply pushing their wares to their own advantage. But let us not forget that advertising always tends to bring out the best; it shows improvements that make for better living and more comforts, and whether the advertising is done through publications of general circulation, such as the Cultivator, or whether it is done by means of displays, such as those at fairs, the one chief end is achieved, that of bringing to light something that was before unknown. And so, we can look with pleasurable interest upon the store, the factory and the shop side of the state fair, for therein will be found exhibits of extreme utility.

As we pass through the gates we are at once impressed with the intense interest of the surroundings. Flags are everywhere; tents are spread in profusion; crowds are surging in and out of the buildings; sailors and soldiers are drilling on the big

Continued on Page 338

Agricultural News Notes of the Pacific Coast

Northern California

Calaveras County reports several destructive forest fires.

California Almond Growers Exchange now has 3000 members.

Hopland Ranch is sending 2000 year old White Leghorn hens to Kembo Farm, Hawaii.

Red spider is causing much damage to walnut trees around Sonora, Tuolumne County.

A cow testing association has been organized by dairymen of Sonoma and Marin Counties.

The Nevada County farm bureau held a live stock auction at Limekiln Ranch on September 2.

El Dorado County pear growers are getting very satisfactory returns from Eastern sales of Bartletts.

Orland is busy getting the fair grounds in readiness for the Glenn County Fair, which opens September 22.

Two big De Haviland bombing planes will be used in the national forest fire protection service in Shasta County.

The junior agricultural clubs of the El Dorado County farm bureau will hold a two day fair at Placerville in October.

The Chico district of Butte County claims 17 per cent of the membership of the California Almond Growers Exchange.

Wheatland farm center, Yuba County, will be host to farm centers throughout the county at a big picnic to be given September 20

Gravenstein packing is practically completed in Sonoma County. In the beginning of the season growers were receiving around $2.25 net per box.

The Nevada County farm bureau will hold local meetings at Gold Hill, September 15; Weimar, 17; Long Valley, 19; Roseville, 22; Colfax, 24; Mt. Vernon, 27.

The most unusual run of salmon in seven years in the Klamath River occurred near Requa last week. Fishermen swamped the canneries with salmon. Many fish were placed on local market.

The members of the Alameda County farm bureau are petitioning the board of supervisors for funds sufficient to secure the services of an assistant adviser and home demonstration agent.

The Capay Stock Company of Dixon, Solano County, has about completed a modern lambing barn 200x80 feet, with cribs and pens from 15 to 20 feet wide. A silo is now being built and will be filled with Indian corn.

Rice growers and others of Butte County are objecting to the ordinance passed by the board of supervisors limiting the load which a motor truck may haul over county roads to 12,000 pounds gross. The ordinance goes into effect October 1.

Poultry growers of the district about Hayward, Alameda County, organized a poultry club August 22, electing A. J. Hoffman of San Leandro, president; W. D. Froeman, Castro Valley, vice president; F. A. Holston, Castro Valley, 2nd vice president; Mrs. W. D. McCord, Hayward, secretary-treasurer. Tho next meeting will be held September 16.

Central California

Tulare is planning for a county fair in the fall.

Montèrey County will hold its fair October 10-11.

Ceres hopes soon to have a big jam factory located there.

Mustard crops of the Salinas Valley are showing heavy yield.

Pajaro Valley shippers of apples are getting the best of prices.

A squirrel campaign has been started at Kerman, Fresno County.

Prices for grapes in the Hanford section range from $25 to $32.50.

San Joaquin County will hold its fair at Stockton, October 7-11.

Petitions for the formation of the accepted by the board of supervisors.

The new plant at Turlock for curing sweet potatoes is nearly ready for use.

The market for cantaloupes and watermelons has not been so good recently.

Kerman peach growers are delivering peaches to the packing house at Biola.

The Lindsay branch of the California Associated Olive Growers met August 30.

The sugar factory at Spreckels, Monterey County, began slicing beets September 8.

Poland-China men are planning for a big sale to be pulled off at Lodi, September 19.

Alex. Rousseau, San Rafael, has been appointed cow tester of the Stanislaus association.

The big new packing plant of the California Peach Growers Inc. at Hanford is nearly ready for operation.

The annual meeting of the California Associated Olive Growers was held at San Francisco September 3.

Live stock men and others held a meeting at Modesto August 26 to discuss ways and means of securing fair grounds for Modesto.

Ladybirds from Tuolumne are being sold to bean growers of Stanislaus County for release in their bean fields to destroy the black aphis.

The first annual district fair held by the Patterson Fair Association was a great success. Live stock exhibits were the big feature of the fair.

During July the Tulare Cooperative Poultry Association showed receipts of $11,000 for eggs, a total of $24,045.81 for all poultry products sold.

At the hog auction at Tegner last week 181 hogs were disposed of at prices ranging from $18.25 to $19.50. The sale netted the owners $7,197.05.

The bean growers of Stanislaus County have received a stock of lady birds from the state insectary. These were collected in Tuolumne County and will be used in the bean fields to keep down the aphis.

A mass meeting of shippers and growers was held at the Turlock high school August 15 to discuss the employing of a pathologist and establishing an experimental farm in Turlock, the work to be financed by growers interested.

Membership in the San Joaquin Valley Milk Producers' Association now requires minimum membership fee of $5 instead of the former $50. This change is made to allow owners of one cow to onter the association.

Southern California

Ventura holds its county fair September 24-27.

The Covina Citrus Association will fumigate 1200 acres for members.

Cotton seed, it is announced, will sell in Blythe this year for $57 a ton.

Reports that the sugar factory at Chino would operate this season are denied.

The peach canning season is at its height in the Pomona district. Tomatoes will come next.

The marmalade factory at San Dimas closed down several days owing to the railroad strike.

Charles Shiels of San Jacinto has been appointed Riverside County sealer of weights and measures.

The Whittier Walnut Growers Association has erected a modern packing plant on the state highway east of Whittier.

The Claremont Citrus Association received a total of over half a million dollars for 417 cars of fruit shipped the past year.

The La Verne Fruit Exchange has been organized with B. A. Woodford as president and D. G. Arbuthnot, secretary-manager.

Ventura County beans are said to average up well with beans in other districts. The yield throughout the state is spotted.

Several machine loads of farmers from the Apple Valley farm center attended the live stock meeting at Chino last week.

The Santa Barbara Walnut Growers Association reports many applications by pickers for jobs in the harvest which will soon begin.

Plans to divert water from Lake Elsinore for irrigating Orange County lands are being strenuously opposed by residents of Elsinore.

Sale of $800,000 worth of bonds to complete the Palo-Verde irrigation system to the county line has been approved by the levee board.

Ranchers living west of Blythe, Riverside County, are protesting against frequent flooding of roads which they say is the fault of the water company.

The Traction Engine and Implement Dealers of Southern California will hold its big demonstration September 16 to 21 on the Rancho La Brea, west of Los Angeles.

The value of the pre-cooling plants has been amply demonstrated during the recent strike, when hundreds of cars of packed fruit were saved which in other years would have been seriously damaged.

Floyd Hatfield, working with fumigation gang in Anaheim, Orange County, was killed by an explosion of hydrocyanic acid as he was withdrawing from the tank a supply for use under fumigation tents. The young man had just returned from two years' service in France.

Hemet canneries are planning to secure some outside fruit to supplement the local supply in order to keep their plants running throughout the season.

State fruit inspectors are warning dealers to secure from ranchers certificate guaranteeing fruit to be up to standard; otherwise the dealer will be liable for violating the standardization law.

The Coast and General

Alfalfa seed threshing is in full swing in the Yuma Valley of Arizona.

The fall round-ups are beginning in Cochise and Santa Cruz Counties, Arizona.

Olive experts predict that this year's crop of olives in the Salt River Valley of Arizona will be larger than ever before.

Early Baart wheat on the Salt River Valley experimental farm at Mesa, Arizona, yielded this year 64 bushels per acre.

Recent storms in the Salt River Valley of Arizona, it is believed, have damaged the cotton crop from $400,000 to $500,000.

Pineapple growers of Florida have organized an association. One of the first activities will be to carry on experiments to determine, if possible, the cause of pineapple wilt.

The Arizona live stock sanitary board is advocating a wire fence along the international line between Arizona and Mexico. It is believed that such a fence would have a tendency to check some of the cattle rustling which is becoming a serious matter.

Ranges are poor in the central plains states, the Northwest and the Pacific Coast states and arrangements are being made to ship in cattle from some of these districts to the Arizona ranges. It is too early to say what proportions this movement will assume.

A new $300,000 gin plant has just been built in Phoenix and is ready to begin operations. It is believed that the ginning capacity in the Salt River Valley of Arizona will this year be sufficient to take care of the increased crop without much delay to the growers.

A cooperative prune dryer to care for the prune crop of Clarke County, Washington, will be constructed by the growers at Vancouver at a cost of $50,000. There are approximately 5000 acres of bearing prunes in the county, and it is expected that the owners of at least 98 per cent of these will become affiliated with the association.

A favorable report has been made for the construction of a dam on the Hassayampa River, Arizona, to irrigate about 20,000 acres of land west of Hot Springs Junction. This dam will be on the site of the old Walnut Grove dam, an earth and stone structure which went out in a flood in February, 1890. A concrete dam is proposed which will be permanent.

Government control of Egyptian cotton in Egypt has ceased and the price has advanced about $100 per bale, according to advices from the American consul at Alexandria, Egypt as reported by the United States bureau of markets. The shipments of Egyptian cotton in the United States during 1918 have been 82,000,000 Egyptian bales, averaging 750 pounds each

The Arizona state tax commission has just mado some estimates of the population of the state by counties These ostimates are made by using the school census as a basis, multiplying the figures by the samo ratio as the school census of 1910 bore to the census figuros of the population. This shows the state to havo a population of 389.751. Maricopa County leads with 84,519

Live Stock at the State Fair

By R. P. Royce

WHEN judged from any angle the show of live stock at the 1919 California state fair furnished high satisfaction to the live stock interests of this state and indicated in very forceful manner the progress being made with all breeds. In point of numbers the entries broke few records but the quality that prevailed down the entire line was of greater average excellence than any former exhibit at Sacramento.

Every One a Champion

In the dairy row, just a glimpse at some of the stock of which Van Pelt said "I have attended fairs and stock shows from the Atlantic to the Pacific and judged in many a state but never saw a finer exhibit of better quality stuff than you have here in your own state fair." Reading from top down they are:

1—Imp. Holehouse Secretary, grand champion Ayrshire bull owned by J. Henry Meyer. 2—Highland Itham, grand champion Ayrshire cow owned by J. Henry Meyer. 3—King Segis Alcartra Prilly, grand champion Holstein bull owned by Bridgford Holstein Company. 4—Empress Pontiac Prilly, grand champion Holstein female owned by Bridgford Holstein Co. 5—May King of Fernridge, grand champion Guernsey bull owned by Elliott-Brant Rancho.

While the rail strike in Southeru California kept a number of good herds away; by far the majority of exhibitors occupied the stails and pens they had reserved.

As soon as the directors of the state fair decided there would be no postponement plans were shaped to take care of late arrivals by delaying the judging until such a time as they could reach the show. The fine spirit manifested by the exhibitors who arrived early in agreeing to wait for more competition resulted in bringing together a live stock exhibit that the state can well be proud of.

Exhibits from the strike area came by truck, boat and express.

The show was well balanced throughout and it would be difficult to claim that any one breed made the outstanding display. As a whole, it can be stated as a fact that the entries were the best fitted yet seen at Sacramento. Each year marked improvement is noted and exhibitors are coming to the show with more uniform herds and flocks and the difference between the top and bottom of the classes is not so noticeable as a few years back.

The judging this year was done by men of national reputation and their ratings met with more general satisfaction than this state is accustomed to. Each of the judges admitted their surprise at the quality of the show and predicted that the natural conditions of this state were such as to assure that California is destined to become one of the first live stock states. California breeders are just beginning to realize that they are operating under conditions that are more favorable to production than are found in any other section and they are taking courage and improving and strengthening their breeding herds with a determination that will mean much in the future. The attitude of state fair visitors is changing too. Few come out of curiosity. They come to learn and investigate the various herds and to buy. During the judging the ringsides were crowded with interested spectators and a continuous stream of visitors were in the barns.

Now is the time for California to anticipate the future from a live stock standpoint and to prepare. Granted that this state has a wonderful future, and keeping in mind the rapid growth of the live stock industry of the past few years, it is not too early to plan for additional equipment for housing and judging. The fair board has prepared plans for improving the grounds but a large amount of money will be required and it will be largely up to the live stock men of this state as to how soon the necessary money is made available.

Another important development that is certain to demand attention is the question of fitting the state fair to a schedule including the Los Angeles and San Francisco shows. In the event that those shows become permanent, the state fair will either have to be set for a later date or the new shows will need to be held earlier if the most is to be made of all three. With as much time intervening as exists at present, either the state fair or the others will suffer. Exhibitors will not fit for an early show, ship home and attempt to make the later dates. As to what time would be best for all is a problem to which great consideration should be given without prejudice.

* * *

THE BEEF CATTLE

By R. P. Royce

The show of beef cattle, while not up to the possibilities of this state, owing to the fact that many herds were not represented, was a high class display of a branch of the live stock industry that promises to undergo a wide extension in the next few years. Events are shaping that will make the California show of Shorthorns and Herefords one of the real shows of the country.

This year's exhibit, while light in numbers, ranks as one of the best shows held in this state in years. Balance was maintained in both the Shorthorn and Hereford divisions and several of the classes reached a high point of quality. For the most part the entries were California bred, a fact that is full of encouragement and significant of what may be expected.

Professor John C. Burns of the University of Texas rated both the Shorthorn and Hereford classes in a manner that was universally satisfactory and in several classes the ribbons were tied with rare artistry. Judge Burns expressed himself as agreeably surprised at the quality of the show, but marvelled at the fact that in a state so preeminently adapted to beef production, there were not more herds on the grounds.

The Herefords

The Hereford classes were judged on Tuesday. Three California herds and one from Colorado contested for honors. For the first time in the history of the show, polled Herefords made their appearance in the ring and succeeded in giving a very good account of themselves.

H. M. Barngrover had the only aged bull, the six-year-old grandson of Paragon 12th, Patrician 5th. He is a bull of scale, impressively fronted, thick and smooth, though not highly fitted. He had easy sailing to senior championship but fell short of top honors.

The three two-year-olds, with polls in the majority, were headed by Alamo Reuben, the horned entry, with more size than the second and third. Again in the senior yearling class the judge preferred the horned Bunting entry, Alec, nicely fitted and with more size and breed character, to the two polled bulls from Colorado and California. The junior yearling class was made up of two without horns and first place was given to Bonnie Grove from Colorado. The four senior bull calves made an attractive class and the Bunting calf, Mission Princess, looked well at the top over the two good calves shown by Barngrover. Brunton's Repeater Grove was at home in fourth place. When the junior bull calves lined up there were only two, one a polled. The top was

Continued on Page 348.

Grand Champions

A Jersey has broken into the group shown above, but the others are true representatives of the highest and best in California beef breeds. For years California has shown a few remarkably fine beef stock, but there has been a wonderful increase in numbers, likewise in quality, during the past two years. Above are typical examples of California breeding. From top to bottom these animals are:

6—Basham Augusta, grand champion Shorthorn bull owned by Dibblee Estate. 7—Pearl, grand champion Hereford female owned by Brunton, Aspen, Colorado. 8—Foothills Pioneer, grand champion milking Shorthorn bull owned by Thomas Harrison. 9—Little Sweetheart, grand champion Shorthorn cow owned by T. S. Glide, Davis. 10—Jolly Senator Raleigh, grand champion Jersey bull owned by J. E. Thorp.

A GREAT FAIR

"If it hadn't been for that strike we'd have had some fair!"

President Roeding, Secretary Paine—in fact the whole bunch looked real peeved, even vicious, kicked their heels against the brick walls of the big new building and said "Ogoshogosh!"; also some other things which I have forgotten.

Meantime we, the common people, turned to and had a great time doing California's best fair.

However, some of the exhibitors who had to take their exhibits from aboard cars and haul 200 or 300 miles in trucks were at first somewhat concerned over the cost of the experience but were soon enjoying the fair with the rest of us.

My work at the fair was to take notes in the great horticultural building and tell of the fruit and of those county or community exhibits. A series of photographs was secured showing some remarkable exhibits, but as soon as I arrived at the home office it developed that other plans were in the making because of the great tractor demonstration at Los Angeles, so notes and illustrations of some of the most attractive exhibits at the fair will be held over until next issue, September 20.

Meantime information regarding the tractor and implement exhibits is given by Mr. Holman, and Messrs. Royce, Hughes, Guilford and Bennett supply this week a very complete story of the live stock show. It was wonderful in quality, and the numbers were greater than anticipated. These exhibits, however, did suffer seriously because of the strike. For instance, it was said that two carloads of pure bred poultry from south of Tehachapi were held back. The poultry exhibit was, however, most creditable.

More general information next issue.—C. B. M.

Fumigation Regulations

COMMISSIONER H. J. RYAN of Los Angeles County and Commissioners Coy of San Bernardino, Sharp of Riverside and Morris of Orange, have issued a statement of requirements governing commercial fumigators operating in Los Angeles County, which will tend to standardize fumigation practices.

Commissioners of other counties are expected to promulgate practically the same regulations. The regulations are:

Equipment

1. All fumigating tents shall be marked in accordance with the Morrill system.
2. The foreman of each fumigating crew shall be equipped with a tested thermometer.
3. All equipment used by fumigators shall be kept in good repair when in use.
4. No pump shall be operated showing more than a five per cent variation from correct measurement.
5. Liquid gas machines shall be tested by the horticultural inspector each week and no machine shall be used which does not bear tag showing inspector's signature and date of inspection.

Operating

1. Each tent shall be placed so that one line of numerals runs over center of top of tree.
2. Tents shall be kicked in to hang perpendicularly from outer limbs of tree to ground, and shall touch the ground on all sides.
3. Trees requiring more than a four unit charge shall be taped and correct dosage given as called for upon chart.
4. Thermometer reading shall be recorded at beginning of each set and this record kept available during progress of work for reference of grower or county horticultural inspector.
5. Trees shall be given not less than forty-five minutes exposure regardless of dosage, and work of tent pullers shall be regulated accordingly.
6. Trees shall not be fumigated when the temperature is below 37 degrees Fahrenheit.
7. Each fumigator shall submit on the first of each month a report to the county horticultural commissioner showing for each piece of work performed during the previous month; date, grower's name, location of orchard, number of orange or lemon trees, kind of material used and strength.
8. Fumigator shall keep on file and furnish upon request of horticultural commissioner statement of amount of material used on any piece of work.
9. Fumigator shall furnish to the horticultural commissioner at the close of the fumigation season, not later than April 1, a statement of total amount of cyanide or liquid hydrocyanic acid used by him during the preceding twelve months.
10. Deviation from any of the foregoing requirements shall be considered sufficient grounds for revocation of license or certificate unless contractor has filed with the county horticultural commissioner copy of written instructions or agreement by owner or person in charge of property specifying requirements contractor is in instructed to disregard.
11. Evidence of abuse of privilege to do business under license or certificate shall at all times constitute grounds for revocation of same.

Suggestions

1. A record of the dosage given each tree, with the temperature at beginning of each set should be supplied to grower or kept on file by fumigator for reference of grower or horticultural inspector.
2. Not less than one hour's exposure should be given when any black scale eggs are present.
3. Daylight fumigation is not recommended at any time except as generally practiced beginning late in afternoon under most favorable cloudy conditions.
4. Work should not be continued after tents begin to become damp.
5. Care should be taken not to allow liquid containers to become heated. Keep them in a shady place and keep covered with wet sacks.
6. Leakage from liquid gas containers is extremely harmful to tree roots and care should be taken to keep containers far enough from trees to insure safety.

FERNS

"In and around the house ferns are incomparable in respect to the variety, abundance and grace of their foliage," says W. H. Hutchings in the San Francisco Chronicle.

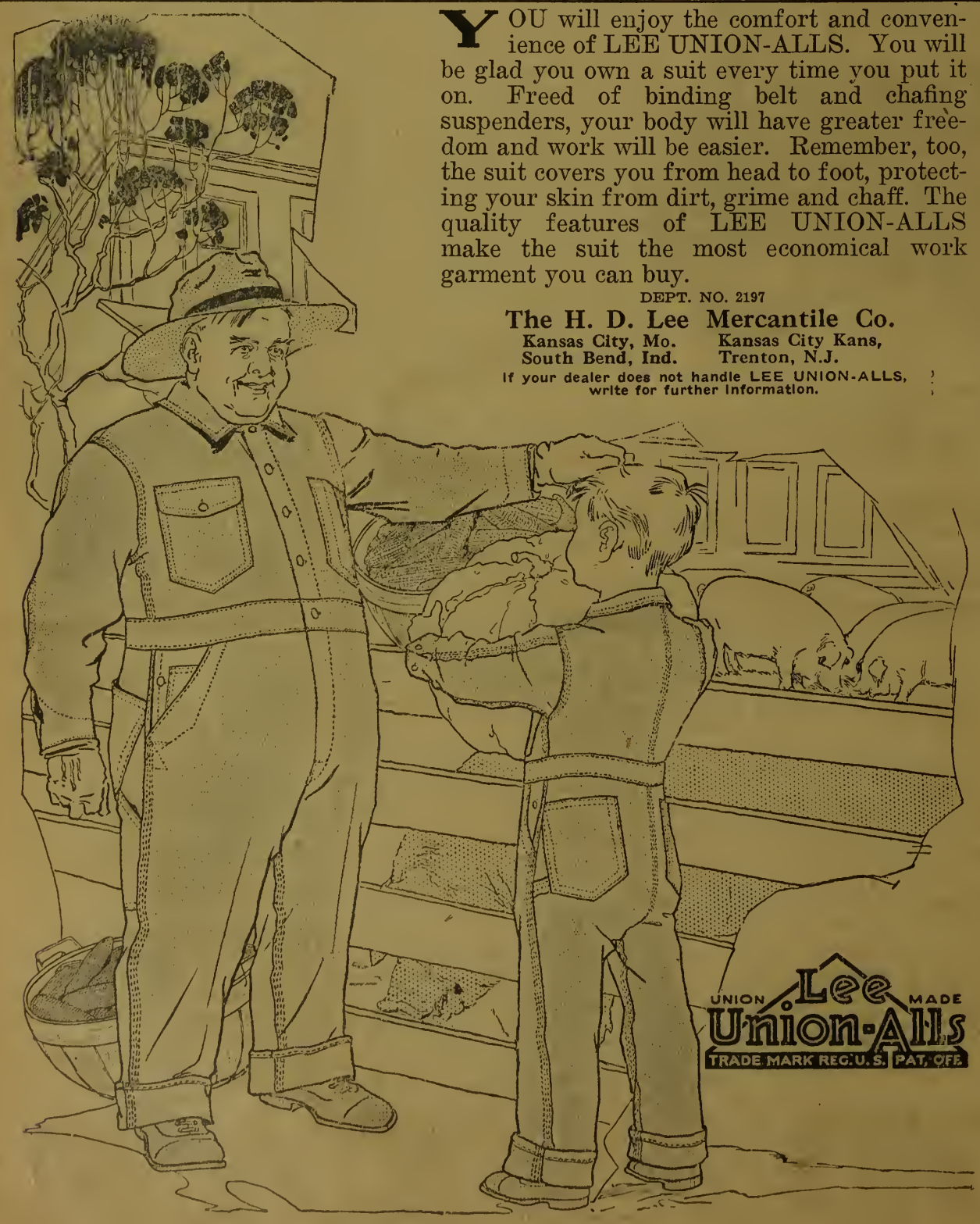
"No other class of plant is so suggestive of the freshness and quiet of the woods. No other class of plant can be so easily maintained in health. They are often perfectly accommodated in nooks so far removed from the light that other plants would not thrive at all.

"The best position for a potted fern is in a very light and well ventilated room close to a window facing east, north or west. Should south enter into the aspect it would generally be advisable to partially darken and keep the room cool during the portion of the day when the sun shines full on the window.

"Watering the plants may be accomplished where they remain—draining into their own saucers or jardinieres and then emptying after each watering except when the plant is evaporating much water in summer. Most ferns will be benefited, however, by being taken outdoors twice a week in the early morning, the pots well soaked if the soil is dry and the foliage given a very light sprinkle and left to stand in the fresh air. They should always be taken in before the sun becomes strong or the wind rises, or the practice may become ruinous.

"Ferns that seem to have outgrown the pot will often be benefited by an occasional dose of liquid fertilizer. Seedmen usually carry preparations for feeding pot plants put up in cartons with instructions for mixing. Common liquid washing ammonia is an excellent plant stimulant if used not stronger than one tablespoonful to a gallon of water. Small or unhealthy plants in a large pot would rarely be benefited by fertilizing. By careful and methodical attention induce a healthy growth—then gradually feed.

"The possibilities for outdoor planting of ferns are but now being fully realized. A lattice summer house or arbor, a pergola, a rocky place under trees, the shady side of the house, the sunless corner where nothing else will grow, after suitable preparation, are ideal places for an infinite variety of beautiful hardy ferns. The usual preparation will be very deep digging, inocrporating a large quantity of light material, preferably leafmold, but anything except fresh manure. The surface should be of a nature that will not cake when dry. If this occurs, better mulch with an inch or two of very old manure, leafmold or shavings."



YOU will enjoy the comfort and convenience of LEE UNION-ALLS. You will be glad you own a suit every time you put it on. Freed of binding belt and chafing suspenders, your body will have greater freedom and work will be easier. Remember, too, the suit covers you from head to foot, protecting your skin from dirt, grime and chaff. The quality features of LEE UNION-ALLS make the suit the most economical work garment you can buy.

DEPT. NO. 2197

The H. D. Lee Mercantile Co.

Kansas City, Mo. Kansas City Kans,
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If your dealer does not handle LEE UNION-ALLS, write for further information.

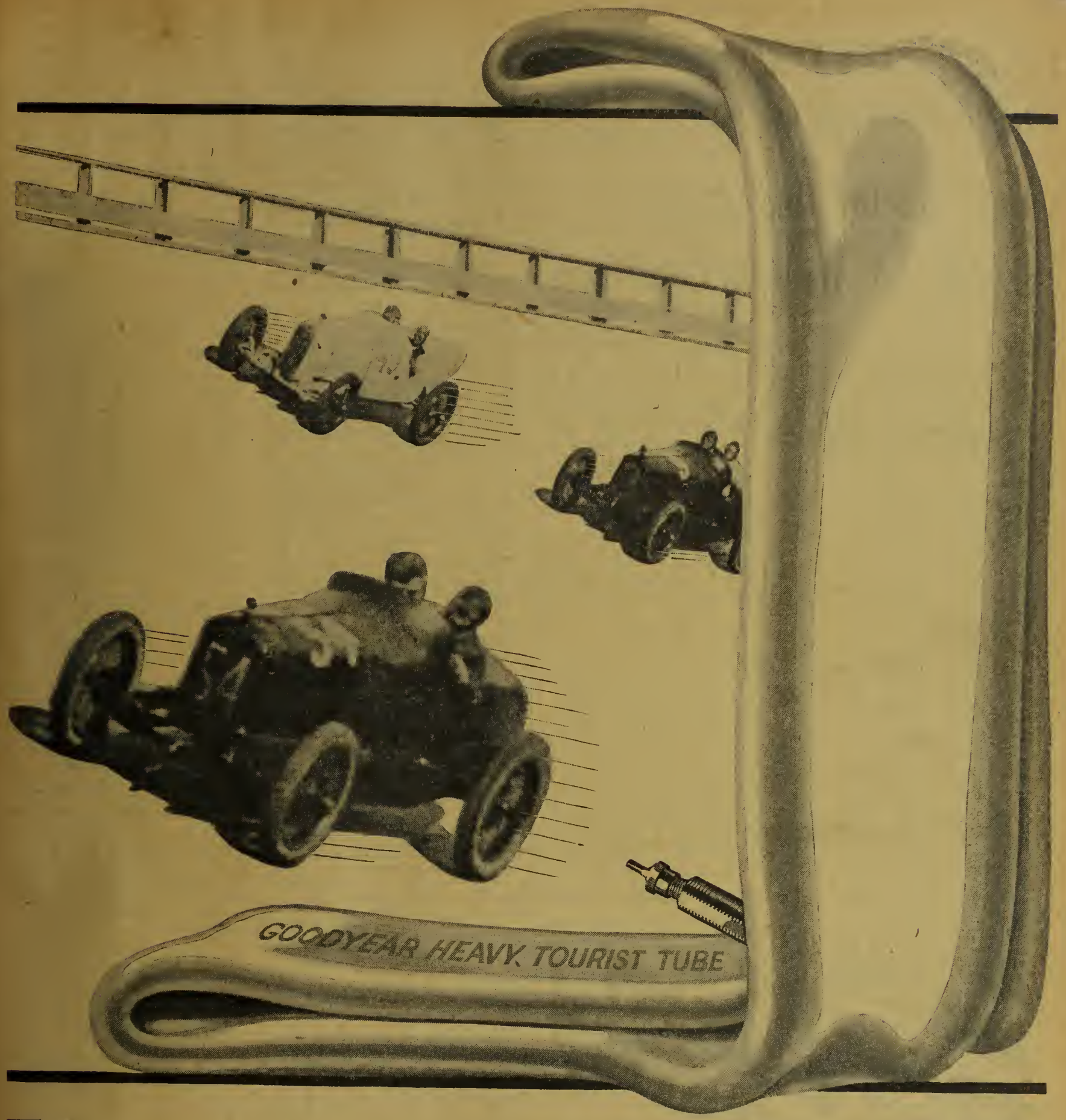
CALIFORNIA'S RICE PROSPECTS

Sacramento Valley's 1919 rice yield per acre will exceed that of any of the Southern States by at least 50 per cent, according to J. R. Leguenec, chief of the rice division of the United States food administration, who is making a personal survey of the crop conditions in the United States. "Without doubt," said Leguenec during his stay in Sacramento, "California will be producing over half the rice crop of the United States within the next five years. A year ago she was in fourth place. From the present outlook she will jump ahead of Texas this year, putting her in second place, and in five years she will probably outstrip Louisiana, which has an enormous output of rice now. I looked over about 1,000,000 acres available for rice land in the Sacramento Valley and that land is capable of growing rice enough to exceed the entire rice output of the United States at the present time."

This year's rice acreage in the valley is 140,000, with an estimated yield of 35 sacks to the acre. So rapidly is the industry developing that rice mills located in Sacramento are to spend $250,000 for extensions during the next six months.

HARNESSING ELECTRICITY

The poultry farm is going to use more electric current in the future. It is to be harnessed to take the place of human muscle. The clover and root cutter, the grinder of grains, the grindstone, and other machines, will be hitched to the copper wire of the roadside. Already the wire is making possible better lighting of incubator cellar, brooder house and grain room, as well as extending the working hours of the flock in the poultry house. Some New York State folks seem to think that they can afford to light their poultry pens in the short days of winter, extending the hours in which the hens are able to eat and work, and get enough extra eggs to pay a profit.



Think What the *Tube* Has to Do

ALMOST everyone knows, now, that Goodyear Cords are the first choice of the race driver.

For all important track records, from one mile to six hundred miles, have been established by cars shod with Goodyear Tires.

But we wonder how many people realize that this fact is one of the most emphatic endorsements possible for Goodyear Tubes?

No tire, not even a Goodyear Cord, could stand the terrific punishment inflicted by scorching speed unless the tube which it enclosed was irreproachably made.

Goodyear Heavy Tourist Tubes are made of purest rubber—gray gum strips *built up layer-upon-layer* many plies thick, then welded inseparably together into an integral mass.

They are of even heavier construction than usually used in racing tires.

Because of their longer life and their unfailing retention of air, they undeniably do give much protection to casings.

This being true, isn't it essential that *your* tires have the benefit of the finest tubes you can buy?

More Goodyear Tubes are used than any other kind.

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REMEMBER THE DATES AND BE SURE TO BE THERE

Cover Crops in Arizona

By M. E. Bemis

COVER crops in Arizona do not mean quite the same thing that they mean to California orchardists. Particularly is this true in relation to clean cultivation in the summer. It has been found by actual experiments that the temperature of the soil is several degrees less in summer where a crop is being grown,—consequently the practice of clean cultivation through the summer is being quite largely discontinued.

A few years ago it was rather common to see the citrus and olive groves clean cultivated and an occasional deciduous grove. This was but natural as many of the orchardists were from states where clean summer cultivation had been the rule and a desirable practice to follow.

During the past few years I have seen but very few groves that were kept cultivated clean through the summer. The crop which is grown as a summer cover crop varies almost as much as the variety of crops grown by the farmers throughout the Valley. In other words, we find in the young groves some truck or farm crops quite commonly grown. Usually this is some crop which requires clean cultivation. At the same time the crop which is grown helps to keep the temperature considerably lower than would otherwise be the case and to some extent protects the trunks of the small trees. As the trees come into bearing it is generally found that some crops which may be broadcasted are more commonly grown. In the citrus groves cow peas are popular summer cover crops. These make a dense growth, which when plowed under adds humus and nitrogen to the soil.

With many of the growers of deciduous fruits the natural weeds and grasses are frequently allowed to grow. This gives the appearance of neglect, and to one unacquainted with conditions the conclusion might be that it was slipshod farming. Results, however, seem to justify this practice and I should hesitate to criticize some of our successful fruit growers inasmuch as they succeed in producing a splendid quality of fruit year after year and in quantities that bring them splendid results. In quite a few groves alfalfa is grown. This is usually plowed up every four or five years and the grove thoroughly cultivated and cow peas or some other crop grown for a season or two.

Winter cover crops are not as common. In fact, with the practice of growing a summer crop such as cow peas or allowing grass and weeds to grow in the grove, the custom is to plow this growth under in the fall and cultivate more or less in the winter. Some citrus growers have tried growing the so-called sour clover (Melilotus Indica). This makes a heavy growth and is probably satisfactory as far as a winter crop is concerned. Sweet clover, so far as I know, has been grown here but very little, although in one instance that I know of it has proved to be a rank grower and would add a great deal of vegetable matter to the soil. Of course, where alfalfa is grown it is both a summer and a winter cover crop. Soy beans have been grown to some extent but so far they have not proved nearly as satisfactory as cow peas.

The San Carlos Project

EARLY Spanish explorers found the Arizona Indians farming in the Gila Valley, although their irrigation methods were more primitive, if you will excuse the paradox, than the irrigation systems of their prehistoric—shall we say ancestors or simply predecessors. The Casa Grande Valley takes its name from the ruins which the Spanish explorers called, for want of a better name, Casa Grande (big house). Through this great alluvial desert plain these prehistoric peoples had built canals, and evidences are conclusive that they must have at some time or another irrigated and tilled thousands of acres of this Casa Grande Valley, just as thousands of acres were once under cultivation in what is now the Salt River Valley. Early white settlers began irrigated farming in the vicinity of Florence before the first canal was taken out from the Salt River.

Engineers and old timers that had good sound sense have for years known that in the mountains beyond Florence through which the Gila has cut its way, there was an admirable site for a dam and storage reservoir, but the people of the Florence district and the Casa Grande settlers have been slow to get together on a proposition to build this dam. There were differences of opinion, such as have been many times the causes of disputes in the Southwest where there is more irrigable land than irrigation water. Even with a storage reservoir it will not be possible to irrigate all of the great valley of the Casa Grande. It is probable though that with some supplementary irrigation by pumping that there will be altogether a greater area that will eventually come under irrigation than in the Salt River Valley.

Recently the settlers in this valley got together on a plan for the building of a diversion dam above Sacaton on the Indian reservation. Through this plan the government insures water for the Indians of the Sacaton reservation, and the white settlers have water for several thousand acres. This was so much easier than anticipated and proved the value of cooperative effort so well that the people became enthusiastic and have decided to forget past differences and go after the big storage dam in the San Carlos or Box Canyon.

As a result of the efforts of these workers who are enthusiastically uniting to put over the big project, there was held at Florence a monster mass meeting for the purpose of crystallizing sentiment in favor of the project and beginning the work of actually bringing it about. The same committee of citizens that has successfully brought the diversion dam was elected to plan the campaign for the bigger project. Judge O. J. Braughn, superior court judge of Pinal County, is chairman.

The preliminary work is to get signatures from the owners of the lands to be benefited, and this seems now to be the easiest part of all, so enthusiastic are the settlers in the valley. It seems likely that many who will not be under the canals will get behind the movement, for it is now realized as never before that the indirect benefits will make it advantageous to those who have lands contiguous, but irrigated with pumps. Later the committee will prepare a brief for presentation to congress asking for federal aid. Whether this can be handled as part of the soldier settlement plan or not remains to be seen. The one thing that stands out now is that the people of Pinal County are together and have the enthusiastic backing of neighboring counties, and with such determination it will be possible to build by private enterprise if the government does not aid. The San Carlos dam must be built.

A DEMONSTRATION OF GRASSES

Every one visiting the tractor show will be interested in the remarkable demonstration of forage grasses and sorghums on West Sixteenth Street in the 1500 block, Los Angeles. Here you can see Napier, Merker, Rhodes and other grasses in comparison; also the Wonder Forage, Schrochs Kafir, Silver Tip and other sorghums and millets. To visit the plot is well worth your while.

APPLES MUST CONFORM TO STANDARD

The following instructions issued by Director Hecke will be rigorously enforced by inspectors througnout the state:

To Apple Dealers

Beginning Monday, July 28, only apples bearing the state standard stamp or conforming to the requirements of the 1917 standard apple act can be removed from transportation company terminals by the consignee. All others will be returned to the shipper or removed to a cold storage plant and held until shippers conform to the required grade and marking, after which apples will be delivered to original consignee with a statement of storage, transfer and repacking charges, if any, to be deducted from sales account to shipper. The law plainly states that the end of the boxes must bear the name and address of packer or shipper, the variety and grade of apples, net weight or number of apples in the box and the date packed. These simple requirements were intended to advertise California apples, facilitate handling in transportation and by the trade, and to protect all parties concerned. Neatly marked boxes lend to appearance and appearance adds to value.

ALMONDS MOVING

"Shipment of almonds started from Sacramento the first week in September and will continue for five months," says a letter from the Sacramento chamber of commerce. "The entire crop for 1919 has been contracted for. California's almond crop, which represents 98 per cent of the entire American yield, will be the greatest in the state's history this year, according to growers in the Sacramento Valley where 75 per cent of the state crop is produced. It is estimated that the 1919 crop will total 7,000 tons, or twice the volume of the crop in 1915. The value of this year's crop is placed at $3,000,000. The prices to be paid the growers will be the highest on record, it is predicted. Last year prices ranged from 20 to 25½ cents a pound and it is expected that the 1919 prices, to be set the first week in September, will be even higher.

CALIFORNIA A PEACH STATE

California is rapidly becoming the "greatest home in the world for peaches," according to a statement made at Riverside by Homer B. Fairchild, pomological expert with the department of agriculture, at Washington, D. C. "The peach crop of America this year will not be more than 30,000,0000 bushels," said Mr. Fairchild, "and of that amount California will produce 16,000,000 bushels. What with peach yellows and curly leaf, Delaware, Michigan, Ohio and parts of Indiana and New Jersey will not have a quarter of the crops they used to have, while California has an immense field and the demand is proportionately large. Every dollar California has spent vanquishing horticultural diseases and insect pests will return tenfold, and then some. In ten years the crop of Georgia has fallen from 4,200,000 to 2,700,000 bushels, all because of the yellows which have slowly sapped the life out of the trees. It is almost the same in Virginia. California is more nearly free of peach tree diseases than any other state in the Union."

TUOLUMNE HAS GOOD APPLE CROP

County Horticultural Commissioner Sherrard of Tuolumne says: "The apple crop is way above normal. Many growers have thinned out heavily and the trees are bearing to their capacity. Several growers received $75 per ton this year against $45 for 1918. Others are following the standardization law closely, grading and packing, and as a result are getting from $2.40 to $2.50 per box. Warm weather advanced the season about a week earlier this year."

PLANTING ALMONDS IN SAN LUIS COUNTY

Commissioner Alley of San Luis Obispo advises that G. A. Nehrhood of Paso Robles has placed orders for 276,000 trees for the coming season for himself and the Associated Almond Growers of Paso Robles. This is the biggest order so far this year for any county. It is made up of almonds, 70 per cent, prunes, 25 per cent, and the remaining five per cent mixed fruits

THE CALIFORNIA CHERRY

During the 1919 season California will ship to the markets of the world about 25,000 carloads of deciduous fresh fruits, and while the cherry shipments probably will not reach more than 275 carloads (fresh), this amount, with the canned cherry output, makes the cherry crop one of the most successful and remunerative crops of the state.

STATE DEPARTMENT OF AGRICULTURE ISSUES LEAFLETS

The state department of agriculture has ready for free distribution two leaflets: "Laws and Regulations pertaining to the Walnut Codling Moth," "Standards for California Certified Seed Potatoes." These may be had upon application to Director, Department of Agriculture, Sacramento.

FRUIT DEALERS FINED

Seven $50 fines were collected from fruit dealers of Oakland during the first two weeks of August by the Horticultural Commission's office. Fines were all imposed for violation of the standardization law in offering for sale fruit that was wormy or in deceptive pack.

AN EYE ON MEALY BUG AND RED SCALE

The quarantine division of the Los Angeles County horticultural commission is taking especial precautions to prevent introduction of mealy bug and red scale through nursery shipments into clean districts.

Citrophilus, the most difficult of the mealy bug species to control, is most often found on ornamental plants; the chief source of red scale infestations is citrus shipments. Sometimes no red scale can be found above the burlap on balled trees, but may be discovered an inch or so below the surface of the earth if it is loose. When they have attached themselves in this way, they may live through dipping or fumigation and will escape careless inspection.

SIX KINDS OF COOPERATION

Here are six kinds of rural cooperation advocated by a southeastern farmer:

1. Cooperative buying of supplies by the pooling of purchases.
2. Cooperation in producing crops by joint ownership of improved equipment.
3. Cooperation in putting raw products into more finished forms by joint ownership of gins, mills, creameries, etc.
4. Cooperation in the marketing of crops.
5. Cooperation in financing farm production.
6. Cooperation for more and better education of the kind which is really needed by the rural people.

Studebaker

THE 60-H. P. BIG-SIX

IN providing complete motoring satisfaction the New Seven-Passenger Studebaker BIG-SIX offers the utmost in individuality and charming appearance. Its 126-inch wheelbase insures perfectly balanced riding qualities and maximum comfort for every passenger. The 60-horsepower motor with its two-range carburetor and hot-spot intake manifold makes possible unusual speed and power under every driving condition.

Equipment includes *cord tires,* shock absorbers, tonneau extension light, oval plate glass windows in rear of Gypsy top, genuine hand-buffed leather upholstery, silver-faced jeweled 8-day clock and magnetic speedometer mounted on a circassian walnut-finished instrument board, and many other conveniences.

Studebaker quality, dominant for 68 years is reflected in this new BIG-SIX.

THE LIGHT-SIX $1685 THE BIG-SIX $2135

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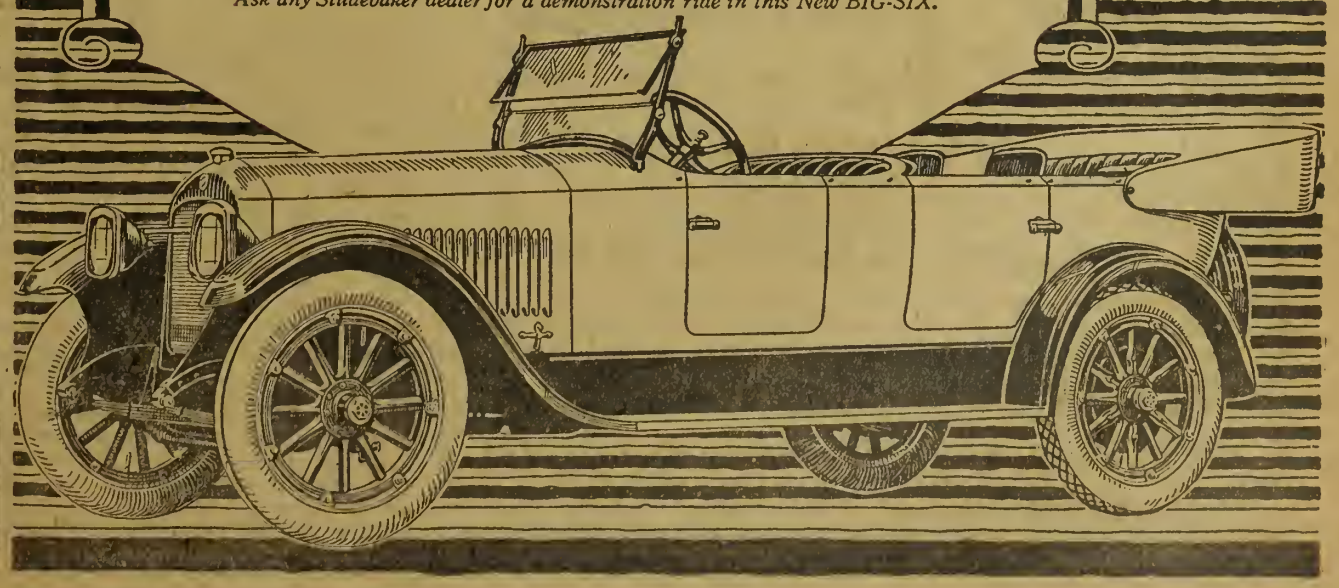

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Saturday, Sept. 13, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

That is no "ad" on the cover, though at first it may look it. It is a consideration of public interest and a looking toward the welfare of the producer that induces the implement men to stage a great event near Los Angeles next week. True, there is an enlightened self interest in this matter, for there will be many a tractor sold and many an improved farm implement sent to the ranch which will increase its productive power and advance the interests of agriculture. And the dealers will, everyone, reap profit and reward. So will the farmer. Hence the Cultivator is glad to give without cost to the association the entire first cover to the map calling attention to the location and announcing the great event.

Read the cover.

A JUST SENTENCE

A Chicago justice has a new penalty for auto speeders. When the usual Monday morning bunch came before him he withheld any fine or imprisonment for that particular day and sentenced the entire party to make a visit to the city morgue and to spend a few minutes in viewing the bodies of those who had been killed the preceding day by auto speeders. The coroner has found that this is proving a very satisfactory sentence in that it has reduced the number of deaths.

AIRPLANES EFFECTIVE

One feature of the state fair which attracted much attention was the exhibit of the United States forest service in the big new building. John D. Maxfield, of the San Francisco headquarters, was in charge, and when we asked as to one feature of the exhibit, a toy airplane constantly circling about, they assured us that real airplanes were doing far more than toy service. They have ceased to be playthings and their patrol over impassable mountain sections has given early warning of many a fire and saved the destruction of thousands of acres of timber.

BETTER ROADS NEEDED

The first remark made by the officers of the artillery companies which came 4,000 miles across continent with two 175 m.m. guns drawn by tractors, together with search lights, wireless instruments and other war machinery and camp equipment, was: "Give us better roads; they are needed for military, for industrial purposes; they are needed for the farmer."

The travel stained, dust covered company rolled into the state fair grounds and gave a real thrill to thousands of spectators for they looked the "real soldiers" which they are. They usually hastened to say, regarding the roads: "Since reaching the California line the roads have been the best we have encountered, but the country across there is woeful lack of road efficiency."

COOPERATION IS PROFITABLE

At the meeting of the California Holstein Breeders' Association at Sacramento, state fair week, President Kiesel, in making his annual address, referred to the success which is being given to dairymen of California. As one of the greatest factors in that success he gave credit to the California Milk Producers' Association, of which J. M. Henderson is president. This association has suffered from the fiercest of attacks by interests whose business has been affected by the success of the dairymen, but the loyalty of the members, at least the loyalty of by far the greatest proportion of them, has been such that the association is growing, is installing new creameries, factories or plants for the handling of dairy products. It is making butter, cheese, condensed milk, milk sugar, casein, powdered milk and malted milk.

It was reassuring to hear the endorsement given to President Kiesel's remark by the dairymen present.

STATE CONVENTION

Director Hecke of the state department of agriculture has called a meeting of fruit growers and others interested in the coming State Fruit Growers' Convention, to be held in Chico next Tuesday. This meeting will be simply for the arranging of the general plan and possibly some of the details of the coming great convention. Exact dates have not yet been chosen, but probably the convention will be held during the first week of November and in Chico, Butte County.

No convention yet held in the state was more important in its results than that held at Riverside a few months ago. We are not informed whether an effort will bo made to secure as great an attendance of Coast entomologists and horticulturists at the coming convention, but thore are burning questions of great interest to our fruit growers which will call a representative body together in Butte County. It has been years since one of the conventions was held so far north as this one, and growers in the southern part of the state should make an especial effort to attend.

FARM POWER PRICES

A more general use of farm power is being made every day. Events such as that of the coming week in Los Angeles give still greater impetus to farm power use. Labor is higher and less efficient, and the demand for greater production increases instead of diminishes with business. It seems the only solution is encouraging the still greater extension of the use of gas. The farmer is, however, questioning the advisability of buying anything at present prices, but if he will produce and secure the prices which are at present being paid for farm products he must produce at this time and not wait for the reduction which, when it comes, will certainly not be all on the side of the implements and machinery which he purchases. The question is discussed from every angle by almost every farm paper and the universal expression is: "We are making no predictions; it is possible there may be a lowering of prices, but the only correct procedure is to deal with the present and purchase as needed for greatest efficiency." If we were to give any advice at all it would be to use that which is needed and secure it at as reasonable a price as possible under present conditions.

QUARANTINE

Frederick Maskew says we are not the only ones who have entered into the quarantine business. He has done some little looking up in this matter of quarantine and finds that in the good old city of Venice on the Adriatic as far back as 1448 it was necessary to quarantine. Notwithstanding this early beginning of quarantine it was some hundreds of years before the countries of Europe settled down and worked out a safe, sane and consistent system of quarantine. This was in 1853, but it has taken nearly two-thirds of another century before the United States could get down to a consistent and regular working out of a plant quarantine plan. California and many other states have protected the interests of their agricultural classes by enacting and endorsing quarantine regulations, though it may be remarked that as early as 1700 Wm. Penn, sole owner and proprietor of Pennsylvania, made certain recommendations as to the transfer of pest infested products within his properties.

Those who were at the Riverside convention some months since and came in touch with C. L. Marlatt, chairman of the federal board of horticulture, are impressed with the fact that a most resourceful and capable man is at the head of this work in this country, and notwithstanding the determination of importers and others to nullify the action of this board and even to put it out of existence, will continuo to strengthen and perfect the work of the board. The organs of the importers seem to have caught many of the Eastern papers, for the Literary Digest recently made a bit of editorial comment before quoting the pros and cons of the question. In this editorial note it says: "Experts estimate, we are tóld, that thc loss caused by the pests already introduced, for the most part through the agency of imported plants, aggregates a half million dollars annually." Presumably this is an error which can be laid to the typesetter, for the sum intended must have been a half billion, for one pest alone, the pink bollworm of the cotton fields, has already caused in excess of $20,000,000 loss annually, and this is strictly an introduced pest. The state of Massachusetts has in one year appropriated $600,000 to fight the gypsy moth; the state of Texas, the pink worm, over a half million; the department of agriculture, a half million to devise means of controlling the European corn ear worm. The loss from this corn ear worm is about $15,000,000 annually. Unless our people awake and insist that importers and politicians keep their hands off, other millions, or possibly billions, of loss will be visited on agriculture.

CALIFORNIA AGRICULTURE

Another week we will give details regarding the personnel and the work of the recently organized department of agriculture for California. George H. Hecke, the former commissioner of horticulture, has been busy organizing the new department, and to the end that more efficient work may be secured is now arranging large offices which will bring under one roof the various departments which have been scattered from Sacramento to San Francisco. It is most reassuring to see the manner in which Director Hecke is taking hold of the work, and we believe he will have the fullest support not only of the horticulturists but of the live stock men and the farmers generally.

ANTELOPE FAIR

The Antelope Valley fair opens next Wednesday morning. It will not be as big as the state fair. It may not have the large attendance which probably will be given the tractor demonstration in Los Angeles, held the same week. But it is to be noted that the event is a milestone in the agricultural history of that valley. California is appreciating more each year the work of the local agricultural fair.

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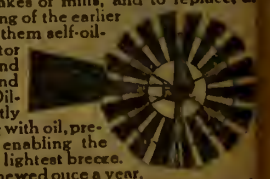

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Bureau of Markets in Los Angele

By H. H. Warner

THE "Office of Markets and Rural Organization" as the bureau of markets of the United States department of agriculture was first called, was authorized by Congress in 1913. The scope of its work was rapidly extended until in January 1919 its agents were scattered in every food producing district of the country as well as in large centers of consumption. Originally designed to aid the farmers in the intelligent marketing of their crops, it rendered an exceedingly valuable service to the shippers and distributors of perishable foodstuffs as well as to the producers.

The emergency funds which became available to the bureau from the greatly increased appropriations during the period of the war were of particular benefit to the food administration in helping to control the food supply of the nation. These increased funds enabled it to enlarge its personnel and to rapidly expand two of its activities, the market news service on fruits and vegetables, and the food products inspection.

In the spring of 1918 market stations were opened for the first time west of the Rocky Moutains and the leased telegraph system extended to include Los Angeles, San Francisco, Portland, Seattle and Butte. In addition to these city offices, field stations were operated during the period of the crop movement in Brawley, Fresno, Turlock, Sacramento and in several districts in the Northwest.

Daily market news bulletins showing the prevailing price and the trade conditions in the large eastern cities were mailed upon aplication, free of charge, to all growers who were interested. For the first time producers of perishable crops on the Pacific Coast were given the same accurate knowledge of prices in consuming centers which Eastern farmers had enjoyed for several years. This nation-wide market reporting service has become famous for its authentic and reliable price reports because the men selected as market reporters had no axe to grind and were appointed because of their thorough training in this line of work.

The Los Angeles office was opened for business in May, 1918, and rapidly built up a large mailing list of several thousand growers who were quick to avail themselves of this free reporting service. In the first year of its operation market reports were issued daily in season covering potatoes, onions, cantaloupes, grapes, appies, peaches, pears, cabbage, cauliflower, lettuce, celery, tomatoes and spinach. Semi-weekly reports on dry beans and monthly reports on honey were also issued. Owing to the three hours difference in time between Los Angeles and the larger Eastern markets, these reports were usually completed and in the mails by noon of every day, showing the prevailing prices the same morning in the Eastern markets for these various crops. Nine employes, including two telegraph operators, were engaged in receiving, compiling and mimeographing this information every day in the Los Angeles office.

Although the increased appropriations due to war conditions also made possible the rapid expansion of the food products inspection service, this did not mean as much for Los Angeles because the law provided for the inspection of carloads of fruits and vegetables only at destination. Probably no city of equal size in the United States consumes as little "shipped-in" fruit and vegetables as Los Angeles. Consequently the inspection work was of minor importance here, and altogether only about 30 requests for inspections were received during the first year of operation. The certificates issued however were prima facie evidence in any court as to the actual quality and condition of the products examined, and while the food administration was in force these certificates were used as a basis for recommending adjustment in all disputes of this nature.

There has always been and still continues to be a strong demand from shippers for the same kind of inspection at the loading points. Should the bill which has been introduced providing for this become a law and carry with it a sufficient apropriation, the Los Angeles office of the bureau of markets would become one of the largest and most important in the country. It would require a big force of experienced men to inspect shipments at the originating points in Southern California. Shippers are insistent that they be given equal government protection with receivers on this matter, and they have repeatedly made strong demands upon their congressmen to see that the bill which has been introduced becomes a law.

The third line of activity in which the Los Angeles office was especially interested was in assisting where possible the organization of growers for the better marketing and distribution of their products. In this connection some efforts were made to show the pear growers in the Antelope Valley and the apple growers in the Yucaipa and Oak Glen districts the advantages to be gained from cooperative marketing. A number of districts like these are rapidly nearing the point of overproduction so far as the local market is concerned and should for their own future good begin to seek Eastern outlets.

The situation this past year in the Coachella Valley is typical of the condition which the local office tried to remedy. The onion growers of that district, because of being unwilling to work together in a marketing enterprise, sold their crops in advance of the harvest for little more than the cost of production. Contracts or options on the growing crops passed freely about from one speculative dealer to another on a steadily advancing market, and when the onions were finally shipped, several "clean-ups" were made by these operators. No one can be blamed except the growers who were short sighted enough to permit local jealousies to stand in the way of organizing their own marketing system.

Instances of this kind are commonly found among disorganized growers, and through the opportunities afforded by the county farm bureaus the Los Angeles office of the bureau of markets was able to present forcefully to the growers the necessity for closer cooperation.

The agricultural appropriation measure which carried funds for oper-

Continued on Page 342

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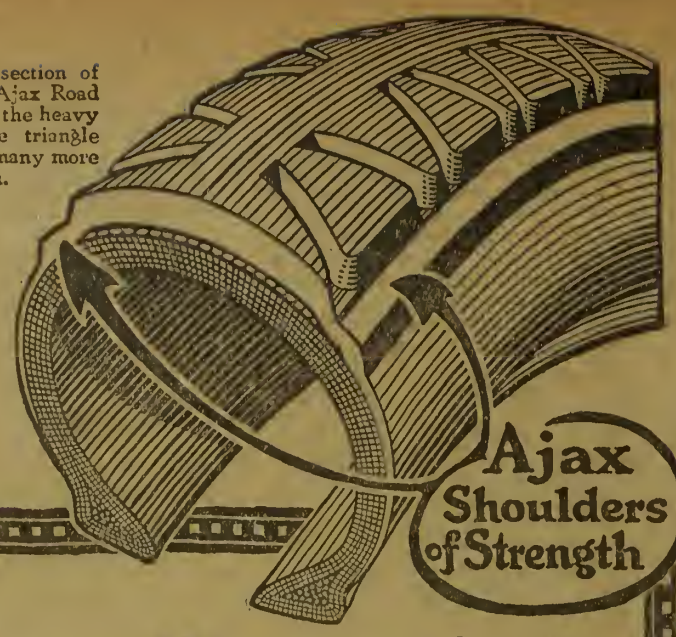

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Correct Tractor Lubrication

Correct lubrication adds much to the efficiency and life of the tractor, the truck or stationary farm power. The article following is written by a board of engineers employed by the Standard Oil Company and is used in the California Tractor and Implement exhibit catalog of the California State Fair. This catalog is not only a very complete list of tractors exhibited by the California Tractor and Implement Association, but is a general aid to the trouble shooter on tractor. We quote this article on lubrication entire.

IN ORDER to operate any piece of machinery it is necessary to interpose between all bearing surfaces a film of some lubricant—preferably an oil. The function of this lubricant is to adhere to and fill up the minute depressions in the bearing surfaces which it is called upon to lubricate, forming a film and acting as a cushion which absorbs the frictional heat generated and taking the wear instead of the metallic bearing surfaces themselves.

Friction is always present in any mechanism as a resisting force which tends to retard motion and bring all moving parts to a state of rest. It is estimated by engineers that in the internal combustion motor, such as is used on tractors, 20 per cent of the power developed in a correctly lubricated motor is used to overcome the friction of moving parts. This waste of power is, of course, largely increased where incorrect oils are used or where the lubricating system does not receive the proper attention by the operator.

Upon the correct lubrication of your tractor depends largely the power developed, consumption of fuel, and the expense of upkeep in repair, adjustment, and replacement of parts. It is, therefore, obvious that correct lubrication is of vital importance, and any effort made to bring about this highily desirable condition is directly beneficial in dollars and cents to the tractor operator.

It must always be remembered that in the internal combustion engine two lubricating problems present themselves: First, the lubrication of the close-fitting crankshaft bearings which operate under high temperatures; second, the lubrication of the wrist pins, pistons and cylinder walls which operate under high temperatures. As it is not possible to use an oil in your engine for each condition mentioned, the same oil must satisfactorily lubricate both bearings, pistons and cylinder walls under extremely varying conditions.

The correct oil for tractor engine lubrication must not have excessive body at normal temperatures in order to have sufficient body at high temperatures to correctly lubricate the wrist pins, pistons and cylinders.

Cylinder Lubrication

As cylinder lubrication is the first and most important feature, we will describe the action of the oil in your engine which is of the four cycle type.

Inlet Stroke—On previous exhaust stroke, oil was distributed on the cylinder walls and this lubricates the piston as it descends on the suction stroke, the connecting rod dipping into the oil at the bottom of the stroke.

Compression Stroke—Next, the film that has just lubricated the piston is not affected by the fresh charge of fuel and air entering the cylinder and, consequently, will not be injured as the piston goes upward and distributes an additional supply of oil on the cylinder wall, a new supply also being splashed on the lower part of the cylinder by the connecting rod.

Power Stroke—On the power stroke this film lubricates the piston. There is a film of oil on the cylinder walls above the piston, a portion of which, that is, the outer layer of layers, is burned off. This film is not entirely destroyed: first, because the duration of the power stroke is so short, and second, lubricating oil does not burn very easily or very fast. That portion of the film which is burned off is consumed with the fuel or held in suspension. That portion which is not exhausted with the products of combustion is deposited on the cylinder piston, valves, and spark plugs in the form of carbonaceous matter.

Exhaust Stroke—On this stroke a portion of oil film above the piston having been burned away, the piston returning distributes a new film on cylinder walls which lubricates the pistons and cylinders on this stroke.

Correct Oil for Cylinder Lubrication

The correct oil for cylinder lubrication should be fluid enough so that it will quickly penetrate the minute clearances between piston and cylinder wall. It must maintain a body under the high temperatures encountered which will not allow the piston and cylinder wall to come into metallic contact. It must not thin down to the point that an excessive amount of oil will be drawn by the piston into the combustion chamber. Its characteristics must be such that the portion of the oil which is burned will be consumed with the products of combustion or held in suspension and pass out through the exhaust.

Bearing Lubrication

Fluidity is the prime requisite of an oil for correct bearing lubrication; in other words, it must be fluid at the temperatures at which it is used. The correct oil, among other things, must have a low cold test, that is, it should flow readily at low temperatures.

Where too heavy oils, or oils of poor cold test are used, they can not be readily splashed to the wrist pins and cylinder walls until the motor has been run for a sufficient length of time (which may be 15 or 30 minutes or longer), so that the heat of the engine has thinned the body of the oil down to the proper degree of fluidity. During this time, excessive friction is taking place, which not only causes a loss of power and increased consumption of fuel, but manifests itself in a sluggish, unresponsive engine and excessive wear of all bearing surfaces. The bearing farthest removed from the source of supply is the wrist pin which is lubricated by the spray or splash thrown from the connecting rod. It is therefore vitally important that the body of the oil in the splash pit be light enough so that when the connecting rod strikes it, it will readily be thrown to the wrist pins as well as the cylinder walls and pistons. With heavy-bodied, sluggish, or oils of poor cold test, this is not possible.

An oil is too light for bearing lubrication when the pressure on the bearings will force the oil out from between them and allow these parts to come partially or wholly into metallic contact.

If an oil is used which is very thick or sluggish at low temperatures, the power required to shear the oil film is excessive, which means increased fuel consumption, loss of power and undue wear of all rubbing surfaces.

Efficiency in engine lubrication, therefore, means that the correct oil in both body and quality must be used; it must reach the working parts of the engine in a clean, efficient condition, and it must be fed to the cylinders in correct quantities, otherwise one of two things will happen—over or underfeeding.

Overfeeding

Overfeeding means that more oil will pass the piston rings than can be consumed and expelled through the exhaust, which results not only in lessening the value of the explosive mixture, causing loss of power, but also in excessive carbon formation, together with excessive oil consumption.

Carbon Deposits

Carbon deposit in a gas engine is residue from incomplete combustion of hydrocrabon products. In an internal combustion engine the hydrocarbons are the fuel and the lubricating oil. There is also present a certain amount of silica which enters the cylinders through the air valve of the carburetor in the form of road dust, and a small quantity of oxide of iron due to wear is frequently present.

The first and most important consideration is the combustion of the fuel, for from this source the largest proportion of carbon is deposited.

Explosive Mixture

When the charge of fuel and air (the proportions of which are determ

ined by the carburetor adjustment) is taken into the cylinder of a gas engine, it consists of hydrocarbon vapor and air. The oxygon in the air mixes with the carbon and hydrogen of the fuel and forms an explosive mixture. This mixture is fired and the products of combustion are expelled from the cylinder through the exhaust valve.

Rich Mixture

If the amount of air entering the carburetor is not sufficient to insure complete combustion, we have what is known as too rich a mixture. This is a slow-burning mixture rather than an explosive one, and will cause excessive carbon deposit.

For example, if the wick of an oil-burning lamp is turned too high, too much oil will be siphoned through the wick for the amount of air entering the lamp to form complete combustion. The lamp will smoke, and soot, which is carbon, will be deposited on the chimney. This is exactly what happens in the cylinders of a gas engine.

Rich Mixture Causes Carbon

The products of incomplete combustion of the fuel, together with a portion of lubricating oil passing by the piston rings, deposits a certain amount of carbon in the combustion chamber. That portion of this carbon which does not pass out with the products of combustion is baked on the cylinder heads, pistons and valves by the heat of the explosion. This carbon deposit will build up very much more quickly if it has a bed to build up on, such as would be produced by a poor lubricating oil which leaves a gummy deposit when exposed to the heat of explosion.

It is necessary, in addition to carburetor adjustment, to be absolutely sure there is no obstruction in the exhaust passage of the muffler, which would set up an excessive back pressure. The ignition should take place at the correct point. If the engine is operated with an overretarded spark, ignition takes place too late, and the explosive mixture, even if it were correctly proportioned, would not have time to burn up cleanly. This would cause excessive carbon deposit and overheating.

The gas engine operator and mechanic usually figure that carbon is caused always by the lubricating oil. This is not true. If the correct oil is used in correct quantities, it will burn up cleanly and pass out of the cylinders, leaving no perceptible deposit of carbon.

It is highly important that a minimum amount of lubricating oil be allowed to pass by the piston rings. To insure this the cylinder, piston and piston rings must be in good mechanical condition; otherwise the amount of lubricating oil passing by the piston rings will be excessive. This will not only impair the value of the mixture, causing loss of power, but will leave excessive carbon deposits.

Lubricating oil adds materially to the carbon deposits of the internal combustion engine if the following conditions exist:

Poorly-fitting piston rings or scored piston rings and cylinders.

Carrying too high an oil level; using an oil that is not suited to the engine, both as regards body and quality, or carrying the pressure in a force-feed system at too high a point.

Allowing the oil in the crankcase or oiling system to deteriorate to the point that it is so thin that even a well-fitting piston ring will not prevent a surplus of oil from passing into the combustion chamber.

Underfeeding

Underfeeding means that too little oil is fed to insure correct lubrication. The result will be excess friction, causing overheating, excessive wear of all moving parts, and possible scoring of cylinders, pistons and piston rings, necessitating frequent adjustments and expensive repairs.

The efficiency of the internal combustion engine is dependent upon the amount of work derived from the heat generated by the explosion of the fuel vapor.

(To be Continued Next Week)

O. W. McKay of Eager, Arizona, claims to have treated locoed steers and horses successfully with ¼ grain doses of strychnine daily for 12 days and ½ grain doses thereafter for a period not stated.

Foreign Exchange

MANY of us are not sufficiently informed to get fullest information from some of the financial reports in daily or financial papers. One point, that of foreign exchange, is quite fully explained in the last monthly financial report of the Oakland Bank of Savings. We are inclined to think that this financial review was written by J. R. Garthwaite, for a long time grower of lemons at Corona, Riverside County. The circular says:

"The term 'foreign exchange' seems cloaked in mystery, yet while its ramifications are intricato its initial significance is simple. If a merchant in Berlin buys wheat in New York to the amount of $10,000, he must pay for it in U. S. dollars. He goes to his local banker and buys a draft on New York for $10,000, paying for it in German marks. Before the war a mark was worth about 24 cents in our money and a draft on New York for $10,000 could be bought for, say, 40,000 marks. Today a mark is worth about six cents and a Berlin draft on New York for $10,000 would cost about 160,000 marks. In other words, the disrupted condition of foreign exchange costs this Berlin merchant 120,000 marks.

"This is what is meant when the financial journals say the 'foreign exchange situation is very bad.' It is very bad and it will not be remedied easily or soon. We have mentioned the German exchange rate because it is extreme and illustrates the situation clearly. It is quite evident that the rate of exchange even if it were the only obstacle, would in itself be a potent barrier in preventing Germany from buying here. In less degree this is true of England, France, Italy, Belgium and most other European countries.

"The causes are: the acute necessity for food, raw materials and machinery vital to the resumption of their industry and trade, the fact that they have at present neither money nor goods which they can send us in exchange and, more than all, currency inflation. In consequence of these various causes, the tendency in those countries is to buy from us as little as possible and to sell us all they can. Thus we find London comparatively calm over the exchange situation as it compels rigid economy, stimulates exports, shuts out imports and hastens the solution of its own financial difficulties.

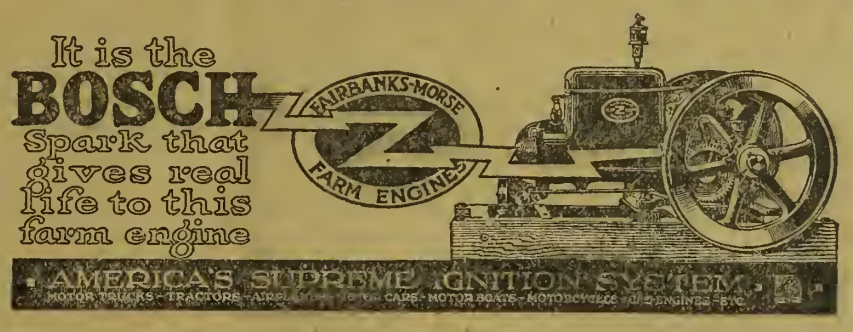
"The following table shows current rates of exchange early in August compared with par:

		Par	Present Rate	Disc. Pct.
Germany	Mark	.2382	.0725	70
Italy	Lire	.1930	.1168	39
Belgium	Francs	.1930	.1360	29½
France	Francs	.1930	.1392	28
England	Pounds	4.8665	4.3650	10
Switzerland	Francs	.1930	.1785	7¼
Holland	Florin	.4020	.3775	6
Denmark	Kroner	.2680	.2225	17
Norway	Kroner	.2680	.2375	11
Sweden	Kroner	.2680	.2475	7.6

"The extent to which these declines are attributable to inflation cannot be definitely measured, but it is certain that the greatest decline occurs where there has been the greatest inflation. The German Imperial Bank's note issue in August, 1914, was about two billion marks. In five years the amount of the note issue has risen to about 26 billion marks, and with the fall in the value of the mark to about one-fourth of its previous value, the price of commodities has proportionately risen.

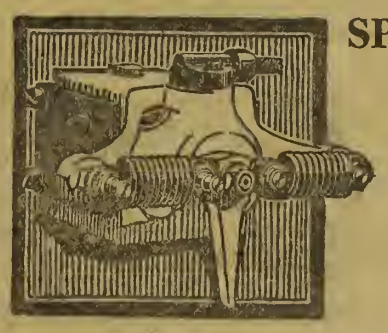
"The problem is so complex that no simple or immediate solution is possible. Restoration of inflated currencies to something like normal conditions will take years of readjustment. Restoration of comparatively normal trade and industrial conditions will go far towards stablizing foreign exchange, and this is possible of early accomplishment. Europe is in dire need of almost every commodity of which we have a surplus, and unless we provide a way for her to buy she will starve while our abundant sup-

Announcement



Largest Magneto order goes to Bosch
Fairbanks-Morse "Z" engine
Bosch High Tension Magneto Equipt

IN the thirty-fourth year of its successful manufacture of dependable gas engines, Fairbanks, Morse & Co., after conducting the most complete investigation of ignition systems, has decided to equip its famous "Z" engines with America's Supreme Ignition System—the Bosch High Tension Magneto. Thus, the products of two internationally famous organizations—Fairbanks, Morse & Co., engine builders, and the American Bosch Magneto Corporation, magneto makers, combine to make a really great farm engine—an engine whose quality, dependability, and efficiency have no superior. The reason that prompted Fairbanks, Morse & Co. to specify Bosch—the highest priced and highest quality Ignition System made—on their most important product, applies equally directly to your ignition problems on your car, truck or tractor.

BE SATISFIED  SPECIFY BOSCH

AMERICAN BOSCH MAGNETO CORPORATION
MAIN OFFICE AND WORKS: SPRINGFIELD, MASS.
Branches: New York—Chicago—Detroit—San Francisco
More Than 200 Bosch Service Stations in Over 200 Cities
ASK ANY FAIRBANKS-MORSE DEALER FOR NEAREST BOSCH SERVICE STATION

Powerful on Soft Ground

The twin crawlers of the Bates Steel Mule lay a firm runway on the soft ground which runway is held from slipping by twenty-four cleats. This runway has a ground pressure of less than 3½ pounds per square inch and being geared to it, the tractor pulls as big a load on soft ground as it can on firm footing.

The absence of slipping is one of the many factors that go to make the Bates Steel Mule unusually economical in fuel. This feature, combined with the unit construction; Timken roller bearings; hardened cut gears running in oil; and heavy-duty valve-in-head kerosene motor, contributes to the great efficiency of this tractor.

Built of steel and fitted with large Timkan and Hyatt Roller bearings throughout.

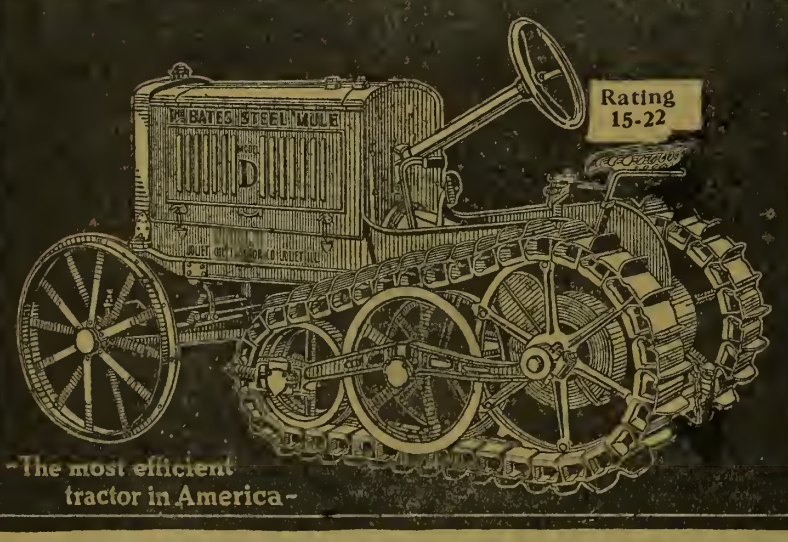
In all tractor demonstrations on hard and soft soil the Bates Steel Mule has attracted interested crowds and this year the new Model D promises to excel former demonstration performances.

Don't fail to see the New Model D Bates Steel Mule at Los Angeles Sept. 16 to 21, 1919.

F. T. Briles
So. California Distributor
214-216 No. Los Angeles St.
Los Angeles, Cal.

J. M. Conley Co., Inc.
No. California Distributor
417-423 East Weber Ave.
Stockton, Cal.

Some valuable territory open with excellent agency proposition.



Important to Dairymen and Stockmen

You will be interested in our demonstration plot of

MILLETS	GRASSES	SORGHUMS
Pearl Millet	*Para	*Wonder Forage
*Broom Corn	*Napier	Japanese Sugar Cane
Hog Millet	Guinea	*Silver Tip Sorghum
Red Millet	Cocksfoot	Ribbon Cane
Japanese Millet	*Fog	Honey Sorghum
Biloxi Soy Beans	Paspalum Dilatatum	Shallu
Golden Millet	Billion Dollar Grass	Feterita
Brown-top Millet	*Rhodes	White Milo
Chinese Millet	Natal	Egyptian Corn
Indian Millet	Bromus Enermis	*Schroch Kaffir Sorghum
White Wonder Millet	*Merker	Dwarf Milo
Large Headed Millet	Red Top	Sudan
	Perennial Rye	Kaoliangs
	Italian Rye	
	*Smilo Grass	
	Teff Grass	

The varieties marked * are by far the most valuable. Be sure to see them growing on the 1500 block West 16th Street, Los Angeles. Send at once for our bulletin describing each one.

AGGELER & MUSSER SEED CO.

620 South Spring Street LOS ANGELES, CALIF.

FORD OWNERS! Try "FOR-DO" 10 DAYS FREE!

Works wonders on Ford cars. Gives engine more power, more "pep," more speed. Gives 4 to 6 miles more per gallon. Enables you to locate engine trouble instantly. Overcomes all spark plug troubles. Doubles life and service of plugs. Makes old, cracked or worn out plugs spark like new. More than 50,000 put on Ford cars in last three months. Let us send one for you to try 10 days free on your Ford.

Send No Money! Just send us your name and address, and we will send you "For-do" complete, postpaid, ready to attach. You can put it on in 3 minutes. No changes necessary in car or engine, no holes to bore, easier to put on than plugs. Use "For-do" 10 days Free. If you find it does everything we claim, and you want to keep it, send only $3. If you are not pleased, just say so—mail it back and no charge will be made. We take all the risk. Send today.

G. E. COLBY CO., Inc., 28 N. 8th Ave., Maywood, Ill.

plies rot on our hands. To provide an adequate credit system for her is one of our gravest problems. It is not only a humane duty, but a commercial necessity. It is another of the many vital steps toward saving civilization from Bolshevism.

"If such a scheme, sufficiently comprehensive, elastic and safe, can be devised Europe can proceed to rehabilitate itself, and a long step will have been taken toward peace in the economic world. Most strenuous efforts have been made by the bankers of the United States in this direction, but the bankers alone are unable to cope with it. They need the cooperation of every element in the nation; of industry, of trade and of the government, and it is to be regretted that so far these efforts have met with indifferent support. It is a national as well as international problem and may require a national campaign, possibly on the plan of our Liberty Loan campaigns, to get the desired result.

"An international conference which has been called by the Chamber of Commerce of the United States to discuss the subject will meet at Atlantic City on October 5. As the principal European nations will send representatives, it will be a notable convention and should make an effective beginning."

STATE FAIR

Continued from Page 327

plaza in front of the new $300,000 horticultural building, and the entire scene is one of surprising activity. Our imagination is whetted to the keenest edge; we are eager for the sights, which means that we are eager to see what man, in the genius of his efforts and the labors of his factory has wrought for our edification.

To the left is the automobile tent. A tour through its highways and bypaths reveals a most splendid sight in artistic development in automobile manufacturing. Cars are there in all sizes, all colors and all makes. From the little popular four cylinder touring model to the big $5.000 machine they are all there in their several gradations of size and cost. A Curtiss biplane occupied a prominent place in the auto tent. Its cost was $3,250 and the statement accompanied the plane that the purchaser would be given a ride home after the fair.

But we want immediately to enter into the really practical exhibits of the fair, and we will move over to the two mammoth tents which house the very complete display of the California Tractor and Implement Association. We can review but briefly some of the tractors and trust to the reader's imagination to form a conception of the entire exhibit.

The Lauson tractor we found arranged in a quite satisfactory manner for complete examination. Running parts were entirely exposed. A special feature of this tractor is the filtering attachment which clarifies the air before it enters the mixing chamber. This obviates the possibility of dust and dirt collecting in the carburetor and may prevent serious cost and expensive delays.

The new Four Drive tractor was shown to Californians for the first time. It is constructed with a worm gear on the rear axle and crome nickel bevel gears on the front axle. The wheel base is seven feet and two inches, width five feet and nine inches, and it will turn in a fifteen foot circle. As its name implies, the power is delivered to all four wheels, each wheel carrying its full share of the weight.

The Yuba Manufacturing Company showed a new adaptation of their 20-35 model. It has a larger motor, giving 22 per cent more power, and is designed for work in beet and hop fields. Extension treads are fitted for work in soft ground or in the rice fields. Their two smaller models completed a very practical exhibit.

The Stockton tractor is another new comer. It has a length of 96 inches, width 42 inches, height 52 inches and weighs 3,150 pounds. It is a light, sturdy and simply constructed farm tractor and should prove quite popular with the average California farmer.

Occupying a prominent place in the center of the tent was the full line of Avery tractors from the mammoth 40-80 down to the baby of the bunch, the little 5-10 model which retails at $775. This latter is a very practical and serviceable model that will use kerosene as well as gasoline, making it very economical. Its wheel base is 78 inches and the weight 2,600 pounds.

One of the most attractive displays was that of the Holt Manufacturing Company. Their big 75 was shown with all parts exposed, and the big machinery was propelled by motor power. A competent instructor gave full details covering the various working parts and the proper method of successful manipulation. Accompanying the tractor was their combined harvester and the mammoth land leveler.

After two years and thousands of dollars were spent in designing and perfecting the Victory tractor it was placed before the interested public with the assurance of simplicity, reliability and efficiency. This tractor had its initial baptism of critical analysis at the hands of prospective tractor buyers, who viewed it with keen interest at this year's state fair. It is light in weight but possesses reserve power; it is the 9-18 size, two wheel drive with a single guide wheel.

The All Work tractor is another of the several new machines that were shown for the first time this season. It is built especially for orchard work but has an abundance of belt power. It is 12-22, has a heavy duty four cylinder, 4x6 kerosene motor, a wheel base of 75 inches and weighs 4,500 pounds. The frame is of channel steel construction, reinforced with steel angles in all corners and hot riveted.

The Bean Track Pull tractor, as its name implies, pulls its single center track which is the same type as a roller chain. It rolls easily and does away with the necessity of oil in track lubrication. The rollers run on antifriction bearings; the transmission is oil tight and no power is wasted. It is of the 6-10 type, with a speed of two miles per hour and a gear ratio of 45 to 1. It weighs 3,200 pounds and has a length over all of 102 inches.

The new Monarch 8-16 is a popular small type tractor very similar to the original 18-30 and is especially adapted to orchard and vineyard work. The main working parts are straddle of the two track layer wheels which gives great steadiness to the machine.

The Waterloo Boy, a product of the John Deere factory, is a 12-25 model. It has a speed of 400 to 750 revolutions a minute and a pully 14x8 inches. The twin cylinders are cast in bloc and surrounded by large water jackets. The wheel base is 90 inches.

One of the most out-of-the-ordinary tractors shown at the state fair was the Linn. It is a combination of a truck and tractor, a kind of half truck, half tractor. A spacious load carrying platform fits over the track layer wheels and the front has the appearance of being a very sturdy truck. The front wheels are regulation truck wheels; the hood and radiator are similar to those on a truck and the cab affords a comfortable seat for the driver. The tractor is designed for hauling great weights as a regular load, while it will at the same time serve as a powerful draw.

The new 12-20 Twin City embodies many modern tractor features. It is the latest addition to the Twin City line and meets the demand for a three plow tractor with plenty of surplus power. Among its features are the center balanced crank shaft, the removable cylinder head, removable cylinder walls and the ability to move the engine forward, leaving the clutch exposed for easy adjustment and repairs.

We cannot attempt to enumerate and describe all of the tractors that were shown at the state fair, for the number was greater than was ever placed on exhibition in the West, and the surprising feature was the number of entirely new tractors. As an educational feature the tractor exhibit takes high rank, for a careful study of the models and the explanations of the attendants placed one in a favorable position to comprehend the purpose of the tractor and to know its possibilities and its limitations.

As being co-workers with tractors, plows found a ready place in the tractor tent. Conspicuous among the showing was that of the Knapp Plow Works of San Jose. Their plows are made for the heaviest class of work and are particularly serviceable where deep plowing is required.

The Killefer Manufacturing Company was on hand with their mam-

moth deep sub-soil plow. It is of heavy steel construction, with main plates one inch thick and six inches broad. Only the heaviest and strongest tractors can pull it, for it plows several feet under ground.

But we must hasten along to review

Other Commercial Features

Occupying a conspicuous place in the tractor tent was the Rotary grain cleaner. It works upon an entirely different principle from the ordinary and old fashioned fanning mill. Its compelling feature is the operation of paralell vibrating wire screens, by which all kinds of seeds, including wheat, barley, oats and kafir corn are cleaned thoroughly and quickly. It is the only machine that will thoroughly clean water grass from rice. In fact it has been a revelation to rice men by solving the rice cleaning problem. The cleaner is operated by a one horse power engine and has a capacity of 30 sacks an hour.

In the dairy section the predominating feature was the exhibition of various types of milking machines. The alternating action of the new De Laval milker causes milk to be drawn from the two front teats, while the two rear teats are given a brief rest period and the rear reservoirs are filled. The next moment the rear reservoirs are emptied by the application of suction to the two rear teats and the front reservoirs are being filled. In this way an even and continuous flow of milk is drawn from the udder. The even, alternating action of the udder pulsator is as regular as the power running the Pulso pump and cannot be interfered with by the operator. While the action of the pulsator and teat cups is positive and snappy, it is also uniform, gentle and pleasing to the cow. Besides the new milking machine the exhibit contained a full line of dairy supplies, barn equipment, Alamo engines and Acme feed cutters.

The Universal Milking Machine was shown by the California Hydraulic Engineering and Supply Company of San Francisco. The greatest advantage which the Universal has is the alternating pulsator. This is a three movement vacuum engine without mechanical complications and with nothing to get out of order. This device enables the machine to milk two teats alternately, thus closely approximating the natural way of milking. It gives an even, steady running motion and requires less vacuum and therefore less power. The rubber inflation expands and contracts with each stroke of the piston in the pulsator.

In the large booth of the above company was also a full line of their sanitary barn equipment, Duro pressure water systems, Alamo farm lighting plants and the famous American pumps.

The Calf Way milker is the embodiment of a distinct and patented principle. It seeks to imitate the action of the calf in drawing milk. Aside from the natural suction which the calf exerts, he also by the tongue closes the upper part of the teat and presses the milk out. The Calf Way performs this service. The top part of the cup closes first and the closing gradually proceeds downward until the milk is entirely drawn out. It is also similar to the action of the human hand.

In the main hall of the new horticultural building we observed in one of the booths the results of the application of bacteria as furnished by the Western Soil Bacteria Company of San Francisco. Sodium, silicon and aluminum are found in plants, but not considered essential to successful growth. When all conditions favorable to the best growth of plants have been furnished, with the exception that some one essential element is supplied only to a limited extent, the plants never develop beyond the point made possible by the element which was limited in supply. Applying this principle to crop production, it means no matter how favorable the water supply, the tilth or the other essential elements, the harvest will never exceed the limitations of the element least available in amount required of it. In the western states it is generally admitted that the plant food that is most generally the limiting factor is nitrogen, caused by our long, hot summers, as well as by leaching and washing. If nitrogen is the limiting factor bacteria will take it from the air above your ranch and deposit it in your soil.

In the comparison which comprised a large part of the exhibit, the beneficial effects were clearly shown. Alfalfa, oats, sweet clover and other plants showed wonderful growth when aided by nitrogen gathering bacteria

Every farm home and every barn and outhouse may profitably and economically be lighted by electricity through the various lighting systems that are available. The Delco exhibit was most complete in every detail. The system consists of an engine, generator and switch board built as a compact unit, and this unit, with the addition of the storage battery, comprises the complete equipment. The engine runs on kerosene, gas or gasoline. The electricity is used only from the storage battery and the engine is run only to recharge the batteries. In this way there is given a 24 hour electric service which may be made available in all parts of the house and out-buildings. The power may also be used for running the washing machine, cream separator, sewing machine, electric iron, carpet sweeper, in fact it will run any device that can be attached to the ordinary electric supply.

When our readers consider that we have been able to enumerate only a very small portion of the valuable commercial features of the state fair they will readily appreciate what a fund of information, of advancement, of progress and of improvement may be gained by a visit to that annual state show.

TUT! TUT!

"Oh! be not hasty, friend," I cried.
"Think twice o'er all you utter."
"I'm bound to do so," he replied,
"Because I stut-tut-tutter!"—Cartoons Magazine.

Daily reports on road conditions are now made a regular part of the service of the weather bureau in several of the states. The bureau expects to extend this service as rapidly as possible to other sections.

FREE

$3000 BOOK OF BARN PLANS

Going to build or remodel a barn? Then send for this book. 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Cost over $3,000 to compile. Yours free—for the asking.

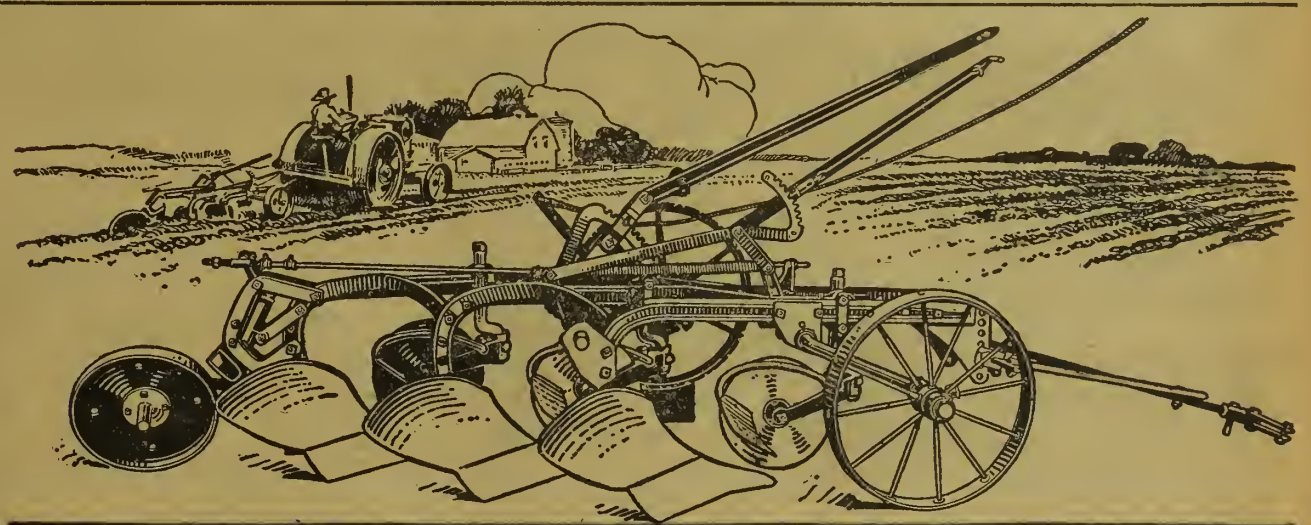
AND WE WILL ALSO SEND YOU THE COMPLETE LOUDEN CATALOG of modern sanitary barn equipment. Send for these two valuable books today.

LOUDEN BALANCE GRAPPLE HAY FORK

Lifts an enormous load. Binds it tight. Drops it clean. Spreads it well in the mow. Leaves no litterings to be cleaned up with a pitchfork. Three or four fork-fulls clear the rack. PERFECTLY BALANCED, slender but strong, will not bend or break. A money-saver in haying time.

AMERICAN PUMP CO.

73 Fremont St. SAN FRANCISCO
Dept. B, 420 East Third St. LOS ANGELES



When You Choose Your Tractor Plow

USE the same good judgment that you have always used in choosing your horse-drawn plows. Don't let the prospect of using a tractor make you forget the importance of the plow. Your tractor will only pull. It will merely take the place of horses. The direct work of making the seed bed will still be up to the plow. And making good seed beds is what you're after. Make sure of especially satisfactory work behind your tractor by choosing a

JOHN DEERE TRACTOR PLOW

Remember—
John Deere Tractor Plows are backed by 82 years of successful experience in plow-making. They are built to maintain and increase the reputation for good work and long life that John Deere Plows have established among farmers everywhere.

Sizes
Two-Bottom
Three-Bottom
Four-Bottom

Equipped With Genuine John Deere Bottoms—The kind that has an established world-wide reputation for long wear, good scouring and thorough seedbed making. You can get the shape and type suited to your soil.

Holds to Its Work at Uniform Depth—It is locked into the ground at plowing depth through the action of the power lift. The land wheel is set back, balancing the weight of the plow over all three wheels, just as on your sulky or gang plow. Makes plow run steady and assures plowing at uniform depth in uneven ground.

Quick Detachable Shares—Strong and close fitting. Loosen one nut to remove the share. Tighten the same nut and the share is on tight. It *stays tight.*

Extra Strong Construction—Extra heavy beams of special John Deere steel. We guarantee them not to bend or break. Heavy beam braces, long lapped and securely joined to beam with heavy bolts and lock washers.

High and Level Power Lift—Lifting mechanism is simple, strong and positive. Parts move only when plow is being lifted or lowered—practically no wear.

Three Sizes—Two-bottom, three-bottom and four-bottom. One of the sizes suits your tractor. And, remember, the adjustable hitch adapts the plow for use with any standard tractor.

Farmers Everywhere are making sure of continued good plow service behind their tractor by getting John Deere Tractor Plows. You can't afford to get less than that behind your tractor. See these plows at your John Deere dealer's store. We will be glad to send you a folder describing them. Ask for folder TP-34.

John Deere Plow Co.
San Francisco, Calif.
Portland, Ore.

GET QUALITY AND SERVICE — JOHN DEERE DEALERS GIVE BOTH

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mati replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Second Mortgage

I am selling land to my neighbor who is to pay me one-half cash and the balance upon a mortgage. To make the cash payment he gives a first mortgage to a third party on my land as well as 20 acres of his land, and gives me a second mortgage on the same land. The second mortgage is to be paid in annual installments so that the last payment will be due at the time the first mortgage becomes due. Do I need any additional contract to secure my deferred payments? —Subscriber, Blythe.

A second mortgage may be drawn so that there would be no necessity of any further documents. The inquirer should understand, however, that if the second mortgage is properly drawn, upon the default of the payment of any installment, he would be entitled to foreclose; upon such foreclosure his land would of course be subject to the payment of the first mortgage.

Changing Name

Can one change his name legally, and if so how does he go about it and what does it cost? — Subscriber, Crockett.

Change of name is made by a petition filed in the superior court stating the place of birth, the residence of the petitioner, the present name, the name proposed, the reason for such change and the names of the father and near relatives and their place of residence. Upon the filing of petition the court issues an order directing all persons interested to appear at the time and the place specified and copy of this order must be published for four successive weeks in the newspapers. On the hearing the court may examine petitioner and such other persons and make the order to change the name or dismiss the application. In case the court orders the change of name a certified copy of this decree must be entered within 30 days in the office of the secretary of state. The costs would probably be in the neighborhood of $50 to $75.

Water Right

A stream of water which flows through my land has been used by me for irrigation, watering stock and domestic use for over 20 years. Pumping plants above are now drawing the stream so that I have no use of the water for periods of ten days at a time. Can I be deprived of this water? What recourse have I? — Subscriber, Ballard.

From the statement of the case, you apparently have a riparian right to this water which has been ripened into actual right by appropriation and use. It would therefore seem that your right is superior to that of those who are depriving you of the water, which would entitle you to maintain an action for injunction restraining the owners of these pumping plants from depriving you of the water which you are accustomed to have.

AERIAL FIRE PARTOL EXTENDED

The airplane forest fire patrol conducted in the national forests of California by the army air service in cooperation with the forest service of the United States department of agriculture has been extended to cover a portion of the forests in Oregon. Headquarters have been established at Salem, and the operating squadron for the present will consist of five officers and seven enlisted men operating eight airplanes. The city of Portland has donated a landing field and will construct a hangar. Patrol routes in the Oregon and Santiam forests are now being worked out.

One of the army aviators in the fire patrol work recently made a successful flight to the floor of the Yosemite Valley. To make a landing he had to gain an altitude of 11,000 feet and spiral down between the walls of the canyon which are 5000 feet high and a quarter of a mile apart. The landing was difficult because of high trees and wires. This exploit was of much interest to forest officers, as it is thought to have been a step toward the more extended use of airplanes in the forests, where landing places in the mountains are comparatively few.

PRODUCER TO CONSUMER

We have circular issued by the Quaker Farm Company at Alpine, San Diego County, in which suggestion is made of parcel post delivery to any part of the United States of pound boxes of shelled almonds, dried figs, and raisins. In this circular, which they send to prospective consumers, they say: "We place these delicacies in the hands of the consumers direct from our farms, saving dealer's profits in every case. These goods are excellent for use in cooking and baking, Christmas dinners, New Years, or any other day." Accompanying this is another circular, or rather leaflet, of recipes. It ought to lead to big business in a small way. Tasty packages with always dependable goods should place such a business on a permanent basis.

PAPER FROM COTTON HULLS

As a result of experiments conducted by the forest products laboratory United States department of agriculture, a good grade of paper is being produced in commercial quantities from cotton hull fiber. Pulp made from second-cut cotton linters and hull fiber, the forest specialists say, is well suited for the manufacture of book, writing, printing, blotting, cover, and other high grades of paper, and is equal in quality to the highest grades of paper stock.

Book Review

FARMERS' CLEAN MILK BOOK

"Farmers' Clean Milk Book," by Charles Edward North, published by John Wiley & Sons, New York.

It is not a very big book but is full of interest for the dairyman in these times of active demand on the part of the consumer. We quote from the preface as follows:

"This book shows why some milk contains millions of bacteria and how they get into it, and how easy it is to keep them out. It shows that the millionaire with his fancy barn has no monopoly on cleanliness, but that any farmer can produce milk which is just as clean as certified milk. It shows that the man himself is far more important than the dairy score card and that hundreds of farmers in many dairy districts are now making a business success of producing clean milk."

There are 132 pages, 26 chapters and many illustrations. Several chapters touch upon such subjects as Selling Milk; Bacteria; Bacterial Test; Milk in Udder; Cow Stable; Equipment; Clean Milking, etc.

BULKING THE GRAIN

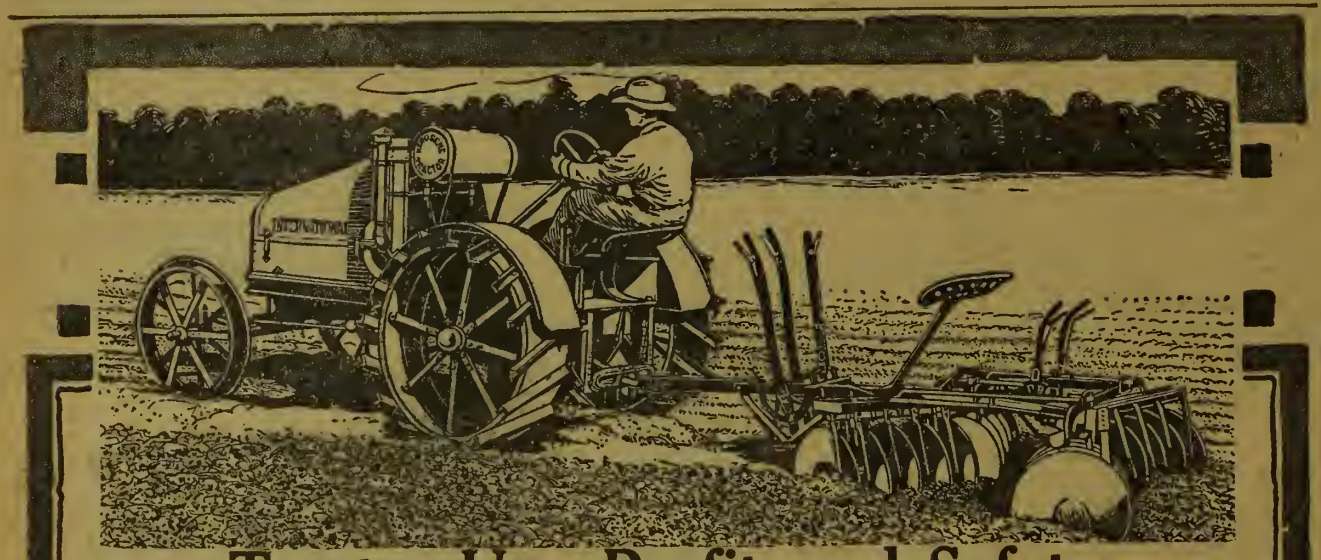
Time and money is being saved by more general bulk shipping this year than any preceding year. Shortage of labor has induced more general preparation for storage and handling of California grown grains. A believer in this method of grain handling writes:

"From three to four men can be saved on each harvester during harvest time by handling the grain in bulk from a hopper attached to a combined harvester from which grain is delivered into grain tight wagons, and from six to eight men at the warehouses where the grain is received and stored in sacks."

ALL BOOKS ARE NOT SO DRY

Card from a local station agent to a studious citizen:

"Sir—Please send, without delay, for the case of books directed to you, which is lying at this station and is leaking badly."—Office Economist.



Tractor Use, Profit, and Safety

TRUE progress is always slow. The change to mechanical power for farm work has been twelve years in the making, but today there are few American farmers who have not given serious thought to the question of tractorizing their farms.

For the benefit of those who may not yet be convinced that the tractor is a useful, profitable farm power machine, we present again a few of the opinions of farmers who are using the International Kerosene Tractor. Some of these are about essential features, and some mention only conveniences, but taking them altogether, almost any farmer will feel, after reading them, that the International 8-16 is a tractor worth considering.

"My International supplies a power flexible enough to handle the large amount of seedbed, harvest and other work without delay."

"It can be used for continuous work if emergency demands it."

"It produces power at much lower cost than horses, and it can be used for both drawbar and belt work."

"I like the steady way it works. Without seeming to hurry, it gets through a surprising amount of hard work."

"It does a lot of good work at a cost so low I could hardly believe it. You did a wonderful thing for Eastern farmers when you made this tractor to run on kerosene."

"It is not bothered by flies, nor by bumble bees. It works steadily on the hottest days."

"Requires very little care. When the day's work is done, I run the tractor tail first into an inexpensive shed. In the morning, I fill the fuel tank and the oiler, look into the radiator, and am ready for another day's work."

These opinions are typical. They prove at least that the International 8-16 is a useful, profitable tractor. Now consider just one other thought for a minute.

This tractor is the outgrowth of twelve years of active tractor experience by a company that has sold all kinds of farm machines for many years. The beginning of this business goes back to 1831—almost 88 years ago. Does it not seem reasonable that with this experience we should offer you a tractor that you could use with profit, especially when we expect to come back some day and sell you more of the machines listed in this advertisement?

If you are now convinced that the International 8-16 is a useful, profitable tractor on some farms, and that you don't have to be an expert to buy one safely, write us to find out what this tractor will do for you, on your farm. A post card will bring you full information.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders, Push Binders, Headers, Rice Binders, Harvester-Threshers, Reapers, Shockers, Threshers

Tillage Implements
Disk Harrows, Cultivators, Tractor Harrows, Spring-Tooth Harrows, Peg-Tooth Harrows, Orchard Harrows

Planting & Seeding Machines
Corn Planters, Corn Drills, Grain Drills, Broadcast Seeders, Alfalfa & Grass Seed Drills, Fertilizer & Lime Sowers

Haying Machines
Mowers, Tedders, Side Delivery Rakes, Loaders (All Types), Rakes, Combination Side Rakes and Tedders, Sweep Rakes, Stackers, Combination Sweep Rakes and Stackers, Baling Presses, Bunchers

Belt Machines
Ensilage Cutters, Huskers and Shredders, Corn Shellers, Threshers, Hay Presses, Stone Burr Mills

Belt Machines—Cont.
Cream Separators, Feed Grinders

Power Machines
Kerosene Engines, Gasoline Engines, Kerosene Tractors, Motor Trucks, Motor Cultivators

Corn Machines
Planters, Drills, Cultivators, Motor Cultivators, Binders, Pickers, Ensilage Cutters, Shellers, Huskers and Shredders

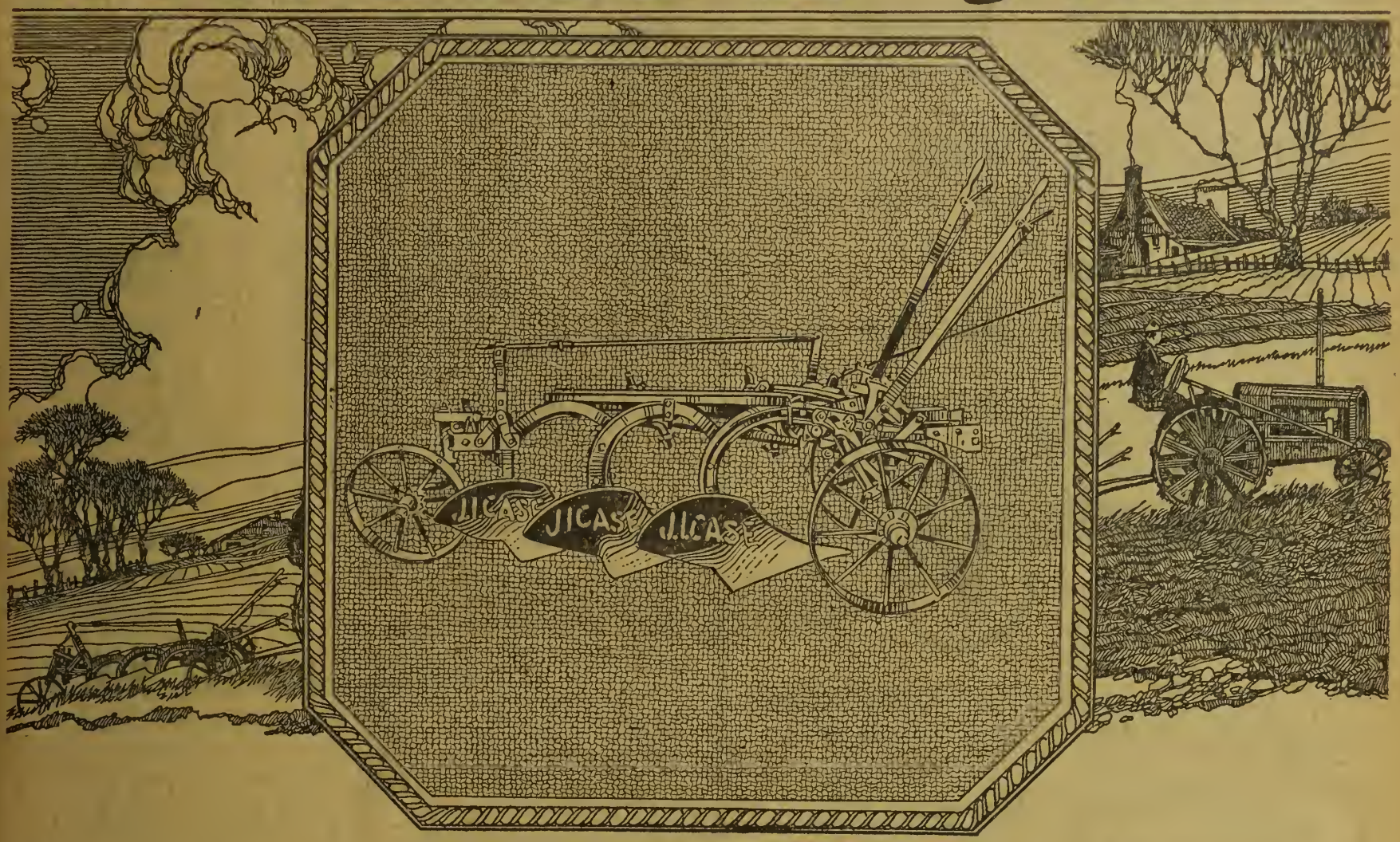
Dairy Equipment
Cream Separators (Hand), Cream Separators (Belted), Kerosene Engines, Gasoline Engines, Motor Trucks

Other Farm Equipment
Manure Spreaders, Straw Spreading Attach., Farm Wagons, Farm Trucks, Stalk Cutters, Knife Grinders, Tractor Hitches, Binder Twine

International Harvester Company of America
(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

J. I. CASE Tractor Plows



Case Plows Increase Your Tractor's Efficiency

The J. I. Case Tractor Plow combines the most advanced ideas in the design and building of modern power farming implements.

It includes a combination of tested and proved features that have set an entirely new standard of tractor efficiency.

J. I. Case Light Draft

Scientific design and high quality materials produce uniform depth and smoothness of furrow which result in extremely light draft. Weight is carried on dust-proof, easily lubricated wheels.

Because of the short-coupled design Case plows insure uniform work in uneven or irregular ground.

Raising and lowering the bottoms of a Case Plow does not change position of depth levers. Once set they require no further attention.

Beams, levers and all parts under strain are of high-carbon steel, well-braced at every point, giving a staunch, well-built, long-lived plow.

A Plow for Every Tractor

Case Tractor Plows are made in various sizes and types—standard, medium-duty and heavy-duty—adapting them for use with any tractor, and for any conditions of soil.

The 2-bottom, 12-inch model is ideal for farmers who have a light tractor. The 3-bottom, 14-inch is standard—may readily be changed to a 2-bottom if desired — and when reassembled fits perfectly—thus giving the user two plows at price of one.

We also furnish medium-duty and heavy-duty, power-lift plows in 2 to 4-bottoms, designed to be used as units or in combination for heaviest work and with the most powerful tractors.

88 Points of Inspection

Case inspectors check 88 points of construction before shipment. Every plow must pass this rigid test before being approved. We know of no other standard requirements so high as the Case.

The Case is the most popular plow on the market today, and because of its many splendid features is a favorite in all parts of the country.

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Your name and address on a post card will bring you a catalog of J. I. Case Power Farming Implements with full description of the famous J. I. Case Plows.

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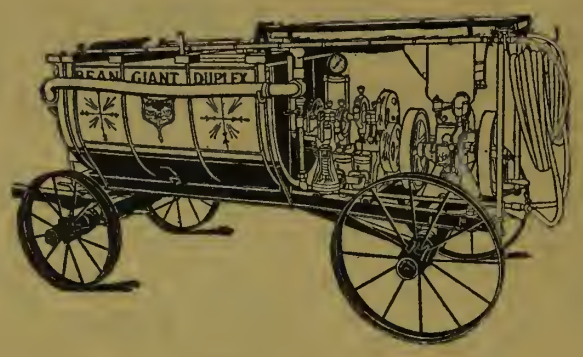

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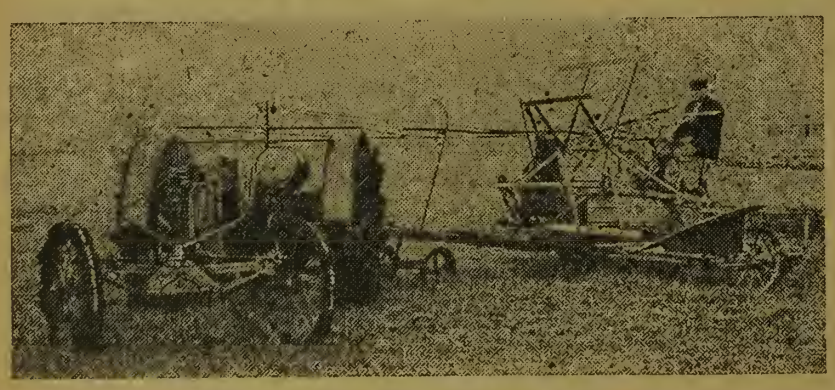

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Not only is it necessary for you to have a perfectly prepared seed bed for your wheat for insuring the biggest yield, but you should pack it well against winter killing with this new light draft roller-bearing

Brillion King *Team or Tractor* **Pulverizer**

Just the kind of implement agricultural experiment stations have specified for mulching top soil for quicker seed sprouting and growth of young plant, and for packing the undersoil for holding the proper moisture for the most rapid future growth of plant and greatest possible crop yield. Strong durable. Price reasonable.

AT ALL JOHN DEERE DEALERS

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

THE BUREAU OF MARKETS

Continued from Page 335

ating the bureau of markets from July, 1919, to July, 1920, was unmercifully slashed in committee hearings and finally passed carrying only a small fraction of the amount which had been available when the Pacific Coast offices had been opened. Consequently Portland, Seattle, Butte, San Francisco and several field stations were soon discontinued. The leased wire will probably be dropped from Kansas City west on the first of October and only a skeleton organization retained around which to rebuild should the farmers of the country who have been deprived of this service, make themselves heard in Washington. The office space in Los Angeles has been curtailed and the force cut down. A few bulletins are still being issued under the direction of C. J. Hansen who is now in charge of the office, but what will happen after October 1 no one will venture to say.

The grower is only able to know if he is receiving a fair price for his product when he knows what it is actually selling for in the Eastern markets. He has learned that he cannot depend upon this information when handed out to him by the man who wants to buy his crop, and the ordinary quotations in trade papers are usually too old to be of value when he sees them. In most cases he can not afford to get telegraphic advices even if there were some disinterested source to send them. Quick, reliable and comprehensive market information was his for the asking every day when the bureau of markets was in full operation.

To the grower who is a member of a strongly organized cooperative enterprise which itself furnishes this information, the reports of the bureau of markets were of little value. For that reason when the Los Angeles office was opened, no effort was made to issue bulletins on oranges or lemons because the growers themselves keep constantly posted on market conditions through the information supplied by their association. The work of the bureau of markets particularly benefited the disorganized producers, and they are naturally the last ones to make a concerted complaint against the discontinuance of such a service.

It is a significant fact that since it became evident that the bureau's activities would be curtailed, a great many of the men have resigned to accept more lucrative employment in commercial firms who in general have been quick to appreciate the intimate knowledge of distribution and marketing methods gained by these former government employes. Unlike so many of the government activities, training in the bureau of markets fitted the men eminently well for work in actual business with the firms with which they constantly came in contact.

In the opinion of many men both in and out of the government service, the limiting of the activties of the bureau of markets at this time has been a serious blunder. It is a mistaken effort at economy to cripple a service which has been of such notable assistance to the farmers in enabling them to secure a large proportion of the consumer's dollar.

PAINT YOUR PORCH CHAIRS

It should be remembered that porch furniture is subjected to out of door weather conditions. That means it should be protected by a good coat of paint; otherwise it cannot be expected to look clean and neat, nor will they last as long as they should.

A porch furniture enamel should be used if thorough satisfaction is desired. It is designed to meet all the weather and wear conditions to which outdoor furniture is exposed, at the same time producing a hard smooth surface that will not soften or become sticky, thus protecting the clothing of those enjoying the open air.

In applying porch chair enamel, care should be taken to brush it out well so that an even coating may be produced. Where the enamel is applied too freely it is apt to sag or form blisters, thus retarding the drying in such places, and will, in all probability stain the clothing of the one sitting on the chair, even though the chair is dry and hard everywhere else.

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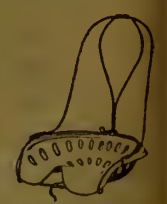

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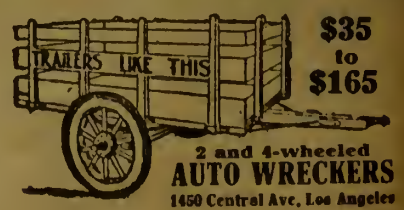

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(Formerly known as the "Cleveland" Tractor)

The Embodiment of Compact Power—

More kinds of work
More days in the year

THE Cletrac Tank-Type Tractor is only 96 inches long, 52 inches high and 50 inches wide. *But in spite of its small size it will do the work of six horses or mules*—and has a speed of from forty to fifty per cent *greater* than the *average* tractor.

It is the embodiment of compact power. It produces food but consumes none of it. It never gets tired. Unaffected by heat. It works all day—and all night too if necessary.

More kinds of work, more days

It does better, quicker, cheaper work—and does it *twelve months in the year.*

Plowing is *only the beginning* of its work. It harrows, plants and reaps, binds, threshes and hauls, grades, saws, and fills silos, spreads manure, digs potatoes and does practically all the other jobs formerly done by animal and stationary power.

Can be used on the seed bed

Because of its distinctive tracklaying construction the Cletrac is specially adapted to seed bed work. Eight hundred square inches of traction surface enable it to go over soft plowed ground or moist or sandy surfaces *without sinking in and without packing down the soil*—two invaluable assets not found in the ordinary tractor—two assets essential in the proper preparation of the seed bed.

Ideal for orchard and hill work

The tank-type construction of the Cletrac gives it a tremendous advantage in doing side hill work, or in climbing steep grades.

Its small size and short turning radius enable it to go under and among small trees and are largely responsible for its pronounced preference among orchard owners. A million farmers and orchardists can profitably use the Cletrac twelve months in the year.

An economical tractor—burns kerosene

The Cletrac operates on a surprisingly small amount of gasoline, distillate or kerosene, but is specially designed to use kerosene. It takes less space in your barn than a horse. It eats only when it works.

Sales and Service go together

Our sales and service organizations go hand in hand. Wherever you can get the Cletrac you can get genuine Cletrac service backed up by the strength and reputation of The Cleveland Tractor Company.

Early ordering is essential, as we cannot promise prompt delivery very far ahead. See your Cletrac dealer *now*, or write us for information. We have a very interesting booklet *"Selecting Your Tractor"* that will give you much valuable information on tractor farming. Write for your copy *today.*

The Cleveland Tractor Co.

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Largest producers of tank-type tractors in the world

The LAUSON Leads

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In the most remarkable, sensational showing ever made by wheel type tractors, the LAUSON carried off first honors over other *wheel type* tractors at Walla Walla. The LAUSON negotiated the 35% grade and the 43% side hill with ease.

The LAUSON pulled three 14-inch mold-board plows to an average depth of 7 inches without a stop or delay for repair of any kind and operated throughout the demonstration on kerosene. This proves again that the LAUSON has surplus power, greater stamina, more efficiency at the drawbar, better distribution of weight, greater ease of handling. If you are thinking about buying a tractor, find out *why* the LAUSON is known as **"The Pattern Tractor of the Industry."**

There are 24 sets of Hyatt and Timken roller and ball bearings which make the LAUSON the FULL JEWEL TRACTOR

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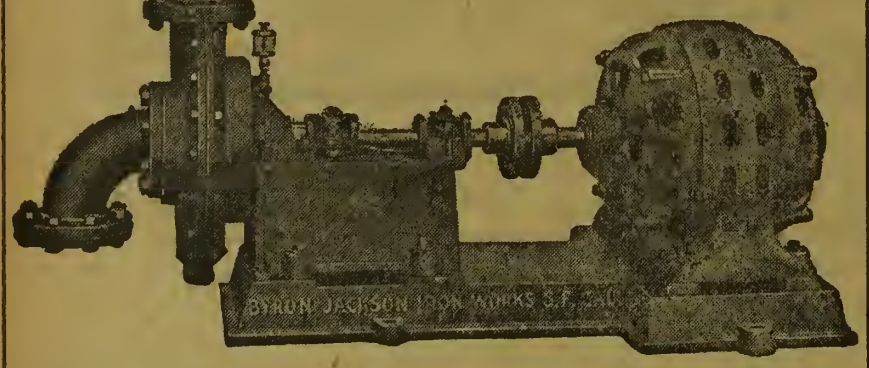
THE JOHN LAUSON MFG. CO.
New Holstein, Wis.

Write for interesting Tractor Bulletin No. 63



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If not, Why not?

The difference between a "live" and a "dead" Ranch is "Water" and "No Water."

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Write us giving your water conditions and requirements.
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IRRIGATION SYSTEM

Neither alfalfa nor orchard cultivation can be conducted advantageously without an efficient Irrigation System Now is the time to install your system as all indications point to much higher prices in the very near future. Don't delay, but write today for literature and any information you may require on the subject of Irrigation. The advice of our experts is yours for the asking.

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Keeping the "Rub" in Rubber

By James De Camp

EVERY veteran motorist remembers a time in his driving career when, following an epidemic of flat tires and blowouts, he has felt like telling the world that his car could be bought for 30 cents, cash or terms, with gloves and goggles thrown in for good measure.

It seems that all car owners must pass through this slough of despondency before realizing that it is a good policy to anticipate and prepare for their tire troubles. Some swear that blowouts and tube rips, like bananas, come in bunches. They attach a superstitious significance to this grouping together of disasters although they are heartily amused at the man who carries a rabbit's foot for his rheumatism and will not walk under a ladder. There is no secret behind a "streak" of tire trouble. It comes from uniform abuse of one's rubber or aging of the tire equipment. Casings and tubes of like quality installed on or about the same date will age at a certain rate and go to pieces within a few weeks of each other.

We do not wear a suit of clothes month after month and year after year until some fine evening we are obliged to walk home inside of a barrel. Yet many car owners drift along on a set of tires that have developed serious defects through abuse or are far past their period of usefulness without giving the least thought to the matter until a fusillade of explosions causes a crisis.

The war, scarcity of rubber and the correspondingly higher cost of casings and tubes have made it imperative to stretch every dollar expended for tire equipment over the greatest possible number of miles. By using a bit of common sense many are simultaneously reducing their rubber bills and securing better service.

There are two cardinal sins committed by the American motorist which result in the wasting of hundreds of thousands of dollars annually. These twin counts, on which we stand convicted by our own confession, are the carrying of spare tires unprotected and the keeping of loose tubes in the tool compartment.

Tire covers are not expensive when compared to the saving they effect, yet many otherwise sane persons will permit sun and rain to extract a thousand miles of service from the "spare" before it touches the road. This practice is just about as consistent as inviting a thug to pick one's pockets. The extra tires should not be kept inflated to full pressure while on the rack. With medium sizes 40 or 50 pounds will suffice to carry the car to the next air station after the spare has been put in service.

Twenty-four hours of shuffling about in the tool box is the equivalent of a full month's wear on an inner tube. Many new tubes become absolutely worthless from contact with sharp tools and constant rubbing against projections. Extra inner tubes should be carried in the special tube bags made for the purpose or properly folded and wrapped tightly in several thicknesses of heavy paper. Tubes carried for a length of time should be inspected occasionally and re-folded to bring the creases at new points.

There are hundreds of outfits on the market for the repair of inner tubes. Experience shows that when the rent is on the outside of the tube the home-made job of patching is usually satisfactory. When the trouble is located in that part of the tube next the rim it invariably saves trouble to have the repairing done at a vulcanizing shop.

An occasional inspection of the casings will forestall nine-tenths of the trouble from that source. Just as the tiny discolored spot on a tooth gradually spreads to cause distress and pain the small cut or rent in the tread will develop into something more serious unless repairod at once. Clean tho cuts thoroughly and fill them with patching cement, repair gum or some such product made for the purpose. The few minutes thus invested will yield compound dividends in time and expense saved later. If permitted to remain open cuts may fill with sand and mud, this foreign matter working in between tread and fabric and forming unsightly "blisters" and "boils" which result in blowouts.

Blowouts are the bugaboo of motoring. Among their possible causes are under-inflation, overloading, blows and and bruises, moisture getting to the fabric through unrepaired cuts and plain defects in the construction of the tire. The latter possibility has been almost entirely eliminated by improved methods of manufacture.

Tire manufacturers state that three-fourths of the casings returned to them for repairs and adjustments give evidence of inadequate inflation. Compared to the weight which it has to support and the shocks and blows which it must stand up to the casing is but a frail shell. Its inner support is the air with which it is filled. When the manufacturer states on the outside of the tire that a certain number of pounds of air should be kept inside he knows what he is talking about. When a tire is driven with insufficient pressure inside the walls of the casing bend back and forth, causing friction and developing weak spots in the fabric. The principle is exactly the same as that of folding and unfolding a piece of wire until it parts in the center. Ultimately something gives way and there is grief in the family.

It will often be observed that one tire is wearing down its tread more rapidly than the others on the machine. In seeking the cause of this the first point is to be certain that your wheels are in perfect alignment. New casings have been known to go to pieces in 500 miles when mounted on wheels out of true. If the tire in question is on the rear the brakes should be carefully inspected, since it is highly probable that the worn casing is stopping more than its share of the load. Unless one is experienced at this work it is advisable to have all brake adjustments made by an expert mechanic.

When the rear tires begin to show unmistakable signs of wear and those on the front are yet in good shape the pairs should be shifted. Such a change affords ideal opportunity to inspect all the casings thoroughly, mending cuts and probing for bits of rock, metal or other foreign matter that may have penetrated the tread and be working toward the fabric.

Grease and oil have a marked deadening effect on the resiliency and resistance of rubber, making it flabby and jelly-like. If your rear axle throws grease remove the cause at once and clean the surface of the tread thoroughly with gasoline.

The immense growth of the automobile industry has caused the formation of organized gangs of tire thieves. These criminals are reaping a heavy harvest, especially on the Pacific Coast, specializing on popular sizes such as the 34 by 4 casing. When owners have marked their property with an unmistakable sign of identification the police can very frequently recover it for them. The most effective method is to place the owner's name or some symbol on all tubes and the inside of each casing with a moistened indelible pencil. Carrying a good spare tire unprotected by padlock is an open invitation to this brand of crook.

Here are a few tire tips to paste in your hat:

Remove skid chains as soon as possible after a rain.

Keep off car tracks and out of ruts.

Do not overload.

Cover your spare tire.

Use plenty of air.

Keep an air-guage handy.

Dust inside of casings with talc before inserting tubes.

Repair cuts promptly.

Avoid sudden stops.

Keep grease and oil away from rubber.

Test supposed leaky valves with a cup of wator.

Replace tho old rubber bofore it becomes entirely useless.

THE TRUCK, THE TRACTOR AND BETTER ROADS

By E. A. Williams, Jr.

The truck, the tractor and good roads!

In a combination of these factors lies the solution to one of our greatest economic problems, the production and marketing of the world's food supply.

With the crying need for food in the war stricken countries of Europe and the never ceasing demand in those lands not vitally affected it is evident that the world's agricultural resources must be worked to the utmost to meet the existing emergency

We realize, after glancing at the daily market prices, that every American citizen is making contribution to this campaign. We do this uncomplainingly because we think the cause is just and our duty plain, yet we are begining to wonder just how long these conditions are going to exist before a remedy is found.

The truck and the tractor, aided by improved highways, hold the solution. Just as in the recent war the truck and tractor came to the fore and made themselves prominent factors in the allied victory, they are destined to become even greater factors in the era of reconstruction.

Manufacturers of dairy products are using the truck extensively both for the collection of materials through the farming districts and the delivery of their finished products to city customers.

A statistician has estimated that more than 100,000 tractors are in operation on the farms of the Unfied States at the present time, an increase of more than 50 per cent over those in use at the beginning of 1918. The reputation these sturdy little machines have gained during the war assures a greater demand for them in the coming year. With their more universal adoption will come increased acreage and greater crops. This will call for better transportation facilities and improved roads.

The truck already is playing a conspicuous part in the transportation of commodities. Its possibilities in this field have ceased to be a matter of the future, although it is yet in the primary stages of development.

STANDARDIZING SWEET POTATOES

Some of the Portuguese sweet potato raisers in Stanislaus County are rebelling at the regulations imposed by the standardization law. In announcing a meeting of growers and of state standardization officials the Turlock Journal says:

"Portuguese sweet potato growers are up in arms against the proposed standardization rules submitted by Horticultural Commissioner Arthur E. Beers of Merced County, and will fight their adoption at the meeting. They claim that if the drastic regulations are adopted it will drive them out of business and some of them have threatened not to plant any more sweet spuds if the regulations go into effect.

"County Horticultural Commissioner A. L. Rutherford declares that the Portuguese growers are working under a misunderstanding. The rules have not yet been adopted and if the protesting growers are in a majority, there will be a modification.

"Beers' proposal is that there shall be four grades of sweet potatoes. Many of the growers declare that this is too strict and advocate only two classifications. The No. 1 grade should include potatoes from 1½ to 3½ inches in diameter and No. 2 grade should include spuds that are over sized or slightly affected by worms or disease, they ask. Small potatoes can be sold to canneries as by-products.

"'The object of the meeting Tuesday,' says Rutherford, 'is to give the growers an opportunity to decide what regulation they desire. We are not trying to force anything on them that they do not want and which is against their best interests. Unless more than 50 per cent of the sweet potato men of the Turlock section are represented the rules will not be binding upon them.'"

AVERY

5-10 H.P. AVERY TRACTOR
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Avery Orchard Tractors

Are Now Built in Two Sizes

5-10 H.P. and 8-16 H.P.

Announcing the Arrival of the New Member of the Avery Family

The 6-Cylinder 8-16 H. P. $895

To meet the large demand for Orchard Tractors especially designed for California conditions we have built and perfected an 8-16-H.-P. tractor with a 6-cylinder motor which has a built-in-governor, high-tension magneto, three-speed transmission and equipped with Hyatt roller bearings throughout. It is low, 48 inches. It is short, turns 10 feet radius. It pulls two 14-inch or three 10-inch plows or a 6-foot double disc. You can now enjoy that same smooth flexibility in your tractor motor that formerly you could only have in your automobile.

For the groves of from 10 to 25 acres we have the late improved 5-10-H.-P. Model B—$775.00.

AVERY HEAVY-DUTY TRACTORS for open-field work are built in six sizes, 8-16-H.-P. to 40-80-H.-P. There is a size AVERY to fit your size farm, whether open field or grove.

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The complete AVERY line of Tractors, Motor Cultivators and Threshers will be shown at

ANNUAL SOUTHERN CALIFORNIA TRACTOR DEMONSTRATION
September 16-21 Inclusive

Opposite DeMille Aviation Field, Corner Crescent and Melrose Avenues, Los Angeles

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of the Pacific Coast

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Manufactured by

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Twenty-five hundred satisfied users in California : : : Fifty thousand satisfied users in the United States : : : All unite in urging you to see the Fordson at the Tractor Demonstration, Sept. 16th to 21st, inclusive.

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Member Traction Engine and Implement Dealers' Association

Pomona Air Cleaner

Keeps Dust Out of Tractor, Truck, and Auto Motors

Would you allow anyone else to pour grit into your motor? Are you doing it yourself? Examine and see. For every grain of dust that sticks in your carburetor intake, a million go on through to grind out your motor.

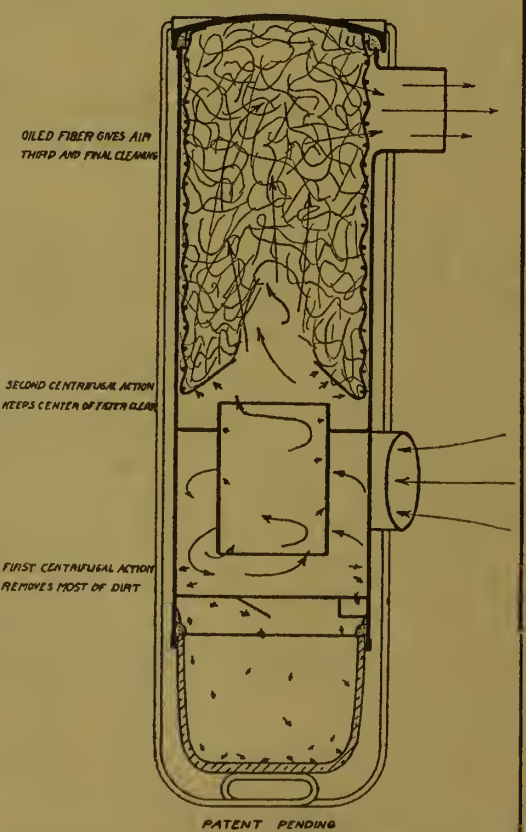
Let a Pomona Air Cleaner protect your motor. Do not wait until the damage is done. Get one now.

If you already have a clarifier be sure to examine and see whether it is doing its work. You can use both kinds together if you like. We guarantee that you will not find any dust in the air that has passed through the Pomona Air Cleaner. If, on trying the two together, you find that your present equipment is giving your motor protection we will gladly take back our apparatus and refund your money.

Above all else keep dust out of your motor. Treat your motor right. Send for descriptive circular and names of users in your neighborhood.

If you buy a tractor, truck or auto ask your dealer to equip it with a Pomona Air Cleaner.

Watch for it on Tractors at the Tractor Demonstration.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Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat
Hauser Packing Co. Los Angeles

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Congestion of the Brain

My horse falls asleep in harness and falls down; especially while standing in the sun and hitched to a buggy. What is the remedy?—Subscriber, Fresno.

Congestion of the brain caused by thick blood and sluggish circulation. Usually seen in overfat horses. It comes near being sun-stroke in your case. For immediate relief probably the old fashioned remedy of bleeding is best; that is by taking two or three gallons of blood from the jugular vein. Or give the following remedy: Two ounces of bromide of potash, one ounce of the tincture of aconite and enough water to make one pint. Give one ounce of this mixture in the drinking water morning and evening while it lasts. To prevent the trouble returning mix two pounds of epsom salts and one pound of common salt and give a handful in the feed once a day. This will thin the blood so it will flow more freely through the smaller blood vessels.

Wire Cut

We have a colt that got a bad wire cut in the pastern some time ago. It has healed over except in one place where it is still scabby. The joint is quite thick, which I think is due to proud flesh. Could it be opened and something applied that would help? The colt is not lame but we fear it will be if put to work, or would that help to absorb the swelling? What would you advise?—Subscriber, Lincoln.

There can not be any proud flesh in the swelling as that is always open, very sensitive to the touch and bleeds if you touch it. As there is no lameness now there probably never will be. Reduce the swelling with the following liniment. Have your druggist prepare it for you. Corrosive sublimate one dram, alcohol one ounce, and enough turpentine to make one pint. Shake and apply enough once a day to the swollen parts to wet the skin. If the liniment seems too strong then rub in a little lard once a week but wipe it off before applying more. The cut probably reached the tendon and may leave some enlargement. It it had reached the joint the colt would be lame and a ringbone might follow.

Skin Disease

I have a Percheron stallion that is troubled each summer with pimples on the skin. He will rub and scratch with his teeth on the front legs and make bare spots about a quarter of an inch in size. The pimples also come on the breast and neck and the rubbing makes the skin rough and scabby. What is best to do for it?—Subscriber, Heber.

The trouble is probably partly due to overfeeding. Feed less and give more exercise. Wash the affected parts with a solution of zenoleum, using a teacup to a bucket of warm water. Repeat it every few days until the irritation stops. Also get a pint of Fowler's solution of arsenic. Commence by giving half ounce doses once a day. After a few days increase the dose to one ounce a day, and when the bottle is nearly empty finish by giving half ounce doses.

Hair Coming Out

What is this and what will cure it? I have a Jersey calf that was nice and fat when born but a week later the hair commenced coming off around the ears and neck. Now it is coming off all over the body and thick white scales are forming. Flies are also bothering it.—Subscriber, Escondido.

Probably due to a mite getting into the skin. Bathe the calf all over with a solution of zenoleum, using a teacup to three gallons of warm water. Repeat this every three or four days until the hair starts. Also spray any posts or the side of the stall where the calf can rub with the same solution.

Simplified Spraying

DON'T spend your spraying day in profitless overhauling of an out-of-date inferior rig. Get results—not excuses.

Send for a catalog of California's favorite sprayers.

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Boys! Win an Auto-Wheel
In This Interesting Contest

TO THE BOY who can think of the most interesting uses for the popular AUTO-WHEEL COASTER, for earning money and for play, we shall award one of our large models absolutely FREE. It's a mighty generous prize for a few minutes' work. And the following eleven valuable prizes will be given to those sending in the next best uses: Camera, Camping Tent, Mess Kit, Scout Knife, Fleetwing Steering Sled, Compass, Ingersoll Watch, Axe, Bank, Electric Flashlight, Poncho.

INFORMATION ABOUT CONTEST

1. Any boy or girl not over 15 years may compete.
2. Contest will be judged by three men well-known in the Boy Scout organization.
3. Write to Business Idea Dept., Buffalo Sled Co., for pamphlet explaining the Contest, and colored catalog telling all about Auto-Wheel.
4. At end of letter write names of three Coaster Wagon Dealers in your town. If any carry the Auto-Wheel put an "x" after name.

YOU can do it. Here are a few pointers: The Auto-Wheel is a strong, speedy wagon for work or play. Has roller bearings, steel axles and tires, body of white ash, maple gear. See the Auto-Wheel dealer in your town for ideas.

CONTEST CLOSES NOVEMBER 30, 1919.

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HORSE-SHOE TREAD

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CALIFORNIA ORCHARD MODEL

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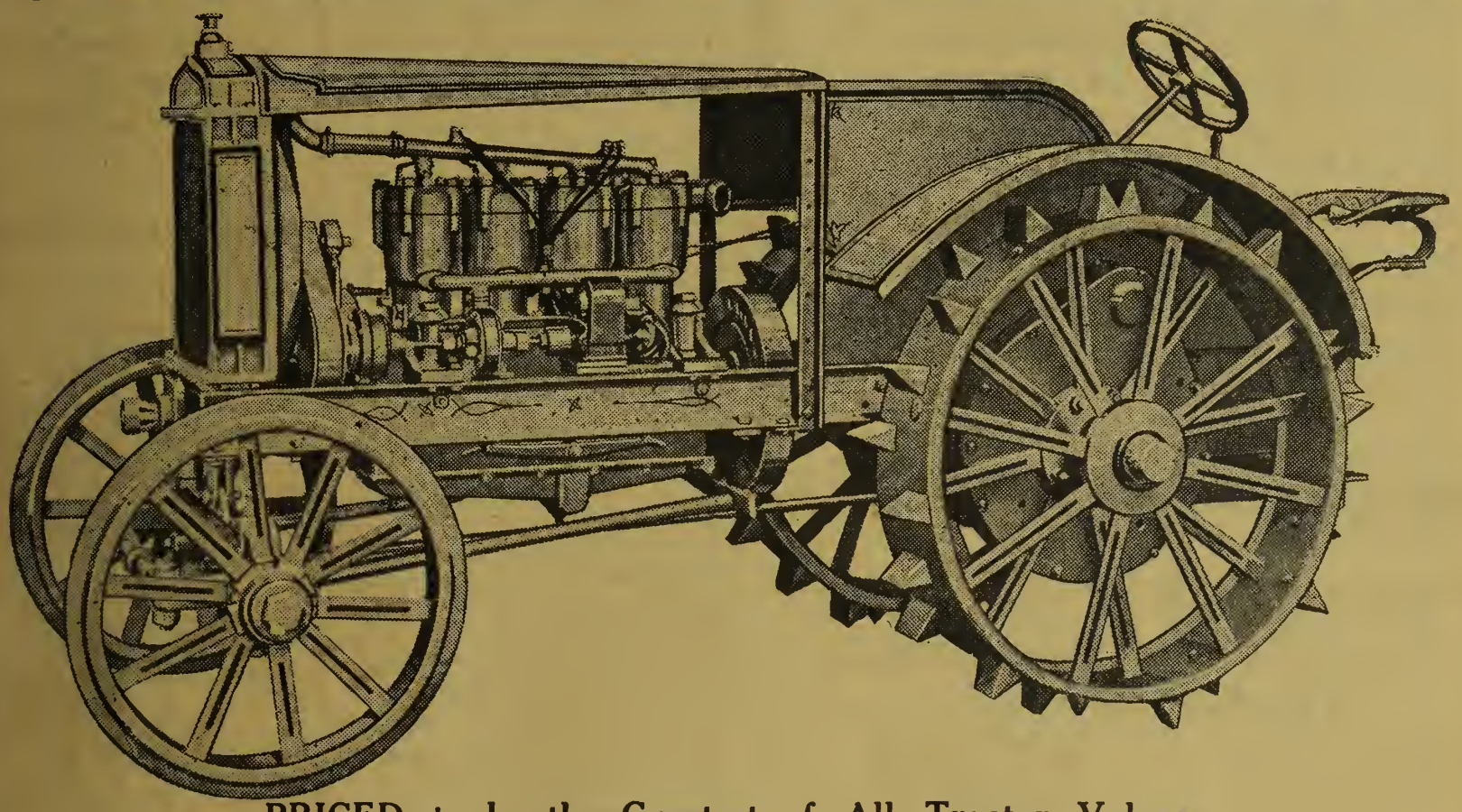
12-22 h.p.---4x6 four cylinder motor---4000 lbs. weight and still only 50 inches wide, 55 inches high with a 75 inch wheel base and a remarkably short turning radius



PRICED to be the Greatest of All Tractor Values

All gears enclosed in a bath of oil.
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Rear axle differential.
Individual rear wheel brakes.
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High tension magneto.
Five bearing crankshaft.
Three speeds forward and one reverse.

Carefully working out every detail that is demanded by the orchardist and vineyardist of California, the old established Electric Wheel Company, Quincy, Illinois, announces the ALLWORK II Tractor built especially for California horticultural conditions and with specifications and performance that command the interest and attention of every producer of fruit.

The idea that has made this tractor so preeminent was the development of a very powerful engine in a short, low, easy turning tractor giving the owner *more power than he ever had before for the money, less load to bear down, more standard units and greater efficiency in a small working space especially around trees and vines.* We want you to see this tractor and pass judgment upon it.

Dealers who are looking for a tractor highly desirable in the citrus and deciduous districts of California will find the ALLWORK II will sell readily and be a service and satisfaction to the owners.

Orchardists will find in the ALLWORK II many features that have not been included in any tractor yet offered. If you cannot visit the Tractor Demonstration write us for full descriptive literature.

The Allwork II will be one of the features of the Los Angeles Tractor Demonstration, Sept. 16-21. (Northeast Corner of Grounds) **Come and See it.**

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Please send descriptive folder concerning The California Orchard Model, The ALLWORK II tractor.

My Name .....

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Buy The Kind That Makes Good

Poland China Sale

at Lodi, Calif.

Friday, Sept. 19, 1919

40 Boars ready for service—20 bred Sows and Gilts. The breeders consigning to this sale won at the state fair more than all other exhibitors combined. These are the kind we will sell—these are the kind to buy. Farmers, get your boar at your own price. Attend this sale.

San Joaquin Poland China Breeders Association

J. F. LEHMAN, Pres, SHERWOOD BECKMAN, Secy.

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Poland China Breeders

It's to your advantage to attend

The Banner Sale of the Year

Wednesday, Sept. 17th, 1919

Hanford, Calif.

The state fair demonstrated the wisdom of breeding big type Polands. We will sell 40 big type sows and gilts bred to two of the greatest boars on the Pacific Coast,

The Yankee Jr. and Lendorris Liberty Bond

The demand for the blood which these two boars represent is far greater than the supply.

John M. Bernstein and W. L. Haag & Son

H. M. Bernstein, Auctioneer.

BEEF CATTLE AT THE FAIR

Continued from Page 329.

easily the outstanding Mission Chief, bred and owned by Bunting. This calf holds every promise of developing into a bull of high order, with plenty of size for age, a beautiful head, carrying a straight top and a deep flank, evenly balanced from front to rear and covered smoothly and thickly. He was one of the outstanding entries of the show and after being made junior champion, his general balance carried him above the senior champion.

The female classes were comfortably filled and all held competition. The three-year-old cows were headed by Pearl, a polled entry from Colorado, that is quite the best polled cow seen in the West. She is a show cow from any angle. Full of bloom and a block of beef with a beautiful head and exceptional style, she had a comparatively easy time downing all competition clear through to the final championship.

Barngrover was second and third with Lulu 14th and Cinderella, and Emmons was fourth with one without horns. Five two-year-olds, two with horns, were headed by Miss Betty, shown by Bunting. Her position at the top was not questioned. Emmons was second with a poll over Barngrover's horned entry, because of size and a bit stronger top, though lacking as sweet a head and balance. Two polls stood fourth and fifth. Bunting was again to the front in the senior yearlings with Lady Jane over Barngrover, and Emmons stood third with a poll. The junior yearlings were topped with the attractive smooth-headed, Woodford Lady P from the Brunton herd. Bunting was second over Barngrover by virtue of more size and thickness. Barngrover easily stood above the fourth and fifth—both polls. Bunting led off the senior heifer calves and Barngrover was second over a poll shown by Brunton. The third calf had size, but was bare of top and coarse throughout. It was 50-50 in the junior heifer, with the judge liking the polled calf.

Barngrover had the only aged herd and was first with his calf herd. Bunting won on his produce of dam and Brunton won the get of sire. The awards follow:

Exhibitors: J. A. Bunting, Mission San Jose; H. M. Barngrover, San Jose; G. W. Emmons, Oakland; J. D. Brunton, Aspen, Colorado; Riverside Hereford Ranch, Northern Nevada.

Aged bulls—1, Barngrover on Patrician 5th.

Two-year-old—1, Riverside Hereford Ranch on Alamo Reuben; 2, Emmons on Grove's Perfection; 3, Emmons on Witchford.

Senior yearlings—1, Bunting on Alec; 2, Brunton on Echo Repeater; 3, Emmons on Junior Grove.

Junior yearlings—1, Brunton on Bonnie Grove; 2, Emmons on Diablo Fairfax.

Senior bull calves—1, Bunting on Mission Prince; 2, Barngrover on Plumas Lad 2d; 3, Barngrover on Prince Patrician; 4, Brunton on Repeater Grove.

Junior bull calves—1, Bunting on Mission Chief; 2, Brunton on Perfection Grove.

Senior champion bull, Patrician 5th.

Junior champion, Mission Chief.

Grand champion, Mission Chief.

Three-year-old cows — Brunton on Pearl; 2, Barngrover on Lulu 14th; 3, Barngrover on Cinderella; 4, Emmons on Lady Berenda.

Two-year-olds—1, Bunting on Miss Betty; 2, Emmons on Sally Clark; 3, Barngrover on Mary Jane; 4, Emmons on Cherry Grove; 5, Emmons on Blue Belle 4th.

Senior yearlings—1, Bunting on Lady Jane; 2, Barngrover on Thelma; 3, Emmons on Laura.

Junior yearlings—1, Brunton on Woodford Lady P; 2, Bunting on Mission Girl; 3, Barngrover on Normalene; 4, Emmons on Belle Poll 3d; 5, Emmons on Mineola Fairfield.

Senior heifer calves—1, Bunting on Mission Lass; 2, Barngrover on Lulu's Pride; 3, Brunton on Belle Grove 2d.

Junior heifer calves—1, Brunton on Miss Woodford; 2, Barngrover on Patrician Sue.

Senior champion cow—Pearl. Junior champion—Woodford Lady P. Grand champion female—Pearl.

Graded herds—1, Barngrover.

Calf herds—1, Barngrover; 2, Brunton.

Produce of cow (two)—1, Bunting; 2, Barngrover.

Get of sire (four)—1, Brunton; 2, Barngrover.

DAIRY CATTLE AT 1919 CALIFORNIA STATE FAIR

By C. L. Hughes

While the railway strike in Southern California was the cause of a curtailment in numbers of dairy cattle exhibited at this year's state fair, the Dupee Guernseys and Santa Anita Rancho Holsteins not showing as a consequence, yet it passes into history as one of the best displays yet seen in the West. The observer who has been familiar with all of the dairy cattle shows at this fair for many years past finds renewed satisfaction each year in the younger classes, evidence that our breeders are not only using wisely selected sires, but that they are mating these sires with a superior lot of dams and securing a splendid growthiness and quality in the offspring. In such respects do we find a great deal of promise for the future dairy cattle of California.

The Ayrshires

The Ayrshire classes were the first to appear in the show ring, and they made a fitting beginning for the big show. Three herds were shown, those of J. Henry Meyer, E. B. McFarland and Preston School of Industry. Many splendid representatives of the breed were found in each herd, although the Meyer herd succeeded in taking home both grand championships, after the keenest sort of competition with McFarland in most of the classes. The awards follow:

Exhibitors: E. B. McFarland, San Francisco; J. Henry Meyer, San Francisco; Preston School of Industry, Waterman.

Two-year-olds—1, Meyer on Imp. Holehouse Secretary; 2, McFarland on Steybrae Improver; 3, MeFarland on Steybrae Commander; 4, Preston School on Steybrae Masterpiece; 5, Preston School on Premier.

Senior yearlings—1, Preston School on Preston Prince Bangios.

Junior yearlings—1, Preston School on Preston Ravendale.

Senior bull calves—1, Meyer on Elkhorn Public Opinion; 2, McFarland on Steybrae Monarch; 3, McFarland on Steybrae Master Douglas; 4, Meyer on Elkhorn Mariner; 5, Preston School on Preston Masterpiece.

Junior bull calves—1, McFarland on Ayrmont 359; 2, McFarland on Ayrmont 361; 3, Meyer on Elkhorn Royal Review; 4, McFarland on Steybrae Bobbie Burns.

Senior champion bull—Imp. Holehouse Secretary. Junior champion—Ayrmont 359. Grand champion — Imp. Holehouse Secretary.

Three-year-olds—1, Meyer on Torr of Elkhorn; 2, McFarland on Auchinbay Jean 8th; 3, Preston School on Cedar Hill Princess.

Aged cows—1, Meyer on Highland Ithan; 2, McFarland on Maple Leaf Lily; 3, McFarland on Sunnyside Governess; 4, Meyer on Curfew Bell 3d; 5, Meyer on Hancroft Favorite.

Two-year-olds—1, Meyer on Robin's Lucy of Elkhorn; 2, McFarland on Steybrae Jennie Deans; 3, Meyer on Baron's Blue Bell; 4, Preston School on Steybrae Ellen; 5, McFarland on Grace Darling.

Senior yearlings—1, Meyer on Baron's Snow Maid of Elkhorn; 2, McFarland on Steybrae Kirsty; 3, Preston School on Preston Dewdrop 2d.

Junior yearlings—2, McFarland on Steybrae Nona; 2, McFarland on Burnside Miss Courtney; 3, Preston School on Preston Nellie Osborn; 4, Meyer on Elkhorn Kirsty; 5, Preston School on Preston Princess.

Senior heifer calves—1, Meyer on Elkhorn Heatherflower; 2, McFarland on Ayrmont 357; 3, McFarland on Ayrmont 353; 4, McFarland on Steybrae Edna; 5, Meyer on Elkhorn Snowflake.

Junior heifer calves—1, Meyer on Elkhorn Thistledown; 2, McFarland on Steybrae Gem; 3, McFarland on Steybrae Alta; 4, Preston School on Preston Princess 2d; 5, Preston School on Preston Sconcy Maid.

Senior champion cow—Highland Itham Junior champion—Elkhorn Heatherflower. Grand champion female—Highland Itham.

Graded herds—1, Meyer; 2, McFarland; 3, McFarland.

Young herds—1. McFarland.

Calf herds—1, McFarland.

Produce of cow (two)—1, McFarland; 2. Meyer; 3, McFariand.

Get of sire (four)—1, McFarland; 2. McFarland; 3, Meyer.

The Holsteins

With over 100 head of Holsteins to face the judge competition was of the keenest sort in most classes, and the list of awards falls far short of indicating the entire story of the show. The outstanding feature of the show was the exhibit of Bridgford Holstein Company, and their sensational winnings were due largely to the great bull, King Segis Alcartra Prilly and his get. This bull was for the third consecutive year returned grand champion, while his daughters won first senior yearling, first junior yearling, first and second senior heifer calves, first and second junior heifer calves, grand champion female, first and second get of sire, first calf herd, first breeders' young herd, and he sired the first and second prize produce of dam. A splendid showing was made by Henderson Company, who annexed a number of first prizes and the junior championship on bulls, the latter a son of Supreme Glista Pietje. Jane Garden Farm did not have a full show herd, but made an impressive showing in the female classes. W. J. Higdon was a much stronger contender in most of the classes than a survey of the awards would show, losing a number of hair line decisions, and showing a herd that met with high popular favor. The same is true of the herd shown by The J. S. Gibson Company, who ap-

peared frequently in the money. H. E. Cornwell showed only a few head, among them the first prize two year old who won top honors in a large class that had considerable spread in quality between top and bottom. R. L. Holmes showed only young things but they were good enough to be a source of pride to any breeder. V. F. Dolcini made his initial showing in a manner that should be highly encouraging to him, winning first in a hot senior bull calf class with the splendidly bred young bull he recently purchased for a herd sire. Frank Anderson showed one animal, a junior heifer calf, daughter of King Mead of Riverside, and she was strong in fourth place in one of the hottest classes of the show. The awards:

Exhibitors: Frank B. Anderson, Sacramento; Anita M. Baldwin, Santa Anita; Bridgford Company, Patterson; V. F. Dolcini, Davis; H. E. Cornwell, Modesto; Jane Garden Farm, Sacramento; J. S. Gibson Co., Williams; Henderson & Company, Sacramento; W. J. Higdon, Tulare; R. E. Holmes, Modesto; J. Self, Williams.

Aged bulls—1, Bridgford on King Segis Alcartra Prilly; 2, Gibson on Segis Creamcup Pontiac Burke; 3, Higdon on King Korndyke Pontiac 20th; 4, Cornwell on Sir Johanna De Kol Rag Apple; Henderson Co. on King Lillian Walker Segis.

Two-year-olds—1, Henderson Co. on Model Domino Glista.

Senior yearlings—1, Higdon on Model Bonnie Fobes De Kol; 2, Henderson Co. on Manteca Korndyke Inka.

Junior yearlings—1, Henderson Co. on Bonita Sir Cornucopia Glista; 2, Dolcini on Tagus Sadie Vale De Kol.

Senior bull calves—1, Dolcini on Sir Aaggie Korndyke Mead; 2, Bridgford on King Hengerveld Alcartra Prilly; 3, Bridgford on King Adelina Korndyke Prilly; 4, Bridgford on King Segis Hengerveld Inka Prilly; 5, Bridgford on King Prilly Segis Pontiac.

Junior bull calves—1, Henderson Co. on Manteca De Kol Pierterje Inka; 2, Bridgford on King Pontiac Abbekerk; 3, Gibson on Prince Alcartra Korndyke 7th; 4, Holmes on Holmes De Kol Walker; 5, Jane Garden Farms on Jane Garden Omo Korndyke.

Senior champion bull—King Segis Alcartra Prilly.

Junior champion—Bonita Sir Cornucopia Glista.

Grand champion—King Segis Alcartra Prilly.

Aged cows—1, Bridgford on Spring Farm Pontiac Maid 2d; 2, Higdon on Mona Fobes; 3, Higdon on Model Bonnie Echo; 4, Henderson Co. on Colantha Ormsby 4th; 5, Henderson Co. on Model Pontiac Korndyke.

Three-year-olds—1, Henderson Co. on Klaare De Kol Korndyke; 2, Bridgford on Natalene Walker; 3, Higdon on Queen Pontiac Burke.

Two-year-olds—1, Cornwell on Ciruela Walker; 2, Bridgford Co. on Bos Cornucopia Butter Girl; 3, Henderson Co. on Manteca Fidessa Pontiac Inka; 4, Higdon on Fay Tritomia Hengerveld Walker; 5, Jane Garden Farm on Sadie Clothilde Vale.

Senior yearlings—1, Bridgford on Empress Pontiac Prilly; 2, Jane Garden Farm on Jane Garden Taploca De Kol; 3, Dolcini on Netherland Snowball; 4, Higdon on Miss Bracelet Fobes Korndyke; 5, Higdon on Blanch Nudene Clothilde.

Junior yearlings—1, Bridgford on Miss Orpha Pontiac Prilly; 2, Higdon on Miss Segis Alcartra Prilly; 3, Jane Garden Farm on Jane Garden Magnolia Korndyke; 4, Bridgford on Raphaella Pontiac Prilly; 5, Gibson on Aaggie Juliet Alcartra.

Senior heifer calves—1, Bridgford on Miss Konigen Pontiac Prilly; 2, Bridgford on Briar Aaggie Rag Apple Prilly; 3, Henderson on Manteca Segis Hengerveld; 4, Henderson on Manteca Piebe Clothilde; 5, Holmes on Holmes Silverton Alameda.

Junior heifer calves—1, Bridgford on unnamed; 2, Bridgford on Empress Pontiac Segis Prilly; 3, Gibson on Tilly Cornucopia Johanna; 4, Anderson on Juliana De Kol Mead; 5, Henderson on Manteca Walker Walker Colantha.

Senior champion cow—Springfarm Pontiac Maid 2d. Junior champion—Empress Pontiac Prilly. Grand champion female—Empress Pontiac Prilly.

Graded herds—1, Bridgford; 2, Henderson; 3, Henderson.

Young herds—1, Bridgford; 2, Jane Garden Farm; 3, Henderson.

Calf herds—1, Bridgford; 2, Henderson; 3, Jane Garden Farm.

Produce of cow (two)—1, Bridgford; 2, Bridgford; 3, Higdon.

Get of sire (four)—1, Bridgford; 2, Bridgford; 3, Higdon.

Dairy herd—1, Bridgford; 2, Jane Garden Farm.

The Jerseys

The steadily increasing demand for quality Jerseys was reflected in this year's show. There have been larger showings of the breed at this fair, but few that uncovered more satisfactory cattle. J. E. Thorp was a consistent winner, taking the grand championship on bulls and the much coveted first prize for five cows in milk, besides a number of other firsts in classes. Dr. Hand annexed the grand championship on females and was the closest sort of contender for first position in the class for five cows in milk. Guy Miller showed a herd that always finds many friends at the ringside and was a contender in most of the classes. S. F. Williams showed a number of entries from his good herd, showing only animals that were bred by him. E. E. Greenough made his initial appearance as an exhibitor and the favorable impression made by his herd indicates that it will be a factor in future shows. The awards:

Exhibitors: A. Cruikshanks, Sacramento; M. Fortini, Orland; E. D. Grecnough, Merced; Dr. H. W. Hand, Orland; L. J. Belknap, San Jose; A. M. MacKersie, San Jacinto; Guy H. Miller, Modesto; J. H. Sawyer, Galt; J. E. Thorp, Lockeford; J. E. Wherrell, Riverside; S. F. Williams, Chico.

Aged bulls—1, Thorp on Jolly Senator Raleigh; 2, Miller on Altama Interest; 3, Greenough on Fussy's Fern Noble 9th; 4, Williams on Golden Maidikins Boy; 5, Williams on Lucy's Warder Foss Boy.

Two-year-olds—1, Hand on Oxford Daisy's Keep On; 2, Hand on Blossom's Liberty Bond.

Senior yearlings — 1, Thorp on Golden Legacy's Champion; 2, Greenough on Opal's Golden Laddie.

Senior bull calves—1, Miller on Wanda's Altama Interest; 2, Thorp on Biddy's King of Mossdale; 3, Thorp on Salome's Idyl Boy; 4, Sawyer on Countess' Lad's Chieftain; 5, Hand on Oxford's First Prince.

Junior bull calves—1, Thorp on Jolly Ben of Mossdale.

Senior champion bull, Jolly Senator Raleigh.

Junior champion, Wanda's Altama Interest.

Grand champion, Jolly Senator Raleigh.

Junior heifer calves—1, Thorp on Queen Bess of Mossdale; 2, Greenough on Goldie's Golden Princess; 3, Williams on Chico Hope; 4, Miller on Fay of Venadera; 5, Thorp on Bettie of Mossdale.

Dairy herd—1, Thorp; 2, Hand; 3, Miller.

Aged cows—1, Thorp on Salome of Mossdale; 2, Thorp on Valet's Golden Biddy of L; 3, Greenough on Duchess of Lorina; 4, Thorp on Eminent's Wardress; 5, Hand on Imp. Brilliant Spray; 6, Miller on Goldie of Venadera.

Three year olds—1, Hand on Brilliant Jersey Queen; 2, Thorp on Naomi of Mossdale; 3, Miller on Angela of Venadera; 4, Williams on Aita La Foss.

Two year olds—1, Hand on Lumas Lola; 2, Hand on Birdie's Agnes; 3, Thorp on Pansy of Mossdale; 4, Miller on Cantata of Venadera; 5, Greenough on Goldie of Sunshine Farm; 6, Williams on Aleta Beau.

Senior Yearlings—1, Thorp on Goldie's Nehalem Cowslip; 2, Thorp on Fair Salome of Mossdale; 3, Thorp on Bonnie of Mossdale 2d; 4, Cruickshanks on Cionlee Rosalind; 5, Greenough on Beauty of Sunshine Farm; 6, Greenough on Patsy of Sunshine Farm.

Junior yearlings—1, Williams on King Hanford's Anna Girl; 2, Hand on St. Mawes Rosalind; 3, Miller on Daphne of Venadera; 4, Thorp on Marcella of Mossdale; 5, Miller on Arla of Venadera.

Senior heifer calves—1, Fortini on Jewel of Tintagel; 2, Hand on Aaggie of Tintagel; 3, Hand on Brilliant Spray's Glorianna; 4, Miller on Dagmar of Venadera; 5, Miller on Melba of Venadera; 6, Thorp on Naomi of Mossdale.

Senior champion cow, Brilliant Jersey Queen; champion, Jewel of Tintagel; grand champion female, Brilliant Jersey Queen.

Graded herds—1, Thorp; 2, Hand; 3, Miller. Young herds—1, Miller; 2, Thorp; 3, Williams.

Calf herds—1, Miller; 2, Thorp.

Produce of cow (two)—1, Hand; 2, Thorp; 3, Williams; 4, Thorp.

Get of sire (four)—1, Thorp; 2, Miller; 3, Williams; 4, Hand.

(Other awards later.)

The dairy cattle awards were made by Hugh Van Pelt, editor of The Dairy Farmer, Waterloo, Iowa, in a manner thoroughly businesslike and to the satisfaction of all exhibitors.

* * *

THE SHOW OF SWINE

By B. S. Bennett

Seventeen breeders of Duroc Jersey swine from all parts of the state were exhibitors at the state fair.

It was their universal opinion that the show was the largest numerically, something over 200 head being shown, of any previous fair and showed a decided improvement as to the quality of the animals exhibited. The recent railroad strike was responsible for the absence of a number of good herds, but even this was no deterrent to the Winsor Ranch. Located a few miles from San Diego and being unable to ship by rail, the hogs were trucked to San Diego harbor, loaded by derrick onto the boat and came all the way to Sacramento by the water route, arriving just in time for the opening of the fair.

In the opinion of a number of breeders the outstanding feature of the Duroc Jersey show was the aged sow class, although the junior yearling boars had a number of supporters.

Previous to the judging this class was the most freely discussed, and many predictions as to the winner were made. This class included the $3000 Mammoth Sensation 2nd from the herd of Diamond Bar Ranch, Johnson's Defender, Jr., from Greenwood Farm, Freddy You'll Do, from the herd of J. E. Thorp and Natoma Defender from the Hazel Louise Farm. The three last named boars were all by the same sire, Johnson's Defender, the

Just What You Want

IN THE

Big Poland-China Dispersal Sale of Dimmick Bros. and DeRaad

TUESDAY, SEPT. 30, 1919

Hanford, Calif.

16 sows bred to President 2nd, Young Jumbo, The Yankee Jr., King's Massive Orange and California Smooth Jumbo.

5 sows and litters, two by a son of Big Orange.

16 gilts old enough to breed for spring litters.

A daughter of *The Yankee* and four of her pigs sell.

This is the greatest opportunity offered this year.

For catalog address

Dimmick Bros. or C. G. DeRaad, Lemoore

GEO. W. BELL, Tulare; Auctioneer

Sale at 10:30 a.m. Lunch at Noon

Largest Winner at State Fair

POLAND CHINAS

With 14 junior boars and sows I won 1st, 2nd, 3rd and 4th junior boar pig, 1st and 2nd junior sow pig, 1st under year herd, 1st herd bred by exhibitor, 1st get of sire, 1st produce of dam, junior champion boar and junior champion sow.

These winnings, in the greatest Poland-China show ever held in California, afford positive proof I am breeding the kind demanded everywhere.

Some outstanding young boars, real prospects, for sale and priced well worth the money. I will write you full particulars on request or call at the farm and make your selection.

J. F. LEHMAN, Lodi, Calif.

Special Notice

These are the kind I will sell in the big Poland-China Sale to be held in Lodi, Sept. 19th.

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

The Pacific Herd of Big Type Polands.

Herd sire, King Hadley and A Wonder blood lines.
A few classy 5 months' old boars for sale.
Satisfaction or money refunded. Prices reasonable.

Mrs. C. H. Andrews

Route 1, Box 46. Modesto, Calif.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Blackhawk Shires Win Again

At the recent California State Fair Shire horses bred, owned and exhibited by the Blackhawk Ranch won every first prize in classes entered. Anwick Arthur, at the head of our stud was made Champion Stallion and Blackhawk Chessie, was Champion Mare. Our exhibit called forth the remark from the Judge that few breeding establishments in America could show an equal class of Shires. For the best in Shires use Blackhawk breeding. We have a number of young stallions of serviceable age that we can offer at prices in keeping with their quality.

Blackhawk Shorthorns

Hold to the same high standard set by our Shires and while not shown at the State Fair they will be seen at the later shows. The herd has been carefully selected and founded on the most popular and proven Scotch families of the breed. Those in the market for bulls will be serving their own interests when they investigate this herd before buying.

Visitors are always welcome at the Ranch and correspondence is invited.

BLACKHAWK RANCH

Diablo - - - Contra Costa County

EASTON & WARD E. Lovell, Manager

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We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
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Holstein Cows for Cheese Making

They are large, vigorous, and easy to care for, and on coarse feed they produce a large quantity of milk of a quality especially desirable for invalids and infants.

Their great yield contains a higher total of fat than any other breed can produce, and in the cheese and condensary trade their earnings almost double those of breede whose milk capacity has been eacrificed to get a large percentage of fat. If interested in

HOLSTEIN CATTLE

send for our booklets and inform yourself on how to make money in breeding dairy cattle.

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Registered Shorthorns
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196 — 368

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The American Guernsey Cattle Club,
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DUROC JERSEYS

IMMEDIATE SHIPMENT
YOUNG BOARS, WEANLINGS
BRED OR UNBRED GILTS
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GARDINER RANCH
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SACRAMENTO, CALIF

Beef Cattle Specialist

For 30 years I have been devoting my entire time to pure bred beef cattle. I know the kind of cattle California needs and where and how to buy. I make regular trips to the great producing centers and will buy on order. Best of references. Satisfaction assured. Correspondence invited.

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BUTTRESS & McCLELLAN
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Long Jumbo and Yate's Big Orphan

have sired some wonderfully fine pigs. Big type Poland-Chinas by these two boars for sale at a reasonable price. Write immediately for full description. Fully guaranteed to satisfy.

R. J. Yates, Orland, Cal.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

last two being litter mates. With four such outstanding boars in the ring the judge immediately recognized the task cut out for him and examined each boar very carefully before making his decision. The final placing found Mammoth Sensation 2nd first, Johnson's Defender, Jr., second, Natoma Defender third and Freddy You'll Do, fourth. Johnson's Defender, Jr., was a strong contender for first honors and had the judge placed him first, his decision would have been unquestioned, although Mammoth Sensation boar was considered a little more typical of the breed as bred today. As strong as was this class the judge had to go into the aged boar class for the grand champion, placing his highest honor on Sensation Wonder 1st, shown by H. P. Slocum & Son. This boar was considered in a class by himself and deserving of top place. In the aged sow class the Winsor Ranch entry, Model Defender Lady, was so outstanding that all that remained for the judge to do was to select the winners for the four remaining ribbons. This sow was also made grand champion as she has been at all the other fairs where she has been shown. Coming to the senior sow pig class which many breeders asserted was the real sensation of the show, the Diamond Bar entry, the young sow Pathfinder's Very Best, has all the qualifications now demanded by the leading Duroc Jersey breeders and, meeting with no accident, she should develop into one of the most magnificent specimens of the breed yet produced.

Dwight C. Putnam of Tecumseh, Nebraska, did the judging and gave universal satisfaction.

The exhibitors were:

Exhibitors: L. J. Belknap, San Jose; W. V. Bennett, Nord; H. M. Berglund, Dixon; Jack Borge, Dos Palos; Joe N. Chinowth, Visalia; Henry Cummins, Visalia; Debban Brothers, Woodland; Diamond Bar Ranch, Spadra; El Dorado Duroc Breeders' Assn., Placerville; Elliott, Brant Rancho, Owensmouth; Fulgham & Sons, Visalia; F. W. Gardiner, Sacramento; Grover C. Hamilton, Acampo; Hazel Louise Farm, Sacramento; Jane Garden Farm, Sacramento; J. P. Mallory, Fresno; Merritt-Bowers, Tulare; Shavista Ranch, McArthur; Slocum & Sons, Willows; J. E. Thorp, Lockeford; E. J. Weidon, Sacramento; Western Laboratories, Stockton; Winsor Ranch, Bonita; Witherow & Stafford, Live Oak.

The awards follow:

Aged boar—1, Slocum & Son on Sensation Wonder 1st; 2, Berglund on California Orion King; 3, Jane Garden Farm on Trailblazer; 4, Slocum on Uneeda Model Col.; 5, Slocum on Uneeda Wonder.

Senior yearling—1, Chinowth on Lord's Orion Cherry King; 2, Winsor Ranch on Model Defender 1st; 3, Slocum on Uneeda Model Col. 3rd; 4, Diamond Bar Ranch on Latest Model.

Junior yearling—1, Diamond Bar Ranch on Mammoth Sensation 2d; 2, Witherow & Stafford on Johnson's Defender Jr.; 3, Hazel Louise Farm on Natoma Defender; 4, Thorp on Freddie You'll Do; 5, Barker on Orion King Defender.

Senior boar pig—1, Slocum on Uneeda Invincible Col.; 2, Cummins; 3, Diamond Bar Ranch on Great Sensation 2d; 4, Winsor Ranch on Top Sensation 2d; 5, Slocum on Invincible Uneeda 2d.

Junior boar pig—1, Thorp on You'll Do's Prince; 2, Fulgham on Critic's Ideal Pathfinder; 3, Thorp on You'll Do's Volunteer; 4, Witherow & Stafford on Greenwood Defender G.; 5, Witherow & Stafford on Greenwood Defender D.

Aged sows—1, Winsor Ranch on Model Defender Lady; 2, Diamond Bar Ranch on Critic Rose; 3, Fulgham on Royal Critic 2d; 4, Bennett on Butte's Golden Pet; 5, Thorp on Happy Lass of Mossdale.

Senior yearling—1, Winsor Ranch on Miss Pathfinder; 2, Diamond Bar Ranch; 3, Slocum on Uneeda Queen Model 3rd; 4, Borge on La Roja.

Junior yearling—1, Diamond Bar Ranch on Pathfinder's Col. Girl; 2, Diamond Bar Ranch on Ohio Sensation Lady; 3, Bennett on Orion's Cherry Blossom; 4, Diamond Bar Ranch on Ganos Wonder Girl; 5, Slocum on Uneeda H. A.'s Queen 1st.

Senior sow pig—1, Diamond Bar Ranch on Pathfinder's Very Best; 2, Winsor Ranch on Golden Sensation; 3, Thorp on Reggie's Twilight of Mossdale; 5, Diamond Bar Ranch on King's Golden Girl.

Junior sow pig—1, Thorp on You'll Do's Queen; 2, Thorp on Reggie's You'll Do 2d; 3, Fulgham on Ideal Pathfinder's Critic 1st; 4, Thorp on Reggie's You'll Do 3rd; 5, Bennett on Butte's Premier Pet 3rd.

Senior champion boar, Sensation Wonder 1st. Reserve, Diamond Bar Ranch on Mammoth Sensation 2d.

Junior champion boar, Slocum on Uneeda Invincible Col. Reserve, Thorp on You'll Do's Prince.

Senior champion sow, Winsor Ranch on Model Defender Lady. Reserve, Winsor Ranch on Miss Pathfinder.

Junior champion sow, Diamond Bar Ranch on Pathfinder's Very Best. Reserve, Thorp on You'll Do's Queen.

Grand champion boar, Slocum on Sensation Wonder 1st. Reserve, Slocum on Uneeda Invincible Col.

Aged herd—1, Diamond Bar Ranch; 2, Winsor Ranch; 3, Slocum.

Young herd—1, Thorp; 2, Diamond Bar Ranch.

Herd bred by exhibitor—1, Thorp; 2, Winsor Ranch; 3, Slocum.

Get of sire—1, Diamond Bar Ranch; 2, Thorp; 3, Winsor Ranch.

Produce of dam—1, Thorp; 2, Winsor Ranch; 3, Thorp.

Fat barrow—1, Diamond Bar Ranch.

Poland-Chinas

The Poland-China show at the state fair was considered by many of the breeders to be not only the largest but the most representative ever made. It consisted of nearly 300 animals selected from the herds of 21 breeders. Owing to the railroad strike a number of the prominent herds were unable to get to the fair. The judging arena was entirely too small to permit proper showing of the animals in a number of the classes, making it exceedingly difficult for the judge to work. Especially was this so in the junior yearling boar and sow, senior boar and sow and junior boar and sow classes.

The judging as a whole was fairly satisfactory.

The junior yearling boar class was the hottest contest of the show, 14 boars being driven into the ring. Considerably more time was spent by the judge in making these awards than in any other class. The winner was finally found in Chas. Gatewood's boar, Giant Bob, by Caldwell's Big Bob. This boar is typical of the breed as now bred by the leading Eastern Poland-China breeders, having a high arched back, plenty of length and depth, smooth and exceedingly large bone. He has plenty of size for age and if properly carried on until maturity will make an extremely large boar. This boar was later made grand champion. In the junior yearling sow class 20 head were driven in, and it is seldom that a show of this quality and number is seen at any state fair. This class caused a wider divergence of opinion than any other class in the show.

The blue was awarded to the Young & Clark's sow, Smooth Josie. McCarty and Starkweather produced the first prize, senior and grand champion sow in Big Mary 3rd by Big Fred. This sow is one of those long, deep, smooth motherly sows and was deserving of all the honors bestowed upon her.

In the senior boar pig class of 14, Fred Gatewood won first and reserve junior champion, while J. F. Lehman was placed first, second, third and fourth in a class of 28 junior boar pigs. It would be hard to find a more evenly balanced lot of young sows than those that made up the class of 22 senior sow pigs. This class also caused the judge considerable trouble before the winner was found in Nugget Nell, by Kansas King, from the herd of McCarty and Starkweather. The largest class of the show, 42 head, was that of junior sow pigs, J. F. Lehman winning first and junior champion on Lady King by Golden State King.

The largest individual winner was J. F. Lehman. Thos. Shattuck of Hastings, Nebraska, was judge.

The exhibitors were:

Exhibitors: M. & A. L. Bassett, Hanford; Geo. V. Beckman & Sons, Lodi; Buckland & Son, Fresno; J. H. Cook, Paradise; Cross Brothers, Merced; W. T. Dice, Hanford; L. E. DeForest, Susanville; Chas. Gatewood, Fresno; Fred Gatewood, Fresno; Johnnie Glusing, Winton; J. H. Hansborough, Modesto; N. K. Horan, Lockeford; Clyde Horr, Susanville; Robert W. Jickling, Elmira; J. F. Lehman, Lodi; Linderman & Robinson, Esparto; H. I. Marsh, Modesto; Marshall & Son, Sebastopol; McCarty & Starkweather, San Francisco; H. D. McCune, Lemoore; J. F. McSwain, Merced; Eugene Miner, Lodi; P. E. Mitchell, Atwater; Fred D. Ross, Hanford; C. A. Vaughn, Hanford; J. W. Wakefield, Acampo; W. A. Young, Lodi.

The awards follow:

Aged boar—1, Beckman & Son on Matchless Big Bob of U. F.; 2, Horan on Big Bone Bob; 3, Horan on Clark's Wonder.

Senior yearling—1, McSwain on Big Model Fellow; 2, Bassett on King's Timm; 3, Marsh on Big Model; 4, Jickling on Justo Bos; 5, Bassett on King's Gerstdale Jones.

Junior yearling—1, Gatewood on Giant Bob; 2, Elliott & Shinn on The Californian; 3, Young on Barton's Big Korver; 4, Young on Long Big Bone Jr.; 5, McCarty & Starkweather on King Jones Over.

Senior boar pig—1, Gatewood on Fresno Boy; 2, Glusing on King George Big Bone; 3, Bassett on Golden Model; 4, Bassett on J. B.'s Model; 5, Beckman on Governor.

Junior boar pig—1, Lehman on Big Bone Bob; 2, Lehman on Queen's King; 3, Lehman; 4, Lehman on Prince's Big Bone; 5, Bassett on Model Timm.

Aged sow—1, McCarty & Starkweather on Big Mary 3rd; 2, Bassett on Hopeful; 3, McCarty & Starkweather on Model Riverina; 4, Cook on Mollie Wonder 2d; 5, Horr on Katie Fisher.

Senior yearling—1, Cook on Forest View Bess; 2, Bassett on Big Model Maid; 3, Gatewood on Blue Valley B.; 4, Marsh on Wonder Alice 2d.

Junior yearling—1, Young on Black

Beauty C.; 2, Beckman on Belle's Beauty; 3, Beckman on Lady Wonder; 4, Young on Black Beauty 5th; 5, McCarty & Starkweather on Liberty Girl 3d.

Senior sow pig—1, McCarty & Starkweather on Nugget Nell; 2, Marshall & Son on Polly; 3, McCarty & Starkweather on Long Prospect; 4, Johnnie Glusing on Lady Washington's Model; 5, Bassett on Big Princess Model.

Junior sow pig—1, Lehman on Lady King; 2, Lehman on Lady Bob; 3, Bassett on Gerstdale's Best; 4, Gatewood on Polandale Bettie; 5, Cross Bros. on Letty C.

Senior champion boar, Gatewood on Giant Bob. Reserve, McSwain on Big Model Fellow.

Junior champion boar, Lehman on Big Bone King. Reserve, Gatewood on Fresno Boy.

Senior champion sow, McCarty & Starkweather on Big Mary 3rd. Reserve, Young on Black Beauty C.

Junior champion sow, McCarty & Starkweather on Nugget Nell. Reserve, Young on Black Beauty C.

Grand champion boar, Gatewood on Giant Bob. Reserve, McSwain on Big Model Fellow.

Grand champion sow, McCarty & Starkweather on Big Mary 3rd. Reserve, Young on Black Beauty C.

Aged herd—1, Young; 2, Beckman; 3, Bassett; 4, McCarty & Starkweather.

Young herd—1, Lehman; 2, McCarty & Starkweather; 3, Young.

Herd bred by exhibitor—1, Lehman; 2, McCarty & Starkweather.

Get of sire—1, Lehman; 2, McCarty & Starkweather; 3, Young.

Produce of dam—1, Lehman; 2, Young; 3, McCarty & Starkweather.

Chester Whites

The Chester White show at the fair this year, while not as large as that of other breeds, attracted considerable attention.

Six breeders made up the list of exhibitors, four of which were making their first show. C. B. Cunningham, one of the oldest and most prominent breeders, had the largest number of entries and won the largest share of the ribbons. Professor J. I. Thompson judged the classes.

The following were exhiibtors:

Exhibitors: C. B. Cunningham, Mills; L. P. Dorsey, Jr., Applegate; E. E. Fulton, Fair Oaks; Hiram Henderson, Fair Oaks; Mrs. L. M. Yore, East Auburn; R. L. Anderson, Placerville.

The awards follow:

Aged boar—1, Cunningham on Wildwood Boy; 2, Anderson on Big Sensation.

Senior yearling—1, Cunningham on Bonnie Model.

Junior yearling—1, Dorsey on Royal Wonder; 2, Yore on Ursa.

Senior boar pig—1, Cunningham on The Gambler; 2, Cunningham on Crescent Dick; 3, Yore on Merak.

Junior boar pig—1, Cunningham on Silver Top; 2, Cunningham on Silver Heart; 3, Yore on (unnamed); 4, Dorsey on Placer Boy; 5, Fulton on (unnamed),

Senior champion boar, Cunningham on Wildwood Boy.

Junior champion boar, Cunningham on The Gambler.

Aged sow—1, Cunningham on Billiken Belle; 2, Henderson on Wonder Bernice; 3, Cunningham on Lady Lenora; 4, Yore on Mary Lou.

Senior yearling — 1, Cunningham on Emily Wing; 2, Dorsey on Myra's Girl; 3, Yore on Myra 2d.

Junior yearling—1, Henderson on Betsey Wonder; 2, Cunningham on White Queen 2d; 3, Yore on Molly O.

Senior pig—1, Cunningham on Echo; 2, Cunningham on Miss Creation; 3, Cunningham on Irma; 4, Cunningham on Grace; 5, Yore on Tania.

Junior pig—1, Fulton on (unnamed); 2, Cunningham on Silver Patria; 3, Cunningham on Silver Paula; 4, Dorsey on Lucy M.; 5, Yore on (unnamed).

Senior champion sow, Cunningham on Billiken Girl Junior.

Junior champion sow, Cunningham on Echo.

Aged herd—1, Cunningham; 2, Yore.

Young herd—1, Cunningham; 2, Fulton; 3, Cunningham.

Herd bred by exhibitor—1, Cunningham; 2, Cunningham; 3, Yore.

Get of sire—1, Cunningham; 2, Cunningham.

Produce of dam—1, Cunningham; 2, Dorsey.

Fat harrow any age—1, Cunningham; 2, Cunningham.

Pen of barrows—1, Cunningham.

Grand champion boar, Cunningham. Reserve, Cunningham.

Grand champion sow, Cunningham. Reserve, Cunningham.

THE BERKSHIRE SHOW AT THE CALIFORNIA STATE FAIR

By W. S. Guilford

Another creditahle showing of Berkshires was made at the 1919 California state fair. About 100 head were shown, and not a poor one in the lot. Hogs were shown by 14 exhibitors; several of them represented for the first time.

Wyman N. Lovejoy of Roscoe, Illinois, a judge of national reputation, judged, and his work was satisfactory to all, breeders and ringside talent alike being pleased with his placings. He goes over the entries carefully but awards the ribbon quickly, a feature that gives satisfaction to spectators, exhibitors and the animals in the ring. There has never been a judge of any breed on the California state fair grounds who did a better joh tban did Mr. Lovejoy. "It is better than the show at the Illinois state fair and a credit to the breed. As good Berkshires are bred and developed on the Pacific Coast as are grown in the world," he said.

Prices were divided among many exhibitors. It seems impossible for any one or two herds to annex all of the ribhons in Western Berkshire shows, and this feature adds interest to every Berkshire exhibition. A dark horse from a new breeder is apt to show up at any time and claim distinction.

The Western Berkshire prizes for new hreeders making higgest winnings went first, Muddox; second, J. A. Parker; third, Italian Vineyard Co.; fourth, S. A. Brittain; fifth, Fair Oaks Ranch. Prizes for the hest boar and sow bred hy exhihitor went to Sandercock and Humphrey on their grand champion. In the aged boar class Rincon Leader, a son of Grand Leader 2nd won for Muddox. He is a hig, long-bodied, stretchy one with lots of hone, a fine upstanding kind of a boar. He was not in high flesh, just in breeding condition. The second prize aged hoar, Grape Wild Emblem, a son of Solano Emhlem, is a thick, low set one, the best fitted and conditioned boar in the ring. He is not only wide hut long and has a splendid short, wide head. The Murphy boar, Wilsonia King Laurel is a very pleasing type. He is good all over and would not be out of place at the head of a ring. Frank B. Anderson's hoar, Ideal Royal Lee, was shown "in his working clothes." He has splendid feet and legs and lots of length. The fifth prize hoar was another good one, not highly fitted, but in splendid breeding condition. His owner, G. F. Donsing of Rio Linda, is a new man in the Berkshire husiness. Two senior yearling hoars were shown, both sons of Royal Superbus. The Humphrey hoar was placed first—but hoth are thick, long and meaty.

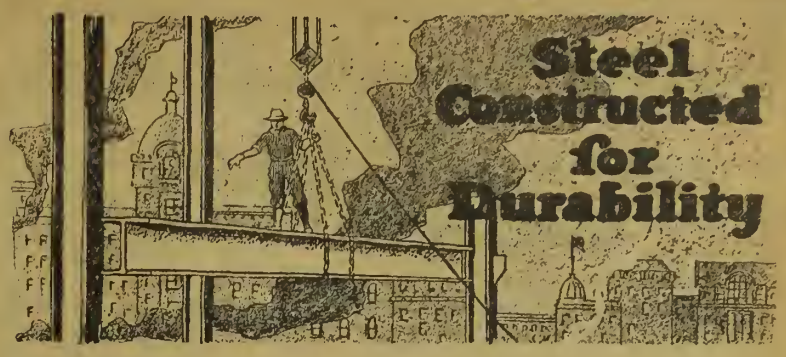
The junior yearling class hrought out the grand champion of the show, one of the best Berkshires that has ever been produced on the Pacific Coast. He is long, smooth, even, has a wonderful arched back, a short, wide head, the best of legs and feet and he is a real big type Berkshire. He was sired by Baron Duke 201st. Natomas Baron Duke was selected by Mrs. E. A. Hardy and Ruland Hardy as the kind of a hoar needed in the Anchorage Farm herd at Orland and was purchased from Mr. Sandercock for $1,000. He goes to one of the best herds in America. The Italian Vineyard Company of Guasti, near Los Angeles, presented a splendid boar in this class. Their first show at Sacramento was a very creditable one, and Choice Goods is a well fitted boar, wide and thick and carrying a full, well rounded ham. S. A. Brittain showed another long, stretchy "big type" son of Baron Duke 201st in third place. A good son of Epochal, deep and long and mellow, but not highly fitted,was placed fourth for H. S. Teesdale of Nevada, another breeder showing at this fair for the first time. The Anderson boar, Natomas Royal Lee, by Ideal Royal Lee, that was placed fifth, was in hreeding condition and not fitted enough for a higher placing.

There were six entries in the senior boar pig class. Humphrey had first and second on two sons of Majestic King 6th. They are long bodied thick ones and well grown. Castleview Ranch, owned by J. Francis O'Connor, was third on a good one by Ames Rival 102d. H. C. Muddux & Son had fourth and fifth on the two good sons of Mayfield Rookwood 2nd.

Eleven junior boar pigs kept the judge busy in the small ring, but he soon placed first and second on two sons of Big Type, shown by Humphrey. Another good son of Mayfield Rookwood 2nd was third for O'Connor, a well grown one, and an even smooth fleshed pig. O'Connor is producing some of the best stock grown anywhere and is a developer of Berkshire trade second to none. Muddox had fourth and fifth on two very fine sons of Rincon's Leader.

The aged sow class at the California state fair is always sensational. This year was no exception. Any one of the 12 splendid animals shown are worthy a place in the best herds in the world, and to be outside the money was no disgrace. Mr. Lovejoy expressed himself as being very much pleased with the first prize sow, Grape Wild Rose,

Conitnued on Page 354



The ACME Cutter

The Combined Silo Filler, Hay Chopper and Alfalfa Meal Machine

When a piece of steel is set in place, securely riveted and hraced as in the frame of the Acme, it "stays put."

The frame cannot "settle" nor the boxes come out of alignment and cause hot bearings.

Steel has made it possible to build the Acme lower so that it can easily be controlled while standing on the ground; to set the blower inside the frame, thereby strengthening that important part and to turn out a machine that is more generally efficient in every way and with a lower upkeep cost.

In other words, you will find the Acme to he the sturdiest, strongest huilt, most durable and dependable ensilage cutter you can buy.

Catalog and sample of meal mailed free upon request.

DE LAVAL DAIRY SUPPLY CO.

61 Beale St., San Francisco

Dispersal Sale Ayrshires

At Public Auction
State Fair Grounds
Sacramento, California
Tuesday, Sept. 16, 1919

This will be a complete dispersal sale of the herd of registered Ayrshires owned by Preston School of Industry, Ione, California, which was founded some years ago with females selected from some of the best known herds in the United States and Canada. These females have been bred to high class bulls of the breed, and in addition to the many good young cows there are many very desirable bred and open heifers, and heifer calves.

60
Registered Cows, Heifers and Bulls

will be approximately the total number in the sale, and besides the females mentioned above there will be the two herd bulls, and several others ready and nearly ready for service. Among them are several that should be attractive to breeders, while dairymen will find a good selection of young bulls.

Every animal guaranteed to be a breeder; every animal over six months old tuberculin tested.

SALE STARTS PROMPTLY AT 10 A. M.—CATALOG ON REQUEST

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Pres. C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneer: Col. Ben A. Rhoades, Los Angeles.

Dairymen---Farmers---Livestock Breeders

It pays to put a sire of character and individuality and an animal that will reproduce himself at the head of your herd. I have always believed it. The history of livestock breeding shows it. But this year, my winnings at the California State Fair proved it conclusively.

The Giant fifteen months old Berkshire boar, Natomas Baron Duke, was the grand champion of the show. He was pronounced by Judge Wyman Lovejoy of Roscoe, Illinois, as one of the best individuals he ever had seen. Immediately after the show Ruland and Mrs. E. A. Hardy, Manager of Mark Requa's Anchorage Farm at Orland, purchased the winner from me for $1,000.00. He has found a home in a herd of splendid foundation sows.

Natomas Baron Duke is the son of Baron Duke 201st—my herd sire, who was Grand Champion at the Omaha National Swine Show. The blood that he carries is the result of thirty years of constructive breeding by the greatest of all breeders, Nick Gentry. Natomas Baron Duke's dam was Natomas Rookwood, on my farm and rebred to Baron Duke 201st, a sow of royal breeding, in the pedigree of which are to be found many prize winners at shows all over the United States.

To breed hogs that will return the most profit to the dairyman or farmer you must have outstanding sires to cross on your grade or scrub sows. The new or old breeder must also have outstanding sows if he is going to breed prize winners.

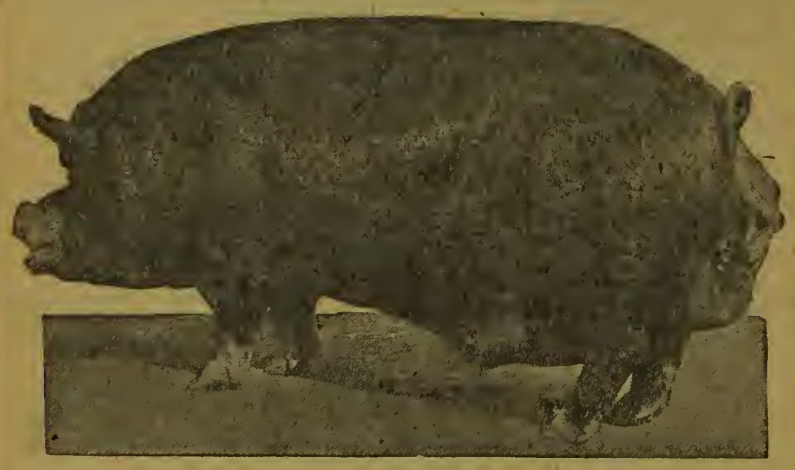
There is more world and national championship blood in my herd of sows than any other herd in the world. A big statement, but true. My sows have been selected regardless of cost, first for excellence of the individual, second on their record as producers of big litters of large, easy feeding pigs—third on their breeding and show record.

Only 600 and 700 pound sows that will farrow twice a year and raise at least seven pigs of each litter are retained in the herd.

This was my first year to show animals actually bred and raised on my farm, yet Baron Duke 201st's offspring won the following prizes: On Boar, Grand Champion, Senior Champion, First Junior Yearling.

Sows: First Junior Yearling, Reserve Senior Champion, Reserve Grand Champion, First Junior Sow Pig and many other lesser prizes.

The three most important prizes are Grand Champion Boar, Aged Herd (three sows and boar) and Get of Sire (three sows and boar), all of which were won by me with Baron Duke 201st pigs.



Baron Duke 201st No. 200001
Grand National Champion, The Sire of Champions

A new folder printed just prior to this Fair and now ready for free distribution to those interested has many pictures of my hogs and gives much detailed information about my Berkshire Herd. The following are excerpts from this folder giving the opinion of the man who bred and raised my 780-pound herd sire, Baron Duke 201st, the $1,100.00 Grand National Champion:

"If Baron Duke 201st is not a good one, I am no judge. His smooth shoulders, great back, width and hams, together with splendid bone and feet, should be appreciated by any judge. I never saw a better width of loin than he has. If more breeders would produce the type of BARON DUKE 201st, there would be many more Berkshires raised and sold. The fact that as good a judge as W. E. Spicer made Baron Duke 201st Grand Champion at the National Swine Show is proof of his superior quality, and there are a good many other leading breeders of the same mind. Every animal on both sides in pedigree of Baron Duke for many generations back was a good one—every one of them. His size, his heart girth, his very smooth shoulders, his back and loin, legs and feet are hard to equal in one animal. If he is not a good one and a well bred one, there is no other. I am glad to give you my opinion of Baron Duke 201st."

N. H. GENTRY, Sedalia, Missouri.

Judge W. E. Spicer said after the National Swine Show:

"Baron Duke 201st is the old-fashoined kind that farmers must have and will have, and will do his part to put Berkshires on every farm."

Wyman Lovejoy, the judge at the 1919 State Fair, said: "I was particularly impressed with the good, heavy bone, great size, spring of rib, large hams, easy feeding characteristics and the uniformity of Baron Duke 201st pigs. They would be hard to beat in any show ring."

The Grand National Champion Baron Duke 201st—the sire of Champions—and his winning daughters are on my ranch and there are a hundred of his sows and boar pigs ready to go into your herd or onto your ranch and help your hogs to gain more meat on the same amount of feed. The prices are no higher than those asked for ordinary pure bred hogs. All of the hogs are immunized for life, with Purity Serum and Mixed Vaccine, against cholera. A letter will bring tho new folder and any Borkshires that you might purchase must be entirely satisfactory or they must be returned at my expense.

W. F. Sandercock

Sandercock Land Co. 23 Montgomery St. San Francisco, Cal.

In Charge of Natomas Land Sales

THE CAROB AS A STOCK FEED

Some owners of hillsides of comparatively waste lands have been interested in the carob as a possible live stock feed producer, and questions continue to come to this office regarding its value and the feasibility of planting, especially on these waste lands. We may say that some are so enthusiastic that they think even a medium priced land could be used, but this would probably not be the general belief, at least not until years of production show what the carob tree will do. It must be borne in mind that the bean, or St. John's bread, varies greatly in sugar and protein content, that is, it seems to be necessary to plant only grafted or budded trees in order to secure bearers of a high quality product.

Fred K. Howard, when still horticultural commissioner of Kings County, secured a fund of information regarding the carob and its feeding value. From that portion of his report touching upon its value we quote:

"Horses, cattle, sheep and hogs take readily to the pods, and turkeys soon learn to fly into the tree, tear off the pods, break and eat them. Chickens will readily feed on the pods when broken up. The carob is the main forage for the English cavalry horses in Malta and for the tram horses in Naples, while it is a common sight to see the London cabby give his horse a feed of the brown pods while waiting for a customer. The Island of Cyprus grows large quantities of this forage and it constitutes its largest export. The carob is a splendid avenue tree, and hundreds of California farmers could add very materially to their forage supply by planting these trees where shade and ornamental trees are desired.

Feeding Value

"Dr. F. W. Woll, professor of animal nutrition, University of California, at the Davis Farm, carried on a feeding test with calves. One bunch of calves received as their grain portion, ground milo and ground barley, half and half; the other bunch received an equal amount of crushed carob pods and ground milo, half and half. This experiment extended over a period of 13 weeks, and at the close of the period those fed on milo and barley had averaged a gain of 1.70 pounds per day; while those fed on carob pods and milo averaged 1.81 pounds. Those fed carobs required more hay than the others so taking it altogether, the carob showed values equal to ground barley.

"The seeds come readily. By planting the seed pods on edge, close together in a sprouting box, with a slight covering of soil there will be a succession of seedlings covering two or three years. This method seems to protect the young seedlings from the damping off fungus that otherwise causes a great loss in plants. There seems to be a ferment in the pod that protects the early growth. Seeds stripped from the pod and treated with hot water come quickly, but these young plants are very susceptible to the damping off fungi.

"Eighteen degrees of frost will not injure the carob to any extent. Frost conditions that did marked damage to citrus trees made no impression on carobs growing within a few feet of them.

"And what more can be said? Do we advocate planting carobs instead of grains? Shall we plow up our alfalfa and put in this thrifty tree? Are we proposing to revolutionize present good systems of farm procedure? Not at all. But we do urge and expect that the good sense of those who may read this will induce some of them to make a respectable planting of the tree in places where now there is small return and watch the development."

LEGUMES A SUBSTITUTE FOR GRAIN

That profits may sometimes be increased by the substitution of legumes for a large part of the concentrates in the dairy ration is brought out by cow testing association records obtained by the dairy division of the Unitcd Statos department of agriculture. The records from six associations where alfalfa formed a large part of tho dairy ration were compared with the records from eight associations where legumes were fed sparingly with the following results:

In the alfalfa district the cost of grain was 16 per cent of the total feed cost, and in the other district the cost of grain was 41 per cent of the total feed cost. The average milk yield of the alfalfa-fed cows was 6805 pounds and the average yield of butter fat was 281 pounds. In the other district the average milk yield was 5234 pounds and the average yield of butter fat was 238 pounds. For the alfalfa-fed cows the average inoome over cost of feed was $73 and for the grain-fed cows the average income over cost of feed was $37.

The alfalfa fed cows may have been better cows and the climate may have been better adapted to dairying, but as both districts are favorably known for their dairy products it may be assumed that the cows were of good quality and well cared for in both districts. It seems fair, therefore, to conclude that the higher production and greater income above feed cost of the alfalfa-fed cows was due largely to the feeding of home grown legumes. In any case it is well worth while for the farmers in one district to study the feeding practices of other districts. If legumes add to net profits, why not grow and feed more legumes? If the soil is not adapted to legumes it may pay to add lime or manure or whatever else it lacks in order that the dairy herd may be supplied with an abundance of home grown legumes.

ARIZONA STOCKMEN WANT GRAZING LANDS UNDER FEDERAL CONTROL

Fifteen years ago the forest service of the United States department of agriculture tackled the big job of administering the national forest area. This area contained much of the finest grazing land in the country. Naturally its administration brought up many questions which incited tho discussion and often times criticism of the stockmen. The newness and the vastness of the enterprise naturally at the beginning resulted in many mistakes while the big forestry grazing policies were being evolved.

Stockmen of 13 western grazing states met in conference in Salt Lake City recently and a resolution was passed, almost uanimously, asking congress to provide for administration by the United States department of agriculture of all public lands of the country after somewhat the same fashion as the forest service is now administering grazing land within the national forests.

During the Southern Arizona tour of the live stock squad of the agriculture extension service of the University, cattlemen were interviewed all along the line to obtain their viewpoint on this question. Only one of some score of large or moderately large cattle outfits, where the owner or managers were interviewed, expressed opposition to federal control of the public grazing lands. This is a splendid vindication of the forest service grazing policy.

FOR CURING MEAT

Ten quarts of salt.
Three teacups of black pepper.
Three tablespoons cayenne pepper.
Five pounds cane sugar.

Put in a large pan and heat, stir and mix thoroughly while warming. Then take this mixture to where you are going to pack your meat. Take one joint at a time and put it in the pan, rub salt mixture on well. Use only clean boxes or clean salt barrels. This amount is for ten hogs, weight from 250 to 275 pounds.

Four weeks are long enough for the sides and five to six weeks for the joints to remain in salt before taking up. Now have a kettle of boiling water ready; dip each piece of meat in it and lay on a table to dry. When thoroughly dry, rub with powdered borax and black pepper, oqual parts. Your meat is now ready to smoko.

Clean cobs, or hard wood is the best thing to smoke meat with. Be sure and put one to two tablespoons of sulphur on tho smoke fire once each day.

Why dream of the future when you can grab right hold of the forelock of today and ride anywhere?

HOW

The Paraffine Companies Inc. helped develop the oil and asphalt industry of California

The tremendous growth of the oil and asphalt industry of California was due in a measure to The Paraffine Companies, Inc.

How?

"Black Paraffine" Apparently Worthless

In the early days, oil experts from the Pennsylvania fields, thought that the black viscous residue left after the lighter oils had been distilled from California petroleum was "black paraffine." But it was not like the paraffine they knew, and they considered it worthless.

For a long time the oil industry was handicapped by the large quantity of this black residue.

Its Great Value Discovered

Then came Beardsley, an Eastern oil expert, and Pierce, a chemist, who resolved to find a use for it. They experimented ceaselessly without result, until one day by accident they discovered that this "black paraffine" would dissolve readily in that evil-smelling liquid known as carbon bisulphide. Their search was at an end. They had made a paint which dried quickly and withstood the action of acids and alkalis.

As a result of this discovery The Paraffine Paint Company was formed to manufacture the now famous "P & B" paints and a small plant was established in Oakland in 1884.

Oil Was Distilled to Get the Asphalt

During the early life of The Paraffine Paint Company there was difficulty in securing enough "black paraffine," or what was later discovered to be asphalt. The oil companies had trouble in supplying it, because it forced them to distill a large quantity of the lighter oils in order to get the residue. And, they stated, there was little or no market for the distilled products! Thus, for a time, asphalt was the main product and the lighter oils the by-products. A curious situation in the light of present-day conditions.

Growth of The Paraffine Paint Company

Through the company's success in making paint, other uses for asphalt were sought and found, and it gradually extended its business. New products were brought out from time to time, such as "P & B" roofings—the original ready roofing—building papers, specialty paints and wall-board, and later, floor coverings.

The Paraffine Companies, Inc., Organized

Built upon a solid foundation and a policy of high quality always, the Company grew and expanded until in November, 1917, The Paraffine Paint Company with other companies was merged into The Paraffine Companies, Incorporated. Today this organization is one of the largest industrial concerns in the West and the products of its fourteen great plants are distributed throughout various parts of the world.

Everybody on the Pacific Coast who has ever had anything to do with building construction knows the names of the "P & B" products, Malthoid and Ru-ber-oid Roofings, as the standards of ready roof

THE PARAFFINE COMPANIES, INC.
San Francisco

TRADE MARK
PABCO
PRODUCTS

Roofings
Felts
Building Papers
Waterproofing
Materials
Wall-Board
Floor Covering
Industrial Paints
Box Board
Paper Boxes
Fibre Containers

MALTHOID and RU-BER-OID
READY ROOFINGS

MONEY MAKING HOLSTEINS
AT PUBLIC AUCTION

Registered Holsteins are harder to buy today than they have been before in many years, for never before have owners been holding on to what they already have as closely as they do now, because of the more substantial basis upon which the dairy industry is being placed all over the country.

HENDERSON COMPANY, Sacramento, Calif., now have a herd of registered Holsteins numbering 333 head, which is about the present capacity of their ranch, and they are therefore now in position to offer good breeding stock regularly.

BONITA STOCK FARM, Lodi, Calif., the property of J. M. Henderson, now has 160 registered Holsteins in its herd, which is also about the capacity of the farm, and surplus breeding stock will be sold from this herd regularly.

These two herds will be represented in a combination sale at public auction of

65 Registered Holstein Cows, Heifers and Bulls

Stockton, Calif., Thursday, September 18, 1919

Every female in this sale that is of breeding age, and practically all of them are, either fresh or heavy in calf to a high class bull. A very large number are bred to King Pontiac Segis Inka, whose offspring were winners at the recent State Fair; King of the Black and Whites, the famously bred bull who has more A. R. O. daughters than any other bull on the Pacific Coast; King Lillian Walker Segis, son of King of the Black and Whites; and Supreme Glista Pietje, the richly bred bull that sired the junior champion bull at the California State Fair this year.

Consider The Worth of Their Calves

Both herds are selling some splendidly bred and high producing cows and heifers, many with official records. There is no reasonable doubt that many of them will sell for less than their calves will be worth by these great sires. It is therefore an opportunity that can hardly be overestimated for the purchase of foundation animals at modest investment.

BULLS IN THE SALE

The sale will include MODEL DOMINO GLISTA, who was first prize two year old at this year's State Fair, a splendid individual of excellent breeding. A very desirable selection of young bulls will be offered, with the breeding and type that will breed quality into the best dairy herds. They are all in good condition and many are about ready for service.

Every animal guaranteed to be a breeder

No animal in sale tuberculin tested

Sale will be held at DARBY'S BARN, corner Pilgrim and East Lafayette Streets, Stockton, California, Thursday, September 18, beginning promptly at 10:00 o'clock A. M.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Cal.
Auctioneers: COL. BEN A. RHOADES, Los Angeles.
COL. GEO. W. BELL, Tulare.

50 Registered Holsteins 50
at Public Auction

Having leased their ranch, Agee Bros. will sell at public auction 50 registered Holstein cows, heifers, and bulls, at

Holtville, Imperial County, California
Wednesday, October 8, 1919

This is a well bred offering, and the females are practically all in calf to the richly bred bull Toyon Fayne Valdessa, who is by the 41 pound bull King Valdessa and out of a 30 pound 4 year old daughter of King Hengerveld Aaggie Fayne.

The offering of bulls is an excellent one, and should be particularly attractive to dairymen in Imperial and other southern counties, for it is not often that so desirable a lot is offered at auction so close to home.

Catalog in preparation. A copy free on request.

Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager,
Sacramento, Calif.
Auctioneers—Rhoades & Rhoades, Los Angeles.

When writing advertisers, mention The Cultivator.

THE BERKSHIRE SHOW

Continued from Page 351

afterward grand champion. She is a daughter of Grand Leader 2nd and just fills the eye of anyone looking for Berkshire perfection. She is big and has lots of quality. She is long, has widely sprung ribs, deep side, a wonderful ham, the best of feet, plenty of bone, and everything else a grand champion sow should have. Another, Grand Leader 2nd, sow of the same kind was second, and a sister to Barkers Real Type was third. The fourth prize went to Daisy Lee 11th shown by Fair Oaks Ranch. Sandercock had fifth on a smooth evenly turned daughter of Ames Rival 100th, a well fitted show sow, not so large as some of the others.

Four senior yearling sows were shown. Humphrey had first and second on daughters of Royal Superbus; Muddux was third on a real show sow that at the close of the fair was raising ten pigs. O'Connor had fourth on a daughter of the Rival Champion boar brought to the Coast some time ago by A. W. Foster, and Muddux was fifth on a daughter of the same boar. There were seven junior yearlings—and the class was headed by Dukes Natomas Princess, a daughter of Baron Duke 201st, that was afterward made junior champion and reserve grand champion. This sow is big and long and has lots of quality. Humphrey had second on a daughter of Solano Emblem, third on a daughter of Humphrey Grand Leader and fifth on a Fashion Longfellow 27th sow. Another Baron Duke 201st sow was fourth for Sandercock.

There were 16 entries in each of the sow pig classes. In the senior class O'Connor had first and junior champion on a daughter of Iowana Rival Champion 4th, Humphrey had second and reserve junior champion on a Big Leader pig.

A number of pig clubs were shown in the junior class. Both of these classes were very creditable.

O'Connor showed the winning barrow, a pig sired by his boar, Mayfield Rookwood, the sire of the champion barrow at the 1919 Berkshire congress.

The awards follow:

Aged boar—1, Muddux on Rincon Leader; 2, Humphrey on Grape Wild Emblem; 3, Murphy on Wilsonia King Laurel; 4, Anderson on Ideal Royal Lee; 5, Donsing on Ames Rival Natomas.

Senior yearling—1, Humphrey on Escalon Superb; 2, Barker on Escalon Grand Royal 2d.

Junior yearling—1, Sandercock on Natomas Baron Duke; 2, Italian Vineyard Co. on Choice Goods 10th; 3, Brittain on Barrows Baron Duke; 4, Teasdale on Nevada Epochal; 5, Anderson on Natomas Royal Lee.

Senior pig—1, Humphrey on Escalon Type; 2, Humphrey on Escalon Type 2d; 3, Castleview Ranch on Castleview Rival 2d; 4, Muddux on Meadowview Rival; 5, Muddux on Wiesendenger Prince.

Junior pig — 1, 2, Humphrey on unnamed pig; 3, Castleview Ranch on Castleview Rival Duke; 4, Muddux on Meadowview Rival 3rd; 5, Muddux on Meadowview Rival 2nd.

Aged sows—1, Humphrey on Grape Wild Rose; 2, Humphrey on Leader's Jeannette 2d; 3, Sandercock on Wilsonia Princess Laurel; 4, Fair Oaks Ranch on Daisy Lee 11th; 5, Sandercock on Live Oak Laurel.

Senior yearling—1, 2, 3, Humphrey on Escalon Blue Belle, Royal Polly 2d, Live Oak Belle; 4, Castleview Ranch on Hopland Iowana Princess 4th; 5, Muddux on Hopland Grand Lady.

Junior yearling — 1, Sandercock on Duke's Natomas Princess; 2, Humphrey on Emblem's Escalon Belle; 3, Humphrey on Grape Wild Rose 3rd; 4, Sandercock on Baron Duke's Princess 11th; 5, Humphrey on Escalon Majestic Fashion.

Senior pig—1, Castleview Ranch on Premier Belle; 2, 3, Humphrey on Grape Wild Rose 6th, Leader's Artful Bell 8th; 4, 5, Muddux on Meadowview Duchess 4th and Meadowview Duchess.

Junior pig—1, Sandercock on Double's Duchess; 2, Castleview Ranch on Castleview Rival Duchess; 3, 4, Humphrey on Grape Wild Rose 8th, Escalon May 11th; 5, Sandercock on Natomas Symboleer Belle.

Senior champion boar, Sandercock on Natomas Baron Duke. Reserve senior champion boar, Muddux on Rincon Leader.

Junior champion boar, Humphrey (unnamed). Reserve, Humphrey (unnamed).

Senior champion sow, Humphrey on Grape Wild Rose. Reserve senior champion, Sandercock on Duke's Natomas Princess.

Junior champion sow, Castleview Ranch on Castleview Premier Belle. Reserve junior champion sow, Humphrey on Grape Wild Rose 6th.

Grand champion boar, Sandercock on Natomas Baron Duke. Reserve grand champion, Muddux on Rincon Leader.

Grand champion sow, Humphrey on Grape Wild Rose. Reserve grand champion sow, Sandercock on Duke's Natomas Princess.

Aged herd—1, Sandercock.

Young herd—1, Humphrey; 2, Sandercock; 3, Castleview Ranch; 4, Muddux.

Herd bred by exhibitor—1, 2, Humphrey; 3, Sandercock.

Get of sire—1, Sandercock; 2, Humphrey; 3, Muddux; 4, Castleview Ranch.

Produce of dam—1, Muddux; 2, Humphrey; 3, Sandercock; 4, Castleview Ranch; 5, Anderson.

THE SHORTHORNS

By R. P. Royce

Four herds of Shorthorns, two making their initial show at Sacramento, staged one of the best shows seen in recent years. There have been shows where more herds were represented, but few shows have brought together such a uniformly good lot of cattle as were placed before Judge Burns. The judging was postponed until Wednesday out of courtesy to the Dibblee herd, delayed on account of the strike. It was the initial show of this firm at the state fair. Their arrival added strength to the show.

Only one aged bull was shown. Hallwood Flash from the Dibblee herd was presented in splendid condition. He has done well since the show at Los Angeles last December and there was little opposition to him for senior champion until he was stopped at the top by his young stable mate.

The two two year olds were rated as they stood at Los Angeles last year, the white Pacheco Marshall, from the Pachcco herd, winning over the roan Matchless Elite shown by Glide. The white bull is smoother in his covering than the Glide entry, especially is he smoother at the tail, but he is scarcely so thick. His more attractive head added to the margin he held over the second bull.

The senior yearling class furnished the junior and grand champion in the Dibblee entry, the white Basham Augusta, junior champion as a calf at Los Angeles last fall. This youngster has come on wonderfully and his pleasing front, straight lines and remarkable smoothness and quality carried him through to the top. He is not as highly fitted as the Pacheco entry that stood second over a bull from the Glide herd, but is wider on top.

Wm. Bond, showing for the first time, won the junior yearling class with Cumberland Gloster. Pacheco Lad 145th was second with more size and a more attractive front than the winner but he was not so even on top or at the tail head nor was he as strong in the heart.

The four senior calves were headed with the red, Cheerful Count, shown by Glide. He is a calf of even balance, quite smooth in his covering and particularly better in his flank than Pacheco Cumberland in second place with more scale. The two Dibblee entries were calves of different type from the two ahead of them, both being put up on shorter legs. The third calf was a soggy youngster but was rather plain in his rear conformation. The Pacheco and Glide junior calves divided honors and were placed as named.

Glide showed the only aged cow, Spicy Lady, a white, of beautiful character, level on top, thick and very smooth. She is the sort that can stand a lot of competition.

The five two year olds constituted one of the strongest classes of the show and brought out a line-up that would look well most any place. There was slight question as to the top, furnished by Glide in Little Sweetheart, regarded by many as one of the best Shorthorn females ever seen at Sacramento. She is a beautiful red, with a bit of white, and from front to rear is hard to fault. Front with a head combining character and sweetness set on a neck that blends into the shoulders almost faultlessly, extremely wide and thick in the crops and along the back and with exceptional depth, she carries her width fore to aft and down into her quarters to a degree rarely seen. Barring a slight roughness about the tail she is not to be criticized.

The Pacheco entry in second was Pacheco Lass 118th, a winner at last year's fair. She would have looked well at the head of a class with a top less outstanding. She was somewhat handicapped by reason of the fact that she is raising a calf which accounted for her plainness behind as compared with the winner. She looked well above the light roan Dibblee entry, heavy in calf and scarcely so thick, but quite smooth and sweet in front. Bond was third with Mayfield Victoria, hardly so large and a bit harsh to the touch. Pacheco was fifth with a roan

of scale, but lacking the levelness, quality and character of those above her.

The senior yearlings, with four showing, met strong competition in the thick, well balanced, light roan shown by Glide. Dibblee Estate had the three remaining places. The second heifer, a red, had more size than the winner, but was not so strong on top. The third calf had an easy time annexing her place.

Glide was again at the front in the junior yearling, with a thick roan heifer that was not so smooth as the attractive red shown by Bond but with more size. Pacheco was fourth, Dibblee fifth.

With nine senior heifer calves, Judge Burns did an artistic job of rating. He found his top in the outstanding white calf shown by Pacheco, a lovely little lady that was a regular block of meat, yet sweet and well balanced with a hide a trifle thick. Dibblee was second with a smooth light roan of good lines, lacking a bit in character. Pacheco was third with a rich coated roan. Glide was fourth and another Pacheco entry was fifth and one from the Dibblee herd sixth.

The three juniors had a Glide entry in first place, Pacheco second and Bond third. The awards follow:

Exhibitors: Alexander & Kellogg, Suisun; Leon F. Douglas, San Rafael; Thos. Harrison, Santa Rosa; C. A. Murphy, Perkins; Chas. L. Weaver, Tulare.

Aged bulls—1, Harrison on Foothills Pioneer; 2, Harrison on Daisy's Lad.

Two year olds—1, Alexander & Kellogg on Westward Ho; 2, Weaver on North Star.

Junior yearlings—1, Murphy on Mary's Chief.

Senior bull calves—1, Harrison on Count Tickford; 2, Murphy on Frantic Chief 2d; 3, Weaver on The Westerner.

Junior bull calves—1, Harrison on Brighton Gloster; 2, Alexander & Kellogg on Innisfail Favorite; 3, Douglas on Pedro Forrest; 4, Alexander & Kellogg on Innisfail Hettie; 5, Alexander & Kellogg on Kelmscott Charles.

Senior champion bull, Foothills Pioneer.

Junior champion, Count Tickford.

Grand champion, Foothills Pioneer.

Cow having official record—1, Alexander & Kellogg on Bellevue Daisy; 2, Alexander & Kellogg on Carperby Dairy Maid 2d.

Dairy Herd—1, Alexander & Kellogg.

Aged cows—1, Alexander & Kellogg on Lady Beatrice; 2, Alexander & Kellogg on Bellevue Daisy; 3, Harrison on Naomi 2d; 4, Weaver on Idlewood 12th.

Two year olds—1, Alexander & Kellogg on Carol; 2, Alexander & Kellogg on Alma.

Senior yearlings—1, Harrison on Glen Dorothy; 2, Harrison on Welfare's Belle; 3, Alexander & Kellogg on Annabel; 4, Alexander & Kellogg on Rose Fairfield.

Junior yearlings—1, Harrison on Rose Duchess 2d; 2, Alexander & Kellogg on Innisfail Dairymaid; 3, Alexander & Kellogg on Roan Lily; 4, Weaver on Bonnie May.

Senior heifer calves—1, Harrison on Santa Rosa Queen; 2, Alexander & Kellogg on Valley Belle 6th; 3, Alexander & Kellogg on Beggar Maid's Beauty 2d; 4, Harrison on Wild Eyes Princess 4th; 5, Harrison on Lady Christiana 12th.

Junior heifer calves — 1, Harrison on Frantic Beauty.

Senior champion cow, Lady Beatrice; junior champion, Glen Dorothy; grand champion female, Lady Beatrice.

Graded herds—1, Alexander & Kellogg; young herds—1, Alexander & Kellogg.

Produce of cow (two)—1, Alexander & Kellogg; 2, Alexander & Kellogg.

Get of sire (four)—1, Alexander & Kellogg; 2, Alexander & Kellogg.

Exhibitors: T. S. Glide, Davis; Estate of Thos. Dibblee, Lompoc; Pacheco Cattle Co., Hollister; Wm. Bond, Newark.

Aged bulls—1, Dibble Estate on Hallwood Flash.

Two year olds—1, Pacheco Cattle Co. on Pacheco Marshall; 2 Glide on Matchless Elite.

Senior yearlings—1, Dibblee Estate on Basham Augusta; 2, Pacheco Cattle Co. on Dalmeny Count; 3, Glide on Hillcrest Amaranth.

Junior yearlings—1, Bond on Cumberland Gloster; 2, Pacheco Cattle Co. on Pacheco Lad 145th.

Senior bull calves—1, Glide on Cheerful Count; 2, Pacheco Cattle Co. on Pacheco Cumberland; 3, Dibblee Estate on Baron Lancaster; 4, Dibblee Estate on Orange Villager.

Junior bull calves—1, Pacheco Cattle Co. on Pacheco Barmpton; 2, Glide on Spicy Count.

Senior champion bull—Hallwood Flash.

Junior champion—Basham Augusta.

Grand champion—Basham Augusta.

Aged cows—1, Glide on Spicy Lady.

Two year olds—1, Glide on Little Sweetheart; 2, Pacheco Cattle Co. on Pacheco Lass 118th; 3, Dibblee Estate on Meadow View Village Girl; 4, Bond on Mayfield Victoria; 5, Pacheco Cattle Co. on Pacheco Lass 111th.

Senior yearings—1, Glide on Kings Countess; 2, Dibblee Estate on Princess Royal; 3, Dibblee Estate on Lancaster Lady; 4, Dibblee Estate on Lavender Green.

Junior yearlihgs—1, Glide on Village Lassie; 2, Bond on Ormondale Maid; 3, Pacheco Cattle Co. on Pacheco Lass 141st; 4, Dibblee Estate on Ruby Avon.

Senior heifer calves—1, Pacheco Cattle Co. on White Pacheco; 2, Dibblee Estate on Lucy Lee 5th; 3, Pacheco Cattle Co. on Pacheco Blossom; 4, Glide on Village Rose; 5, Pacheco Cattle Co. on Pacheco Bloom; 6, Dibblee Estate on Orange Blossom A.

Junior heifer calves—1, Glide on Countess Fortuna; 2, Pacheco Cattle Co. on Pacheco Doris; 3, Bond on Cumberland Maid.

Senior champion cow, Little Sweetheart. Junior champion, King's Countess. Grand champion female, Little Sweetheart.

Graded herds—1, Dibblee Estate; 2, Glide; 3, Pacheco Cattle Co. Young herds—1, Glide; 2, Pacheco Cattle Co.

Calf herds—1, Glide; 2, Pacheco Cattle Co; 3, Dibblee Estate; 4, Pacheco Cattle Co. Produce of cow (two)—1, Dibblee Estate; 2, Glide; 3, Glide; 4, Pacheco Cattle Co.

Get of sire (four)—1, Glide; 2, Pacheco Cattle Co.; 3, Dibblee Estate; 4, Pacheco Cattle Co.

The Guernseys

The Guernsey show was crippled in more ways than one. The Dupee herd was unable to show, owing to the tie-up of railroads in Southern California, and the car containing the splendid exhibit of Elliott-Brant Rancho was derailed on the way up and practically every animal showed at least a scratch or two. The herds of Elliott-Brant Rancho, L. D. Smith and A. B. Humphrey made a strong showing for the breed even under handicaps. The awards:

Exhibitors: A. B. Humphrey, Escalon; Elliott-Brant Rancho, Owensmouth; H. K. Fish, Santa Barbara; L. D. Smith, Berkeley; James Marwick, Santa Barbara.

Aged bull—1, May King of Fern Ridge, Elliott-Brant Rancho; 2, Bullion of Edgemoor, Humphrey; 3, Mysie's Duke of Claremont, Smith; 4, Brookmead's White Face, Elliott-Brant Rancho.

Two year olds—1, Escalon Challenger, Humphrey; 2, May King of the Rancho, Fish; 3, Palo Boy, Smith; 4, Mysie's Prince of Claremont, Smith.

Senior yearling—1, Mysie's Laddie of Claremont, Smith; 2, Mysie's Linden Boy, Marwick.

Junior yearling—1, Nobleman of Maple Hill, Humphrey; 2, Lady Red's White Face of the Rancho, Elliott-Brant Rancho.

Senior bul calf—Admiral of the Rancho, Elliott-Brant Rancho; 2, Escalon Beauty Boy, Humphrey; 3, Prince Mysie of Claremont, Smith.

Junior bull calf—Escalon Truetype, Humphrey; 2, Syivester of the Rancho, Elliott-Brant Rancho; 3, Warrior of the Rancho, Elliott-Brant Rancho; 4, Glen's Fawn of Claremont, Smith.

Cows, four years old or over—1, Princess of Meadowbrook, Elliott-Brant Rancho; 2, Pet's Pansy of Pine Grove, Elliott-Brant Rancho; 3, Fair of Alfalfa Farms, Saylor; 4, Mysie's May of Claremont, Smith.

Three years and under four—1, Elsie of the Rancho, Elliott-Brant Rancho; 2, Corfu of Hillside, Elliott-Brant Rancho; 3, Mysie's Hope of Claremont, Smith; 4, Mysie's Star of Claremont, Smith.

Two years and under three—1, Dorothea of Green Lodge, Elliott-Brant Rancho; 2, Jeanie of Green Lodge, Elliott-Brant Rancho; 3, Calla Grove Itchen May, Humphrey; 4, Mysie's Moon of Claremont, Smith; 5, Lady's Bettie of Claremont, Smith.

Senior yearling—1, Redwing of the Rancho, Elliott-Brant Rancho; 2, Escalon Evangeline, Humphrey; 3, Mysie's May of Claremont 2nd, Smith; 4, Escalon Bopeep, Humphrey; 5, Mysie's White May of Claremont, Smith.

Junior yearlings—1, Butternut Queen of the Rancho, Elliott-Brant Rancho; 2, Little Queen of the Rancho, Elliott-Brant Rancho; 3, Calia Grove Merry Princess, Humphrey; 4, Mysie's Poppy of Claremont, Smith.

Senior heifer—1, Rosemary of the Rancho, Elliott-Brant Rancho; 2, Escalon Lassie, Humphrey; 3, Escalon Maggie, Humphrey; 4, Jilda of the Rancho, Elliott-Brant Fancho; 5, No Name, Smith.

Senior champion bull—May King of Fern Ridge.

Junior champion bull—Escalon Truetype.

Senior champion cow—Princess of Meadowbrook.

Junior champion — Redwing of the Rancho.

Grand champion bull—May King of Fern Ridge.

Grand champion female—Princess of Meadowbrook.

Aged herd—1, Elliott-Brant Rancho; 2, Humphrey; 3, Smith.

Young herd—1, Elliott-Brant Rancho; 2, Humprey; 3, Smith.

Calf herd—1, Humphrey; 2, Elliott-Brant Rancho; 3, Smith.

Get of sire—1, Humphrey; 2, Elliott-Brant Rancho; 3, Smith.

Produce of dam—1, Elliott-Brant Rancho; 2, Humphrey; 3, Elliott-Brant Rancho.

Dairy herd—1, Elliott-Brant Rancho; 2, Smith.

CATTLEMEN'S BANK

The California Cattleman, organ of The State Cattlemen's Associataion, suggests a bank which shall be financed and controlled by the cattlemen of California. It says:

"The suggestion came originally from H. A. Krohn of Coarsegold, Madera County, and at the time he made it there was available from his community upwards of $100,000 for investment in such an institution. There is no gainsaying the fact that a bank, whose policies were to be directed by the cattlemen for the benefit of the cattlemen, would become a tower of needed strength. No better paper than cattleman's paper exists, and no more honorable cattlemen than the genus Californicus may be found."

PRINCE RIVERSIDE WALKER

OUR SENIOR HERD SIRE

His Sire: PRINCE GELSCHE WALKER, whose daughters have broken more state and world's records than the daughters of any other single sire in California, and whose get have outsold the get of any other sire in the west.
His Dam: AAGGIE ACME OF RIVERSIDE, who recently completed her second yearly record with 1053.14 pounds butter from 20,354.8 pounds milk beginning her record at past 11 years of age. She is dam of the world's official yearly record cow Aaggie Acme of Riverside 2nd, 1331.78 pounds butter in one year, who in turn is dam of the sensational junior two year old heifer Miss Aaggie Acme Burke who promises to make right around 1000 pounds butter in one year at first oalving.
A son of PRINCE RIVERSIDE WALKER out of one of our good cows is first class insurance against unproductive cows in your future herd. Let us describe and quote one to you.

OUR ENTIRE HERD IS TUBERCULIN TESTED.

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W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

It's a Source of Satisfaction to Know Where to Find the Right Kind of Hogs When You Want to Buy

King Jones Over

A son of the great King Jones. Dam by Long King out of a Big Bob sow. He possesses all the qualities of the modern Poland-China, weighs 600 pounds at 14 months, stretchy, deep, well hammed and right up on his toes.
He leads the best herd of strictly big type sows in California.
Some extra good fall boars for sale now. Choiera immune.

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Johnson's Defender Jr.

the greatest representative of Defender, Duroc-Jersey's greatest blood lines. He was the smoothest boar shown at the state fair, stands on four good feet and was 2nd in the strongest class ever shown in the state. We showed four of his pigs and won four ribbons. Many on the farm just as good as those shown. We have some for sale at reasonable prices. Write at once for description.

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that we are breeding popular Duroc-Jerseys, we made the highest average in the July sale of the Tulare County Duroc-Jersey Breeders' Association. We topped the sale at $300.
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Joe N. Chinowth Visalia, Calif.

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That's one reason, and a mighty good reason, for our large business.
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Allen Thompson Tulare, Calif.

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PURITY SERUM CO., J. L. Thatcher, Manager (Successor to Thatcher Serum Co.)
Riverside, Calif. Sacramento, Calif.

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A real big type Poland-China boar by Forrest View Bob by Caldwell's Big Bob. Bred big. Is big. Two litter mates now for sale at a reasonable price. His pigs a little later. Write for price and description.

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We offer one two-year-old, a direct grandson of Champion Flying Fox. Also one yearling—nothing better—from dams of great records. Write your wants. Prices reasonable

Dr. H. W. Hand Orland, Calif.

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are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 4th, one of the best bulls in the West. Correspondence invited and visitors welcome.

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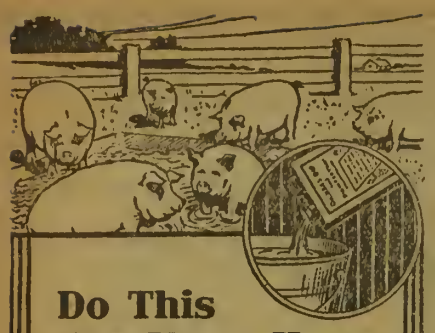

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Provide a wallow close to the feeding grounds to which add Dr. Hess Dip and Disinfectant. The **DIP** will kill the lice and cleanse the skin, and as the hogs pass back and forth from the wallow to the feed trough, the **DRIP** will destroy the disease germs and the worms that pollute the ground. That will mean a clean, healthy skin, freedom from lice, a safeguard against disease and larger, better porkers. Also sprinkle freely about poultry houses, pens and stables to destroy germs and avoid contagious diseases. An excellent disinfectant for the home.

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Complete Hog Feed
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will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. $2.50 per bottle delivered. Describe your case for special instructions, and Book 8 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and Inflammation. Price $1.25 a bottle at druggists or delivered. Liberal trial bottle postpaid for 10c.
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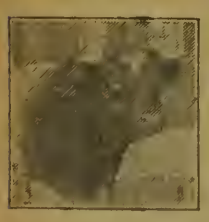

The time to start with a few registered Shorthorns is now. They are as cheap today compared with other values as ever. The soonor you get started the soonor your profits will come in.

It doesn't require a large acreage. Whether your farm is large or small you can handle pure-bred Shorthorns profitably.

Don't keep three grades if one Shorthorn will make as much return as the three.

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America's Pioneer Dog Medicines

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Club Work Keeps Boys on the Farm

By Robert W. Hodgson, Farm Advisor for Los Angeles County

ONE of the pressing problems confronting American agriculture at the present time is that of keeping our country boys on the farm. History teaches us that the rural population ultimately furnishes the ruling class for our cities. The reason is that the average family in the American city is not large enough to take care of repopulation. Our cities have grown and will continue to grow at the expense of the rural sections. If America is to remain for Americans it is of the utmost importance that boys of the Angio-Saxon stock remain on the farms of this country.

One of the main reasons why the American boy has left the country for the city is that he early receives the impression there is little or no money to be made in farming. While he toils and sweats at pitching hay or plowing, for which he receives nothing, his city cousin is holding down a job at the corner drug store at a dollar a day or better. Dad is the only man on the farm who ever sees any money, Johnny only occasionally being given a 50-cent piece or a dollar when the circus comes to town. It is no wonder that early in life the average country boy decides that when he grows up he will move to town to live. His reason for his feelings may well be summed up in the following lines:

"Why did you leave the farm, my lad,
Why did you bolt and quit your dad?
Why did you beat it off to town,
And turn your poor old father down?"
Thinkers of platform, pulpit, press,
Are wallowing in deep distress;
They seek to know the hidden cause
Why farmer boys desert their pa's,
Some say they long to get a taste
Of faster life and social waste;
And some will say the silly chumps
Mistake the suit cards for their trumps,
In wagering fresh and germless air
Against the smoky thoroughfare,
We're all agreed the farm's the place,
So free your mind and state your case.
"Well, stranger, since you've been so frank,
I'll roll aside the hazy bank,
The misty cloud of theories,
And tell you where the trouble lies.
I left my dad, his farm, his plow,
Because my calf became his cow;
I left my dad—'twas wrong, of course—
Because my colt became his horse.
I left my dad to sow and reap,
Because my lamb became his sheep.
I dropped my hoe and stuck my fork,
Because my pig became his pork,
The garden truck that I made grow,
'Twas his to sell, but mine to hoe.
It's not the smoke in the atmosphere,
Nor the taste for life that brought me here;
Please tell the platform, pulpit, press,
No fear of toil or love of dress,
Is driving off the farmer lads,
But just the methods of their dads."

As an organized effort to face this problem of the country boy leaving for the city just as soon as he can break away from dad, Boys' Club work was instituted some five years ago under the Smith-Lever act. The work has proven immensely popular. Boys' clubs of all kinds from potatoes to pigs have been organized in the grammar schools and high schools all over the country, some under the supervision of district club leaders who are high school teachers employed part time for this work, and others under county club leaders working out from the office of the county farm adviser.

Los Angeles County is one of the few counties in California fortunate in having a county club leader in the person of Assistant Farm Advisor W. G. Waterhouse. Mr. Waterhouse has been in the field only a little over six months but in that time has organized and directed the efforts of nearly 20 boys' clubs in this county.

Club work is really nothing more than commercial farming on a small scale under the supervision of a trained man. The main object of the club project is to make money, and to be successful in club work a boy must make a good profit. The boys are required to keep accurate records of all expenditures for materials and to keep track of the time they put in, charging current rates for it. To be successful a club project must show a profit on the right side of the ledger after all proper charges against the business have been made. At the end of the contest each boy is asked to write a short story of his experiences, a number of which are reproduced here. In Los Angeles County the pig club has proven very popular and the boys have raised some excellent individuals. Once shown that there is money to be made in farming and that the country is a desirable place to live, there can be little doubt but that more of our country boys will plan on following the profession of farming.

* * *

I was discouraged with my pigs at first because they did not eat as much as I thought they should. They seemed content and well but they would eat a little and then curl up in the straw and go to sleep. I would sometimes have to waken them to get them to eat. But perhaps it is as natural for little pigs to sleep as it is for pups. They got over this drowsiness before long and it soon became a problem to keep them in feed. I fed them twice a day and at noon gave them a bath by throwing several buckets of water on them. They seemed to enjoy this a great deal and would run and lie down in the trough whenever they saw me coming with a bucket. In the mornings and evenings they would stand with their front feet up on the tops of the fence and squeal for their feed. In selecting a pig to raise I would advise selecting a prettily marked or well shaped pig. Mine had the Hampshire markings and they sure were pretty pigs. They seemed quite content with their pen and were exceptionally clean and practically odorless.

In feeding them I tried to make their meals as tempting and agreeable as possible. I know I get tired of one kind of grub so why shouldn't a pig get tired of beans, beans, beans. So with the idea of getting them to enjoy their feed and consequently eat more I varied their rations as much as possible and gave them plenty of green feed. On the whole, I am very well satisfied with my undertaking. I and my pigs have grown to be great friends. They love to have me rub and scratch them and I enjoy playing with them and sometimes teasing them a bit. I also enjoy showing them to my friends. And they bid fair to bring me a good profit for time and money invested and a great deal of satisfaction and pleasure in caring for them.—George M. Schwn, Jr., age 19, Puente.

* * *

I am a member of the pig contest. I joined it because I thought I might make some money. One day when I came home from school I found a little black pig in the pen. My mother got it for me while I was at school. I named him Rastus because he is black. I got a Poland-China because I like that kind of a pig. I think green feed is good for a pig because it carries the substances that make bone and muscle. My pig did not drink very much water but he liked to lie in water. When I got my pig I weighed him on some 50-pound scales. I put him in a barley sack to weigh him. I feed him three times a day. I feed him bran and slop in the morning and night, water and green feed at noon. I spend my time feeding and cleaning out his pen. I made a pet out of him. Mr. Waterhouse came and told me how to take care of my pig. I have never had the opportunity to attend the pig show or a prize contest. Well-bred pigs are much better than scrubs because the scrubs don't grow so fast. I am planning on winning first prize next year. I think that if you keep the pig's pen clean he will try to help to keep it clean also. And you don't want to feed your pig too much or not enough. A boy that takes care of his pig and keeps up-to-date in his work is the kind of a boy that makes a good pig club member.—Delbert Johnson, age 13, Whittier.

* * *

Mr. Waterhouse gave a talk on pig clubs at school so I joined and got a pig. We looked at several but thought this was best. As I could not let my pig run on pasture I cut green alfalfa and pig weed for him. My pig did not drink much water. My scales would not weigh over 50 pounds so I used a strap around the pig and the scales till it go so big the scales would not weigh it any longer. I fed my pig three times a day. I fed him corn,

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Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five gaited saddle stallion, winner in many prominent shows.

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We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin
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The Leading
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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

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Elephant Grass
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by simple method of sugar cane propagation. 1000 joints, $25. 500 joints, $15. 100 joints at $5, smallest order filled.

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Cattle Ranges

ARE YOU INTERESTED?

In knowing facts about Central British Columbia Cattle Ranges and mixed farming, improved and non-improved, large and small? Write your requirements, resources.

J. H. BROWNLEE, Canadian Land Surveyor,
Peoples Savings Bank Bldg.
Phone Main 2935J. Sacramento

shorts, alfalfa, barley and milk and what waste I could find. I also carried water for my pig to lie in during the hottest part of the day. I spent my time feeding my pig, cleaning the pen, carrying water and putting a mixture on to kill lice. Also my pig was a fairly good pet. I selected this breed because I liked it best and had read about it.

Mr. Waterhouse told me how to care for my pig and told me how to keep my records. I did not go to a fair, but Mr. Waterhouse took up to a nearby ranch and we saw some prize winning show pigs. They were Duroc-Jerseys. We also saw the method of taking care of pigs. Well bred pigs are better than scrubs for results. Scrubs are often sick and do not grow as fast. If I can I should like to join a contest next year. But I would rather have the contest longer. I have learned that pigs need all they want to eat and drink, lots of exercise, a clean pan, good care and they have to be watched for lice. In hot weather they should have a place to wallow but water should not be poured on them. They also need a variety of feed and a warm place for cool nights, and a pig if posible should have a pasture to run on. If this cau not be had, then green stuff should be got for them. A pig club member ought to know something about a pig to begin with and he should be willing to take care of them and take care of his records and read the papers sent out by the government to him.—Waldo Smith, Pomona, age 14.

* * *

I am a pig club member because Mr. Waterhouse came around to school and started a club. I bought my pigs with money from raising potatoes. I named my pigs Betty and Jack because they were supposed to be named. I selected the Duroc and Hampshire breed because I thought they were good. Pastures and green feed are good because green feed furnished some protein, which is necessary. My pigs drink considerable water. When my pigs were small I weighed them in a sack but later had to use a crate. I fed my pigs in a trough, a self feeder would be better. I fed my pigs three times a day. I fed my pigs shorts, wheat middlings, tankage, skim milk and rolled barley. I spent my time with my pigs feeding them and cleaning the pens. My pigs didn't become pets. Mr. Waterhouse visited me and told me how to care for my pigs. Pure bred pigs are better than scrubs because they have been bred and selected to consume more feed and put on the gain in the part most valuable to the butcher. They will also gain faster. Pure bred hogs are much more valuable than grade hogs. I am planning to join the pig club next term because it is a very good thing. I have learned lots about pigs, the club having visited some of the large hog ranches we learned their methods of hog raising. I have also learned considerable from the circulars and bulletins. A boy that takes interest in his pigs makes the best pig club member.—Chester Irish, Norwalk, age 15.

* * *

One day when I was at school I heard about the pig club. So I thought I would join because it would be a good way of making some money and also learn how to raise a pig. I found a place where I could get a good pig very reasonable so I got it. It was a Hampshire and I like that kind very much. It was a pure bred hog so I got it registered because if I keep it for a brood sow I can sell the little pigs better. Being in a fattening contest I though I would get a large formed hog as it would put on fat better than a small one. When you are making the size of the pig one good thing to feed is green alfalfa. When I got my pig I could not come close to the pen without it would run to the other side. But now when I come to the pen it will come right up to where I am standing. When you are buying a pig it is better to get a pure bred than a scrub because you can sell them better. I have learned lots about raising pigs since I entered the contest and hope they have another soon.—Harold Comber, Burbank, age 14.

RATION FOR DAIRY CALVES

On farms selling whole milk it may be found advantageous to raise the calves for the dairy herd on calf meal instead of whole milk. The meal or gruel is added to the ration in increasing amounts beginning when the calf is two weeks old. A feeding plan which will work out fairly well with calves of average size is presented in Station Circular 88 of the University of Missouri college of agriculture. The feeds used are whole milk, calf meal, grain and hay. Calves receive whole milk until they are two weeks old. For the next week the quantity of milk is reduced and a pound of gruel added. In the foruth week the calves receive nine pounds of milk, three pounds of gruel, a little grain and some coarse hay or alfalfa. From thirty days to six weeks the ration consists of six pounds each of milk and gruel together with a little grain and hay. The milk is then discontinued and the calves receive 12 pounds of gruel, a half pound of grain and a small amount of alfalfa hay. At two months of age the calves are getting 14 pounds of gruel, one pound of grain and have free access to alfalfa hay. The gruel is discontinued after the fourth month, and the grain is gradually increased until by six months the calves are getting four and one-half pounds of grain and all the alfalfa hay they will eat.

Gruel feeding may be continued after the fourth month if desirable or it may be discontinued at three months of age and the calf be put on a hay and grain ration.

Remember that calves will probably be less fat and smooth when fed on calf meals than when fed on milk. However, they should be of practically the same size and in a good thrifty condition. Milk is preferable as a feed and at equal costs should be given in preference to substitutes. The use of calf meal is valuable only when the selling price of milk makes the use of milk prohibitive.

All of the precautions to be followed in feeding whole or skim-milk must be observed when using calf meals.

Do not overfeed.

Give feed in a clean, wholesome condition.

Have all utensils scrupulously clean.

Feed regularly and in small quantities.

Always feed at a temperature of 95 to 100 degrees Fahrenheit. Use a thermometer—do not use your finger.

Give the calf water to drink.

Be regular in everything.

Give the calves exercise in the open air during good weather, but do not expose them during cold, rainy weather.

Provide clean, well-lighted pens with plenty of bedding.

Whenever possible give each calf a separate pen and limit the feed of each animal. If a separate pen is not possible, stanchions must be used. Especially is this true when raising calves without skimmilk.

GET THE SILO READY BEFORE FILLING

The silo should be inspected thoroughly before filling is started for openings in the walls where air might enter and spoil the stored crop and for rough places which might prevent the proper settling of the corn. The hoops on stave silos should be tightened sufficiently to close all cracks but they should not be tight enough to buckle the staves. The staves will absorb some moisture from the silage; consequently, the hoops should be released somewhat a few days after the silo has been filled to prevent the swelling staves from buckling and from breaking the hoops. The walls of masonry silos should be inspected for cracks, sand pockets and rough places. Some owners give the inside surface a thin coating of rich cement with a whitewash brush. This is not necessary unless the surface of the wall has become roughened. Metal silos frequently need fresh applications of specially prepared paints to prevent corroding.

A careful inspection of the cutter machinery and corn binder previous to starting work is also recommended by the University of Missouri college of agriculture, in order to save unnecessary stops and repair bills. Have the machinery all in good running order and provide enough teams and wagons to keep the cutter running steadily. Ten or twelve men idle at one time rapidly increases the cost of silo filling.

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on pig sired by

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the sire of all Champion Berkshire Barrows shown this year—himself a Grand Champion

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ROOKWOOD LADY 100TH
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will increase pork production approximately five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price. Do you know of any other feed at any price that will do this?

Why not get all the profits out of your hogs?

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All bred or raised on ranch except three.

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Winsor Ranch R. K. Walker, Mgr. Bonita, Calif.

Wakeen Herd

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You will never have seen the best until you read the 100 pages of our big illustrated Catalog, just out, of unequaled money-making farm bargains in the most prosperous states from Maine to Florida and west to Nebraska. For example, on page 74,—80-acre Middle West producer, near R.R. town, good buildings, 2 horses, cows, hogs, machinery, crops, all for $4000, half cash. Page 12 details 170 acres, horses, 8 head registered stock, tools, crops, good buildings, silo, etc., for $3500. See picture page 10 attractive home on 60 acres, horses, cows, hogs, implements, furniture, $2000, easy terms. Full details page 33, of 345 acres, 75-cow dairy farm, milk checks running $500 per month, fine 10-room house, big basement barns, 4 horses, 33 head stock, machinery, crops, all for $7000, part cash. Write today for your free copy showing you the farm you want, where you want it, at the price you want to pay. STROUT FARM AGENCY, 831 A. G., New York Life Building, Kansas City.

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For Sale—Twenty Acres Alfalfa, 26 fine Holstein cows, 1 fine Holstein bull; good pumping plant; good 7-room house; two good cow barns. Fifty tons of alfalfa in the barn. Will sell reasonable. Address S. Stokes, Artesia, California. Phone 7105.

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For Sale—Relinquishments and deeded land, $5.00 to $35.00 per acre. Pumping 18 to 45 ft. lift. Good farming land. Further information write O. H. Bolt, Gila Bend, Arizona.

Dairyman that has large family of boys would like to lease dairy on shares stocked with cows; prefer place that has alfalfa or that can be planted. M. E. Avilla, Cloverdale, California.

For Sale—Finely equipped poultry farm at Atascadero, California. Write for particulars and terms. Bestrun Egg Farm, Atascadero, California.

For Sale—30 Acres Alfalfa.. Write me for descriptions, price, terms. L. E. Williams, R. D. No. 1, Box 10-B, Imperial, California.

Wanted to Lease Five or More Acres—must have plenty of water, also good house. Address: R. B. HALL, Venice.

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California.

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

GOVERNMENT LAND

800 Million Acres of "Free" land in U. S. "The New Homeseeker" a 104 page book WITH MAPS and ILLUSTRATIONS, showing millions of acres of vacant public homesteads, timber, mines or grazing lands. Founded on historical facts. DOES NOT MISLEAD. Read warnings "official," eliminates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico, Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico. Describes water, soil and climatic conditions, all the principal U. S. land laws. A marvelous publication, just off the press. Mailed anywhere, $2. Address "THE HOMESEEKER," Dpt. M, 3rd floor Grant Bldg., Los Angeles, California.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.
The Yellow Front. Established 1892
112-118 S. Los Angeles St. Los Angeles.

For Sale—Lauson tractor, Decring harvester thresher, Moline 3-14 in. tractor plow, John Deere double disc. Used one season. A-1 condition. C. L. Thornton, R. 1, Box 30, Tulare, California.

For Sale—Deering binder and four head of heavy young work horses, also one new double six foot disk, six foot double roller and corn planter. H. M. Chamberlain, Live Oak, California.

MUSICAL INSTRUMENTS

PIANOS—PLAYER PIANOS
Paige Piano Co. 1600 Clay Street, Oakland, California.

MACHINERY

Tanks, Tanks — 100 used redwood, iron tanks, no profiteering in these prices, which are same as before war: 200 gallons, oak cask, $4.75; 1000, $27.50; 1600, $35; 2000 redwood, $28; 3000, $33; 4000, 5000, $48; 6700, $58; 25,000, $125; 35,000, $185; bunch galvanized tanks, 100 to 3000 gal., make new galvanized tank, 22 gauge, 1000, $39; 2000, $52; go in car door. Cheap freight. Also 50 windmills, 25 pumps, 50 cylinders; ranch tools, surface irrigating pipe. DEMMITT CO., 120 N. Main, upstairs. Yards, 816 Yale, Los Angeles.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

CATTLE

AUCTION SALE
110 EXTRA HIGH GRADE HOLSTEINS
A complete dispersal of the Roeber Company herd on their farm, 4 miles north, 1½ miles west of Maxwell, Colusa County, California. Irrigation of nearby rice fields has raised the water level of the alfalfa fields, curtailing the crop to such an extent that this sale is necessary. One of the finest herds in California. High class Wisconsin cows and their daughters by one bull whose sire is out of a cow that made over 18,000 lbs. milk and over 776 lbs. butter in one year, and by one whose sire is a grandson of Tilly Alcartra out of a dam that made over 17,900 lbs. milk and over 702 lbs. butter in one year. One of the very best herd of grade Holsteins ever sold in northern California. Date of sale, Tuesday, September 23, beginning promptly at 10 a. m. Auctioneer, Col. Ben A. Rhoades, Los Angeles. Sales manager, C. L. Hughes, Sacramento.

AUCTION SALE

To make way for an enlarged herd of registered Holsteins, Brookhollow Ranch, Hollister, Calif., will disperse its entire herd of high grade Holsteins consisting of 135 cows and heifers. Private milk record of every cow will be announced at sale. About seventy-five per cent of heifers are granddaughters of Juliana King of Riverside. This is a very choice herd of grade Holsteins. Auctioneer: Col. Ben A. Rhoades, Los Angeles; Sales Manager, C. L. Hughes, Sacramento.

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

For Sale—Registered Holstein cows, grade Holstein heifers. Also horses and mules. G. U. Clark, Hanford, Cal.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

MISCELLANEOUS

Snowden's Soil Laboratory is removed to rooms 231-232 Douglas Building, across the street from old stand. Someone always there in business hours.

Real Homemade Tobacco—Lb. 68c, 5 lbs. $3.30, 10 lbs., 6.30, postpaid. Free flavoring with smoking tobacco. Write for particulars. Randolph Tobacco Co., Paducah, Kentucky.

Made of Redwood, Hawley's Perforated wooden felt casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Autometer—Reduces car expenses, troubles, accidents, improves mental, physical condition. $1.00 prepaid. Kautch, 122 Miner, Stockton.

Show Cards and Price Tickets—Prompt service. Reasonable prices. Sykes-Gray Co., 530 Pine Street, San Francisco.

Milch Goats and Orpington Chickens—Cash Nurseries, Sebastopol, California.

PHEASANTS

For Sale—Golden Pheasants in full plumage. E. Borchert, Garden Grove Road, Anaheim, California.

EDUCATIONAL

Young Man or Woman — Here's your chance. Learn to write Show Cards from a PRACTICAL CARD WRITER. Only field not overcrowded. We teach you in person or by MAIL. PRACTICAL SIGN WORKS, 530 Pine Street, San Francisco, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLUETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

HOGS

CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

GRAND NATIONAL CHAMPION
Baron Duke 201st, 200001
Do you realize this is the only opportunity you have ever had on this Coast to secure the pigs of a Grand National Champion? Duke is breeding them long and thick. He is getting old and may die any time. You are started right if you get his pigs. A very good April boar pig sired by Duke and from a half sister of Rincons Rival 2nd, cholera immune, $35.00. Sandercock Land Co., in charge of Natomas Sales, 23 Montgomery Street, San Francisco, California.

ORION MODEL
Sired by
ORION CHERRY KING, JR.
the $3,500 Boar,
is making his mark as a great breeder. He heads our herd of up-to-date Durocs. The most popular blood lines are represented in his pedigree—the kind that have laid the foundation for many prize winning herds. Choice spring boars for sale. If you are in the market for some outstanding boars, we have them. F. D. BURR Co., ORLAND, CALIFORNIA.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

Billiken Chester Whites: July offering none; August offering consists of 8 boars and 5 sow pigs, this spring farrow. All are now cholera immune. Will have a full exhibit at the State Fair this year and will show some good ones. Call around and look them over. I'll be there to do business. C. B. Cunningham, Mills, California.

Durocs—A few very fine gilts and boars five months old, about 175 pounds, Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Rancho Del Sur Durocs—A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet, California.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Falfadale Farm Durocs, Perris, California. Our $2000 boar, Great Orion Sensation, Jr., heads herd. Fifteen prospective litters by Giant Orion. Write B. H. Wilkinson, Mgr.

Duroc-Jerseys at Ireland, home of Cherry Volunteer II and Ireland's Joe Orion. Ranch at Owensmouth, California, City Office, 1219 Brockman Building, Los Angeles, California.

A Few Poland-China Boars ready for light service by King's Big Bone Leader and President. Priced right. Full particulars on request. John M. Bernstein, Hanford, California.

Duroc-Jerseys — We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

We Have 100 Young Gilts and Boars, bred in the purple, which we are selling for about half their value. Money back if not satisfied. Derryfield Farm, Capital National Bank Bldg., Sacramento.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson. Box 724 Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

A. R. Bardrick, breeder of Duroc-Jersey hogs. Stock for sale. Oceano, California.

El Profito 296867, a 900-lb. line bred Big Timm boar in service. Write, Viola L. Renwick, Santa Barbara, California.

The Pacific Herd of Big Type Polands, King Hadley & Chief. Price breeding, Mrs. C. H. Andrews, Modesto.

Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet, California.

HOGS

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

POULTRY

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
The male is half the flock, therefore he should be of the best breeding. We are offering 500 breeding cockerels; 350 from 200 egg hens or better, the other 150 the pick of all our regular pens. Prices range from $5.00 each and up. Discount on large quantities. Shipment to be made October 1st. No fall chix for sale. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trap nested S. C. White Leghorns every day in the year since 1912. Box B-337, Inglewood, California.

Fall Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heavylest laying (Hoganized) stock. Price during August: 25, $4.00; 50, $8.00; 100, $14.00. Price during September: 25, $4.50; 50, $8.50; 100, $15.00. Special prices 500 and 1000 lots. Safe delivery guaranteed; you pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in world. Established 1898. MUST HATCH INCUBATOR COMPANY. 438 Seventh Street, Petaluma, California.

Baby Chicks From My Carefully Selected, thoroughbred flock of S. C. White Leghorns. I am booking orders now for a limited number of first class chicks August and September delivery at $15.00 per 100. Make your arrangements early. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Petaluma Hatchery — Established 1902. Can ship day old chicks to points reached in three days. Four varieties. Why not have the best? Free fall circular. L. W. Clark, Petaluma, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

For Sale—S. C. White Leghorn chicks, $12.00 per hundred. Book now for September. We ship by express C. O. D. Welty's Hatchery, Petaluma, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

Baby Chicks—Order fall chicks now from our large heavy laying S. C. White Leghorns. Tupman Poultry Farm, Ceres, California Box 7 "C."

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead California.

For Sale — Silver Campine Cockerels — also eggs for setting. Roy Ward, Lindsay, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Send Your Order for Rock Red or Leghorn chicks to MADERA HATCHERY, Madera, California.

SEEDS AND PLANTS

For Sale—500,000 Early Winningstadt Cabbage plants, 40c per 100, $3.00 per 1000; by mail, 60c per 100. Take Vernon Avenue car and get off on corner of Vernon Avenue and Hawthorne Street and walk one block south. Mail address J. M. CHACON, corner Hawthorne and Audrey Streets, Los Angeles, California.

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also handpicked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Write for Circular and Prices of Seeds. Wanted Sudan, Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

For Sale—Everbearing Strawberry Plants—Progressive, $1.50 per hundred; Superb, $2.50 per hundred, postpaid. G. M. Hawley, La Mesa, California.

Wanted Seed Beans for fall planting. Address K. W., Seedman, Cultivator.

GOATS

Registered Angora Bucks from kids to 5 years of age. As good as the best. Thorne Ranch, Uno, El Dorado County, California.

SHEEP

For Sale—225 unshorn merino ewes—old but in good fair order. $6.00 per head. Address James G. Mee, St. Helena, California. Phone 60-F-1-1.

For Sale—225 unshorn merino ewes—old but in good fair order. Address: James G. Mee, St. Helena, California. Phone 60 F 1-1.

AUTOMOBILE SCHOOLS

Pacific Auto and Engineering School offers a practical course in auto and tractor tuition; day and night classes. 337 Golden Gate Avenue, San Francisco. Phone Market 1799.

WANTED

Want Responsible and Experienced fruit, alfalfa or grain irrigation farmers to work on crop share basis. Land is river bottom tule land, plenty of water, good living conditions and good markets. Will enter into one or two years contract with right men and might extend same into option of purchase. Party should have some implements, live stock or money with which to buy them. Please state age, farming experience, from whom you have rented, amount of livestock and implements you own, financial condition, and size and age of family. State when your services will be available and amount of land you can handle. Address Herman Janss, San Joaquin, Fresno County, California.

Wanted—Position as ranch manager or manager of dairy by thoroughly experienced man who has many years successful experience on California ranches. Speak and write, English, Spanish and Portuguese. Have managed 800 men. Married. Best reference. T. L. Thompson, 411 South Cummings Street, Los Angeles.

Ranch Superintendent desires to make a change; university man; 15 years' experience in management of properties devoted to livestock and dairying; can furnish any references desired; salary, shares or both. Box S. A., care Cultivator.

Wanted — Management of farm by Californian, thoroughly familiar with fruit, alfalfa, grain and stock growing. An expert in irrigation. Address Lock Box 944, Fontana, San Bernardino County, California.

Wanted by married man, good dairy or alfalfa ranch in Marin or Sonoma Counties, on shares or would take position as foreman. Address R. 5, Box 131, Petaluma, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Wanted to Buy Second Hand hog wire, 34 or 36 in. high in good shape for to fence 20 acres. W. J. McCardia, Blythe, California.

Agents Wanted — Sell Automobile Tires and tubes on liberal commission. Address Arnott & Co., Dept. 10, Los Angeles.

Wanted—Position as foreman on ranch. J. R. Dickson, R. R. No. 2, Highland, California.

Bees Wanted—In boxes or patent hives, also equipment. Address E. C. Rothchild, Rutherford, California.

RABBITS

Fur Bearing Rabbits—You can raise real furs at no cost, as the meat pays the cost of producing the furs. Have six beautiful types, including long fur Black, long fur Black and White, long fur White, long fur Himalaya, short fur Himalaya (ermine) and French Silvers (gray squirrel color). Write for particulars. R. E. Lancaster, Federal Realty Bldg., Oakland.

For Sale—You will be satisfied with my high grade New Zealand Reds. Pedigree and Utility Stock at reasonable prices. F. R. Caldwell, Broodmoor, San Leandro, California.

Money in Rabbits—We are having a special sale of very fine bucks and does at reduced prices. Write us for particulars. H. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger Watsonville California

FERTILIZER

For Sale—Chicken manure in carloads. Cheapest and best fertilizer. MacDonald Sons Phone 101 Watsonville

The New 16 Valve

Twin City Tractor

Pays Big Dividends

For the first time in the history of the tractor industry, the 4 cylinder, 16 valve engine (valve in head type) is now applied to a tractor. The TWIN CITY 12-20 with its 16 valve motor actually develops 25 per cent more than its rated horsepower.

This new 12-20 is a light weight tractor that will out-pull, out-last and out-dividend other tractors of equal rating.

Not built down to a price, but built up to a fixed ideal—to do the work assigned to it better than it has ever been done before.

The highest grade tractor will unfailingly prove the least expensive and pay the biggest dividends.

Frank O. Renstrom Co. DISTRIBUTORS

Van Ness at Golden Gate
San Francisco, Cal.

Los Angeles Stockton

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Life of Blackberries

How long will blackberries bear successfully? — Subscriber, Owensmouth.

With good care a blackberry should produce well for about eight years—J. W. M.

Mealybug on Grapes

How can a person make grapes affected with mealybug marketable? Also, what can we do to check the pest for next season?—Subscriber, Stockton.

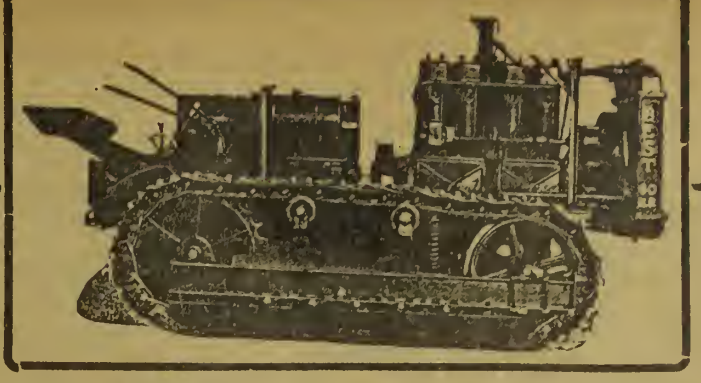
There seems to be no way to save this crop now affected with the mealybug, that is, to save it as a first class article. In drying raisins the pest seeks the lower side of the grapes where it still is in the shade and continues to grow and multiply during the ten days until the time comes to turn the grapes over. It exudes its "honeydew" which affords a medium for the growth of fungus and even causes a portion of the decay of large fine bunches. The only way to save the table grape is to clip off the affected portions, and in badly affected vines this means that practically every bunch and sometimes the entire bunch is spoiled. To prevent an attack another year, fumigate. As to methods, these will be given later, together with methods of spraying by the department of agriculture for California. Prof. Nougaret, who has just become connected with the department, is taking up this particular question, as are others both with the department and with the university. Treatment should be after the dormant period. When the leaves have dropped tents may be thrown over the vines and a heavy charge of hydrocyanic acid will destroy the pest. Spraying is not effective with this particular pest because of the habit of the insect seeking hidden crevices under bark often out of the reach of sprays. As may be noted in "Honeydew Grapes" on page 300 of last week's issue, Director Hecke, of the state department, is calling a conference at the University Farm School, Davis, for the purpose of formulating quarantine regulations. He, with Prof. Nougaret, is giving attention to this pest.

Fence Law Muddle

The state laws touching upon fencing are explained by Mr. Stanton in the legal queries in the issue of the California Cultivator of July 19, page 63. However the fence situation is one involving many legal technicalities. There is a state law; besides that nearly every county in the state has its own fence law; and again many of the municipalities. It would be impossible to give a review of all of these or even to touch upon the great diversity of them. There should be a general clearing of the situation by consistent legislative action which would give protection to both fruit producer and live stock owner.

Wild Turkeys for Breeding

Replying to a subscriber who asked for name of some one who could get him wild turkeys for breeding, M. E. Bemis of Phoenix, Arizona, answers: "This will be a rather difficult proposition and one which would have to be handled through our game warden. I am referring your letter to the state game warden, Joe V. Prochaska, and feel sure if there is any chance to get hold of some wild turkeys for breeding purposes that he will put you in touch with the right parties. I think there are more wild turkeys in the White Mountain region than any other section and very likely Mr. Prochaska can refer you to some one in that section who will be able to trap them for you."



THE BEST EXHIBIT

AT THE TRACTOR SHOW

TWO NEW TRACK LAYER MODELS

TRACKLAYER

C. L. Best "60" Track Layer

Best "60" Tracklayer like the "25," the ultimate in tractor construction. Thirty-seven anti-friction Hyatt and Timken bearings. Weighs 17,500 pounds. Does the work of 35 horses. Will stay on the job as long as it is given reasonable care and attention. This tractor is scientifically lubricated; easy of access. Built like a draft horse throughout. Requires minimum attention.

C. L. Best "25" Track Layer

Best "25" Tracklayer. An anti-friction tractor driven by a heavy duty slow speed Best motor. Designed to meet the conditions under which this tractor must work. Built to last a lifetime with proper care and attention. Pulls its width in plows—runs on the land, not in the furrow.

See Them at the Demonstration or Write for Free Illustrated Booklet.

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Southern California Distributor
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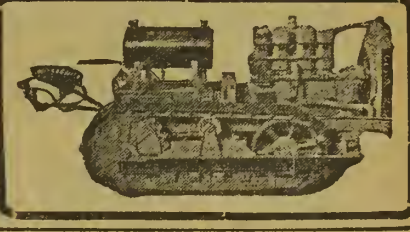


The Famous Hardie Junior is a Real Power Sprayer

It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight, and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Junior. Equipped with 1½ horsepower engine, battery ignition, 150-gallon tank with mechanical agitator, capacity of four gallons per minute with a steady working pressure of 200 pounds, and two 25-foot of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All for $315. ***Delivered anywhere in this state***

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

The HARDIE ORCHARD GUN is $12.00, none better. Every one is guaranteed to give satisfaction to the user, or his money refunded.

The Hardie Spray Hose is the safest hose to buy.

The Hardie Manufacturing Co.
224 N. Los Angeles St., Los Angeles

MOTORIZE and FERTILIZE

Best Results in Farming always
follow the most approved methods

Power farming aims to accomplish more work with less man power and time. The farmer who uses

Hauser's Organic Fertilizer

gives his crops the needed food enabling him to reap the full benefit of his industry through tractor farming.

Motorizing and Fertilizing are sure signs of intensive patriotic farming.

HAUSER PACKING CO.

Phone 10336, Bdw. 5600 9th and Mateo Sts.
LOS ANGELES

The Latest on Grape Syrup

By W. V. Cruess and Jean W. Christie

THE manufacture of grape syrup from wine grapes may yet prove to be the most practicable method of utilizing the crops from our wine grape vineyards when national prohibition becomos permanent. Compared with dried wine grapes, the only other product seriously considered by wine grape growers, grape syrup, has several advantages. It can be used for wine making much more readily than can raisins because no soaking, crushing and pressing are necessary. It is even superior to raisins for wine because it is possible to make a grape syrup with a full fresh grape flavor and intense red color: qualities difficult to attain in dried wine grapes. The syrup is excellent for high class sherbets or water ices and, finally, is well suited to soda fountain use in ice cream sodas, on ice cream specials and in fountain beverages.

Several methods of preparing grape syrups have been described in Bulletin 303 of the University of California experiment station, but the methods therein discussed have been very greatly improved upon as the result of experiments completed since its publication. A number of different types can be made, but only three will be discussed. Theso will be takcn up in order of their importance, the most desirable being considered first.

Red Syrup of High Flavoring

The flavor of grapes consists of a number of volatilo compounds which are lost from the juice or syrup during the ordinary process of evaporation. This loss occurs at any temperature used, even if tho juice is made into syrup by drying in the breeze, because these flavors are more volatile than the water which must be removed to rcduce a juice to syrup. For this reason all syrups made by the usual methods of evaporation aro deficient in flavor.

However, it has long been known that maple sap and other sugary liquids may be concentrated by allowing the liquid to freeze slowly. Pure water first separates in the form of ice crystals. When these crystals are removed the residual liquid is much enriched in sugar and flavor. Apparently, this process does not injure the flavor, which tends to concentrate in the unfrozen syrup rather than in the ice.

This process has been developed in Italy by Eudo Monti of Turin, who has invented several machines that carry on the process in a continuous manner. Juice flows into one part of the apparatus and syrup from another. One of his machines is described in U. S. Patent, 955,659—1910. Royalties must be paid if his particular machine is used. H. C. Gore of the United States department of agriculture in 1914 experimented with this process and obtainod a patent which has been donated to the public for use without royalty or charge of any kind. His process consists essentially of the following steps:

The juice is frozen to a solid mass at 10-20 degrees Fahrenheit. It is then broken in an ice crushing machine. The crushed ice is placed in an ordinary sugar centrifuge and the syrup separated from the ice by centrifugal force. The syrup is thrown through the small holes of the centrifuge basket and the ice remains in the centrifuge. The syrup so obtained is again frozen at 0-10 degrees Fahrenheit to a mushy mass of ice crystals and syrup. By centrifuging this mixture a syrup of 55 to 60 degrees Balling is obtained. A small amount (about 1 per cent) of sugar is lost in the ice. Gore's work was done upon apple juice.

The writers repeated Gore's experiments but used Muscat grape juice instead of apple juice. A syrup of 55 degrees Balling was as rich a syrup as it was found feasible to produce with the equipment used. The syrup was therefore not sweet enough for general use and would ferment quickly unless sterilized. Even a 60 degree Balling syrup is too "thin" and will not keep long. A 60 degree Balling syrup is the sweetest syrup recorded as having been produced by this process.

Therefore, it was found necessary to blend with this syrup obtained by freezing, a syrup of 70-75 degrees Balling made in an ordinary vacuum pan. The blend of 65 degrees Balling was very rich in flavor and far superior to any syrup that had previously come to the writers' attention. A syrup very much sweeter than 65 degrees Balling has been found to crytallize badly; therefore the syrup should not exceed 70 degrees Balling.

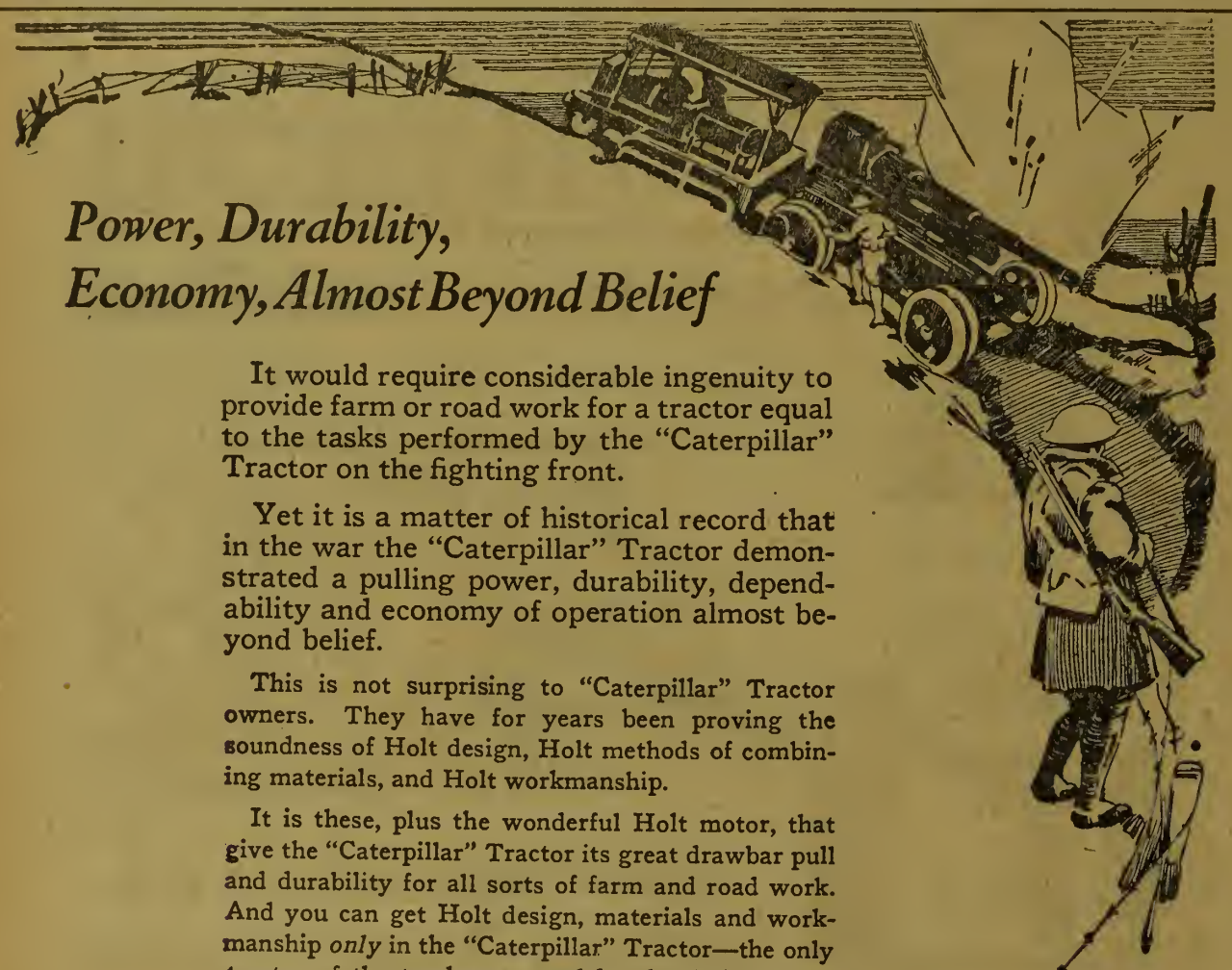
It was noted that the ice left in the centrifuge was sour in taste. When melted it was found to contain 75/100 of one per cent of cream of tartar and a similar amount of sugar.

On concentration of a sample of this liquid to a small volume most of the cream of tartar was recovered in a quite high state of purity. This suggests the possibility of obtaining cream of tartar as a valuable by-product.

In addition to flavor and a concentration of 65 degrees Balling, it is desirable that the syrup possess a red color. The color of most red grapes is located entirely in the skins and is insoluble in the cold juice. The juice must be heated in order that the color may be extracted. The most suitable method has been found, to consist of crushing and pressing the grapes: heating the juice to 130 degrees Fahrenheit, returning the hot juice to the skins and allowing juice and skins to stand eight to ten hours and pressing. Petite Sirah, Zinfandel Carignane and other red wine grapes give a juice of deep red color by this method. Alicante Bouschet grapes will, of course, produce a red juice without heating, but the Alicante's color has been found to be less permanent than that of other grapes. Only thoroughly ripe grapes should be used. The red juice obtained in this way should be heated to 160 degrees Fahrenheit and allowed to settle over night to cause coagulation of the proteins which would otherwise cause the syrup to become cloudy. The settled juice should then be filtered. It may then be concentrated in a vacuum pan to 70-75 degrees Balling. During concentration, use a vacuum of 25 inches or better, and do not leave juice in the pan longer than one and one-half hours. This syrup would then be blended in about equal proportions with the syrup obtained by freezing. The vacuum process syrup furnishes color and sugar and the syrup made by freezing furnishes flavor. The syrup tends to caramelize in the vacuum pan if heated too long: under no consideration should more than one and one-half hours be used for each charge. The shorter the period of heating the better the color and quality.

In heating grape juice, only tin lined, silver lined, glass lined or aluminum apparatus can be used. Copper and iron dissolve rapidly in the hot juice. A large Eastern manufacturing company has made cooperative tests with the authors and obtained excellent results in the concentration of grape juice in a glass lined vacuum pan. This material is commonly used in boiling down tomato products, fruit jams and other products in canneries. It consists of cast iron heavily enameled with a very resistant glass like coating, which is actually fused with tho iron. This ware is made in the form of kettles, tanks, vacuum pans, pipes, etc., and would be well adapted for uso in grape syrup manufacture.

The juice to be concentrated by freezing would not be heated upon the skins, because the long period at a high temperaturo upon the skins results in a great loss of flavor. The grapes would be crushed and pressed. The juice so obtained would be heated in a continuous wine pasteurizer to 160 degroes Fahrenheit, and cooled at once as is done in pasteurizing wine. The juice would then be allowed to settle to permit coagulated protein to separate. It would next be filtered. Tho filtered juice would be frozen slowly at 10-20 degrees Fahrenheit to preferably a heavy mixture of large



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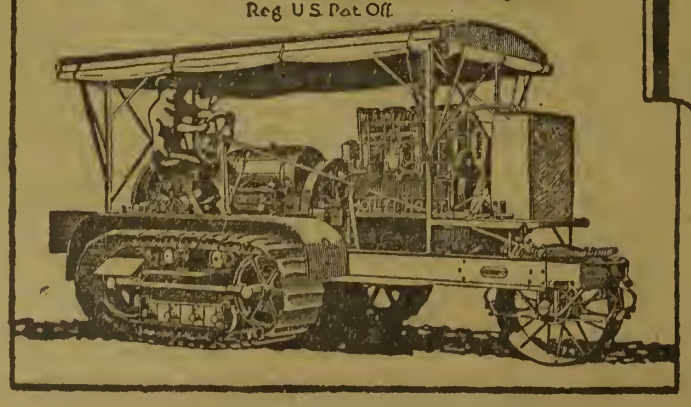

The Holt Manufacturing Co.
STOCKTON California
PEORIA Illinois
LOS ANGELES California
PORTLAND Oregon
SPOKANE Washington
SAN FRANCISCO California

ice crystals and syrup. The mixture would be whirled in an ordinary sugar house centrifuge and the syrup drawn off. The ice crystals in the centrifuge basket would be lightly washed with a spray of water to remove adhering syrup. The ice would be transferred to tanks; allowed to melt and the liquid would be boiled down to recover the cream of tartar. The light syrup from the centrifuge (about 40 degrees Balling) would again be frozen at 0-10 degrees Fahrenheit and again centrifuged to give a syrup of 55-60 degrees Balling. The ice would be treated as in the first centrifuging. The syrup of 55-60 degrees Balling would then be used to blend with the red syrup of 70-75 degrees Balling obtained by vacuum concentration.

The blend, which should be 65-67 degrees Balling, is then allowed to settle for three to four weeks in clean vats or tanks to permit separaration of excess cream of tartar. The settled syrup is then drawn off, strained or filtered, and is put in bottles or cans. The filled containers should then be sealed and placed in a pasteurizing tank which is next filled with cold water. The water is heated by steam coils slowly to 160 degrees Fahrenheit and kept at this temperature 30-35 minutes to destroy yeasts and molds which would in time cause fermentation or molding. After removal from the pasteurizer and cooling, the syrup is ready for marketing.

In order that a comprehensive view of the whole process may be had, the reader is referred to the following outline:

Red Syrup of Fresh Flavor

I.—Color Syrup by Vacuum Process: 1—Crush and press ripe red wine grapes. 2—Heat juice to 130 degrees Fahrenheit in glass lined, tin lined or aluminum pasteurizer or kettle. 3—Mix hot juice and skins in convenient vat and allow to stand 8-10 hours. 4—Press. 5—Heat to 160 degrees Fahrenheit and allow to cool and settle over night (12-15 hours). 6—Filter. 7—Transfer to vacuum pan and concentrate under vacuum of at least 25 inches to 170-75 degrees Balling. Do not leave liquid in pan longer than one and one-half hours from time juice enters pan. Blend with syrup from II.

II.—Flavor Syrup by Freezing Process. 1—Crush and press grapes of good flavor. Muscat grapes preferred. 2—Heat juice to 160 degrees Fahrenheit in wine pasteurizer and cool at once. 3—Allow to settle over night. 4—Filter. 5—Freeze at 10-20 degrees Fahrenheit until thick mass of syrup and ice crystals form. 6—Centrifuge in sugar house centrifuge. Rinse ice with a little water. Melt ice and recover cream of tartar by boiling down and cooling. 7—Freeze syrup at 0-10 degrees Fahrenheit to mass of crystals and syrup. 8—Centrifuge as in "6." Blend syrup so obtained with syrup from I. (by vacuum). Recover cream of tartar from ice as in "6."

III.—Blend of I. and II. 1—Mix thoroughly and allow to settle in clean tanks 3-4 weeks. 2—Draw off and strain. Recover cream of tartar from settling vats. 3—Bottle or can the syrup and seal containers. 4—Place in water and heat to 160 degrees Fahrenheit for 30 minutes. 5—Remove and allow to cool.

As previously stated, this syrup is deep red in color, of fresh grape flavor and of a pleasant acid taste. It is an excellent table syrup, soda fountain syrup and is much superior to dried wine grapes for wine making purposes. It has greater possibilities than any of the syrups described later.

The pomace (i. e., skins, seeds and stems) from the presses contains a large amount of sugar and cream of tartar. These values may be easily and simply recovered by leaching with water, followed by concentration to a syrup by one or both of the methods previously described. The leached pomace may be pressed and dried; the seeds separated from the dried skins by screening; and oil recovered from the seeds by crushing and pressing in seed oil presses. A ton of grapes will yield about 60 pounds of seeds and a ton of seeds about 200 pounds (about 30 gallons) of oil suitable for table use when properly refined. The pomace by-products should not be neglected.

Red Syrup of "Jelly" Flavor

A syrup of deep red color and very pleasing "blackberry jelly" like flavor has been made repeatedly from five gallon lots of juice of red wine grapes in our experimental vacuum pan at Berkeley. No freezing process is employed. We have found the secret of success with the vacuum pan to lie in keeping each "batch" of syrup in the pan as short a time as possible. Prolonged heating destroys the grape color and drives off the flavor.

Very briefly the process is as follows: a. Crush and press ripe red wine grapes and if posible add a small quantity, 10 to 25 per cent, of ripe Muscat grapes. b. Heat to 130 degrees Fahrenheit and return to skins for 8-10 hours to extract color. c. Press. d. Heat to 160 degrees Fahrenheit and allow to cool and settle overnight. e. Filter. f. Concentrate in tin lined, glass lined or aluminum vacuum pan at 25 inches vacuum or better to 65-67 degrees Balling. Do not allow syrup or juice to remain in pan longer than one and one-half hours for each run. g. Allow to settle 3-4 weeks. h. Draw off syrup and bottle or can. Cream of tartar may be recovered from the tanks after settling of syrup. i. Pasteurize in water at 160 degrees Fahrenheit for 30-35 minutes.

Or the syrup may be heated in a suitable continuous pasteurizer to 170-175 degrees Fahrenheit and filled into cans hot and sealed at once. If to be used for wine making, it may be concentrated to 72 degrees Balling and filled into barrels, cans or bottles without pasteurizing.

This syrup is a very good table syrup and can be used to replace either jelly or syrup. It has been fermented in a small way after dilution with water and found to give excellent results. It can be made more cheaply than syrup No. 1, made by combined freezing and vacuum and its manufacture requires less outlay for equipment. It is undoubtedly the most practical syrup, the manufacture of which would be undertaken by the average wine maker.

White Table Syrup of Fresh Flavor and Low Acid

This syrup has been made in the laboratory, using five gallon lots of Muscat juice concentrated by the freezing process to blend with a white syrup of low acid made by the vacuum process. The finished blend is light amber in color; of a slightly more acid taste than the usual table syrup and with a full rich Muscat flavor.

To produce the neutral syrup, the following steps were carried out. Ordinary white wine grapes (Burger chiefly) were crushed and presesd. The juice was clarified by heating and filtering as previously described for red juice. The acidity was determined by titration by the method used in all laboratories in the analysis of fruit juices. Enough precipitated chalk (calcium carbonate) was added to reduce the acidity of the juice to between .15 and .20 per cent acid calculated as tartaric acid. The juice was heated to about 165 degrees Fahrenheit to cause reaction between the chalk and fruit acid to take place. The juice was cooled over night and filtered to remove the calcium tartrate, which settled to the bottom of the containers. The filtered juice was then concentrated in vacuo to a moderately heavy syrup and blended with the syrup obtained by freezing. It was found that 25 per cent of the syrup made by freezing (that is, 1 to 3) was sufficient to give the desired flavor. Some cream of tartar and calcium tartrate separate from the blended syrups on standing. The blended syrup should, therefore, be allowed to stand three or four weeks before canning and pasteurizing in the way described for other syrups. It should be filtered before canning.

Cream of tartar and calcium tartrate are recovered as valuable by-products.

It was found that syrup neutralized with chalk as described above contains .34 per cent lime, which is considerably more than that contained in syrup not so treated. The precipitation of calcium tartrate enriches the syrup in soluble potash salts, chiefly potassium tartrate, but not to such an extent that the flavor of the syrup is affected.

The syrup produced by this method is superior in flavor to the syrups dis-

Continued on Page 365.

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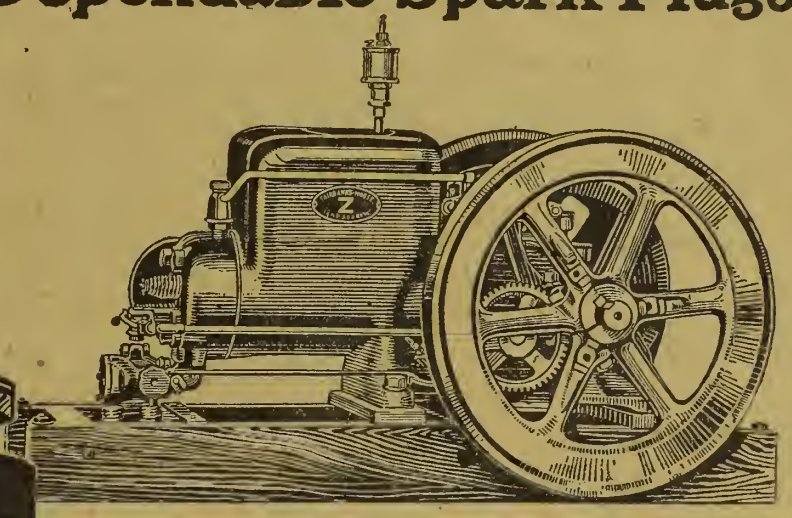

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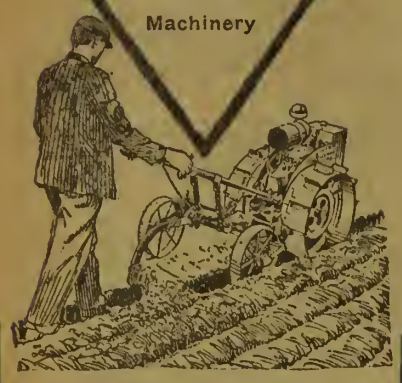

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Los Angeles Markets

Los Angeles, September 10, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 62 lb.; prices to retail merchants in 1-lb. squares, 62@63.

Dairy Exchange prices last week on extras:

Sept.	4	5	6	8	9
'19	..	59	61	61	62

CHEESE

Brokers' prices:
California fresh, lb., 34; price to retail merchants, 35@36.

EGGS

Fresh extras, Produce Exchange closing price 61 dozen, price to retail merchants 65 dozen; case count, Produce Exchange closing price, 57 dozen; price to retail merchants, 61 dozen; pullets, Produce Exchange closing price, 52; dozen; price to retail merchants 49; pewee pullets, 33.

Dairy Exchange prires last week on extras:

Sept.	4	5	6	8	9
'19	..	59	59	61	61

POULTRY

Prices to producers: Hens, lt., 26½; heavy, 33; colored over 4 lbs., 36; broilers, 29@30; fryers, 29; roasters, 33; old roosters, 10; capons, 42; ducks, old, 23; ducklings, 24; geese, 25; turkeys, 34@40; squabs, 45.

Belgian hares, live, 15.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 17.00; 150 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.00; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 8, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market unsettled. New stock, Stockton Burbanks, resorted, 2.85@3.00; others, best, 2.50@2.75; poorer, 2.00@2.25. Homegrown, White Rose, 1.00@1.15 per lug box.

Sweets, lb., 3@4.

Onions: Demand and movement moderate. Homegrown and Stockton White Globes 90@1.00 per lug box; 2.50@2.75 per cwt. Yellow varieties 2.50@2.75 cwt.; lug boxes 85@1.00; Australian Brown, 2.75@3.00.

Garlic: Local, per sack lots, 30@35; bulk, 35@40 lb.

VEGETABLES

These are the actual prices obtained September 8, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 3½@4; Limas, 4@4½.

Carrots, doz., 30@35.

Cucumbers: Local lug, 25@35; pickles, 1.00@1.50.

Celery: Local, best, 1.00@1.25 dozen bunches; poorer, 75@1.00; crates, best, 3.50@4.00; poorer, 3.00@3.50.

Corn: Roasting ears, 45@55 per lug of 3 dozen.

Eggplant, best, lb., 2@2½.

Peppers: Bell, lug, 30@35; Chili, 30@35.

Peas: Local, lb., 8@9.

Tomatoes: Lug, ripe, 40@50; shipping 50@60.

Turnips, doz., 35@40.

FRUITS

These are the actual prices obtained September 8, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California Gravensteins, packed, 2.25@2.50; Skinner Seedlings, packed, 2.40@2.75; crab apples, per lug box, 2.25@2.50; Jonathans, bulk, 6@7 lb., packed, 3.00@3.25; Bellefleurs, packed, 2.00@2.25; King Davids, packed, 3.25@3.40; R. I. Greenings, 2.00@2.10.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews 60@75. Paul Rose, 60@85. Various varieties, cabbage crates, 2.50@3.50.

Nectarines, lb., best, 4@6.

Peaches: Demand and movemcnt moderate. Local: Various varieties, bulk, 5@6 lb., lug, 1.35@2.00.

Pears: Northern Bartletts, No. 1, 7@7½ lb.; No. 2, 5@6 lb.; lug boxes, 1.75@2.00; packed, 3.25@3.50.

Pineapples, lb., 12@13.

Plums: Demand and movement slow. Satsumas, 6@7 lb.; Grand Dukes, 6@7 lb.

Watermelons: Demand and movement slow, quality and condition generally good. Local Chileans and Klondikes, large 1½ lb., medium 1, small ½ lb.

Lemons: Fancy packed, 5.75@6.25; local pack, 4.00@4.50; loose, some tree ripe, 3.00@3.75.

Oranges: Valencias, medium fancy, 4.75@5.25; local pack, 2.50@3.50.

Grapefruit: Local fancy, 4.00@5.00 bx.; poorer, 2.50 up.

HONEY

Demand and movement good, good inquiry, market firm. Carloads f. o. b. usual terms: White Orange Blossom, mostly 20; White Sage 20; Extra Light Amber Sage 18½@19; Light Amber Sage 17½; Light Amber Alfalfa, 15@16 lb. Beeswax: l. c. l. sales, mostly 40 lb.

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	19.00@20.00
Barley	16.00@21.00
Alfalfa	18.00@22.00
Wheat or Barley straw	9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, August 26:
Egyptian Corn, 3.00.
Eastern Kafir, 2.80.
Oats Red, 2.70; Yellow, 3.50.
Feterita, 3.00.
Wheat, 4.55@4.65.

San Francisco Markets

San Francisco, September 9, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	63½
Firsts	Nominal

Prices extras last week and year ago:

Sept.	3	4	5	6	8
'19	59	61	61½	62	63½
'18	53½	53½	54½	..	..

Rcts. wk. ending September 8, 2180 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	34½
Cal. Y. A. fy.	38
Ore. Triplets	31½
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	68
Firsts	Nominal
Extra Pullets	57½

Prices extras last week and year ago:

Sept.	3	4	5	6	8
'19	66½	66	65½	66	68
'18	63	64	63½	..	..

Rcts. wk. ending September 8, 315,778 dozen.

POULTRY

Hens, W. Leghorns, 28@32; colored, 35@36; roosters, young 35@36; old, 19@21; broilers, 30@34; fryers, 33@34; squabs, 2.50@4.00 dozen; ducks, 25@27; geese, 23@25; broiler turkeys, 40@47.

Belgian hares, live, 15@16; Jackrabbits, 1.50@3.00 doz.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7½; common to thin, 4@5½.

Calves: Light weight, 12½@13½; medium, 12@12½; heavy, 10½@11½.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 8½@9; ewes, 6½@7.

Hogs—Hard, grain-fed, 100 to 250 lbs., 16½, do, 250 to 300 lbs., 16; do, 300 to 400, 15.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle—Good grass steers, 1000 to 1200 lbs., 10@12½; medium to good grass steers, 950 and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs—Top packer hogs, hard and well finished; 175 to 250 lbs., 16½; 150 to 175 lbs., 16; 250 to 300 lbs., 16; over 300 pounds, 16; under 150 lbs., 16. Usual dock and price discount for other weights and kinds.

POTATOES

Potatoes: Per 100 lbs.: River, choice 1.85@2.00; fancy 2.00@2.40; sweet, lb., 5@5½.

ONIONS

Onions: Onions, fancy, 2.00@2.15; choice, 1.85@2.00; Garlic, 20@21.

VEGETABLES

Wholesale selling price:

Beans: String, 3@3½; Blue Lake, 4½@4¾; Wax, 3@3½; Pole, 2¾@4; Limas, 4@6½; Italian, 3@4½.

Cabbage, doz., 40@55.

Celery, doz., 20@25.

Cucumbers: Large box, 60@75. Pickling, lb. 6.

Corn, doz., 10@20; sack 1.25@1.75.

Eggplant, southern, fy., 50@65.

Lettuce, doz., 25@35.

Peppers, Bell, lb., 75@1.00; Chili, 7@11; Wax, bx. 33.

Peas, lb., 6@7½.

Radish, 7@9 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.25@1.50.

Spinach, 75@1.25.

Tomatoes: Sacramento River, 50@1.00; Bay, 50@90.

Squash: Summer, cr., 50@65; Italian, 50@75 bx.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 6.50@7.00; choice, 5.50@6.00; standards, 4.00@4.50; lemonettes, 4.00@4.50; grapefruit, fancy, 3.00@5.00; choice, 3.00@4.00; oranges, 4.00@4.50.

FRESH FRUITS

Wholesale selling price:

Apples: New crab, 1.20@1.50 for 20-lb. box; Gravensteins, 2.50@3.00 bx.; ch. 1.75@2.25; Alexanders, 1.75@2.25 bx.; Grecnings, 1.75@2.25; Fall Pippins, 2.00@2.25.

Bananas, 7@8.

Blackberries: So. 8.00@9.00.

Cantaloupes: Per crate, 50@1.25; pony crate, 35@60; flats, 25@35; Honey Dew Figs, double layer: 1.50@2.00 bx.; Brunswick, 75@1.00, single layer.

Grapes: Thompson seedless, 75@1.25 per box; Malaga, 75@1.25, Los Angeles lug; Fontainbleau, 75@1.00 per crate; Rose Peru, 75@1.00.

Why:::::::

Norwalk Tires
wear longer

1. Non-skid covers 80 per cent of the tires wearing surface.

2. The rubber by actual test is tougher than any other.

3. 529 rubber rivets to each square inch of fabric.

4. Norwalk deckle splice prevents air pockets.

5. Hand-made construction.

FACTORY DISTRIBUTORS
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Los Angeles, San Francisco, Fresno

Sulphur

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards, the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100 per cent pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

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Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc.

And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 DEGREES BE., Sulphur Paste, Nicotine, Blackleaf 40, etc. Fungicides and Insecticides.

Carried in stock and mixed to order.

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624 California St. San Francisco, Calif.

We are equipped to make immediate shipments. Send for "ILLUSTRATED BOOKLET," also booklet "NEW USES FOR SULPHUR", Price-list, and Samples.

Please state for what purpose you use the sulphur, quantity needed, and date of shipment preferred. Telephone Kearny 871.

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Preventive and curative of colds, roup, canker, swelled head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Gallen, Mich., says: "Have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Vickerman, Rockdale, N. Y., says: "Have used Germozone 12 years; the best for bowel troubles I ever found." Frank Siuka, Chicago, Ill., writes: "I have lost but 1 pigeon and no chickens in the 3 yrs. I have been using Germozone." C. O. Petrein, Moline, Ill.: "I never had a sick chick all last season." Bernard Hornfng, Kirksville, Mo., says: "Cured my puniest chicks this spring." Ralph Wurst, Erie, Pa., says: "Not a case of white diarrhoea in 3 yrs. I raise over a thousand a year." Good also for rabbits, birds, pet stock.

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The grower who has looked on and waited to see what was going to happen to the other fellow—spending the while twice as much in his unsuccessful efforts to clean his own trees—has awakened to the fact that for years he has been passing up "inverted commerce"; that for years he has been passing up the best friend the citrus grower has ever had in his many years of fighting the pests that infest his trees.

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The Tizit Spray Mfg. Co.

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Exchange members may be supplied through the Fruit Growers Supply Co.

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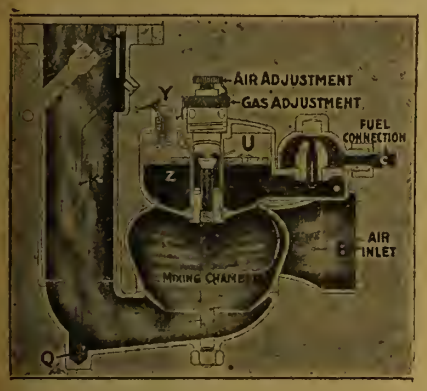

Less gallons per hour
More acres per day. Any fuel

Used on the following tractors at the demonstration:

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Ensign Carburetor Co.

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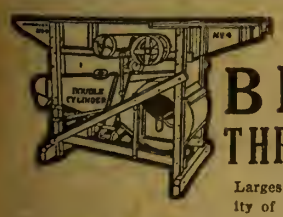

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Largest cleaning capacity of any thresher made and requires less help to operate. Pays for itself in one season. Hardwood construction throughout. Won't split the seed. Double cylinder. Made in six sizes—largest to smallest. WRITE FOR CATALOG.

California Implement Co.

122-124 N. Los Angeles St. - Los Angeles

ENERGE-DECARBO

The greatest Gasoline and Distillate Tonic removes and prevents carbon, gives 25 per cent more power and miles per gallon. Chemist tests show it to be harmless to anything but carbon. Send for circular.

Conservation Products Co.
719 Garfield Ave., Pasadena, Calif.
(Sale and use of this gasoline saver is unlawful in Los Angeles city.)

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Huckleberries, lb., 17@17½.
Loganberries, ch., 8.00@12.00.
Nectarines. red and white., cr., 1.00@1.25; bx., 1.25@1.50.
Peaches: Sacramento, 85@1.25 per crate; 1.25@2.00 per box; clings, 75@1.50 per box; Alberta, 1.00@2.00, according to quality.
Pears: No. 1, 3.00; No. 2, 1.00@2.00.
Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00 @1.25.
Prunes: Fancy American blues, 2.50@3.00; choice, 1.00@1.80; according to size and weight.
Pineapples, doz., 2.00@5.00.
Quinces, bx., 1.00@1.50.
Raspberries: Ch., 15.00@18.00.
Strawberries: Ch., 11.00@13.00.
Watermelons, lb., 1@1¼.

HONEY

Demand improving slightly, market firm. Prices paid to producers: Extracted Light Amber Alfalfa, 14@15½; Light Amber Sage, 18½@19½; White Alfalfa, 18@18½; Light Amber Sage, 16½@19½; White Alfalfa Sage, 18@20½; Orange, 18@20.

GRAIN AND FEEDS

Oats: Red feed, 2.85@2.95; black, 3.00 @3.10 per cental.
Corn: California yellow, 3.65@3.75 cwt., Egyptian 3.40@3.50; Milo maize, 3.20@3.25.
Rye, 3.15@3.30.
Barley, 3.00.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00 @54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of September 10, Scott, Wagner & Miller says:
Receipts past week 2809 tons. Labor Day no work was done in the line of loading or discharging cars or boats and the arrival of the Fleet caused many to come to the city allowing shipping to wait their return. This, in conjunction with the shortage of cars which is becoming more stringent daily, has had the effect of cutting down receipts. During the week the government received bids for about four thousand tons of hay for shipment to Manila and Honolulu. This hay to be double compressed. In all probability award for this hay will be made to San Francisco bidders. Other than this call, there has been no particular demand, and hay has not moved to as good advantage as it did during the previous weeks. This would indicate that consumers are becoming stocked up with their winter supplies. Fancy wheat and red oat hay, which usually arrives by rail, have been somewhat scarce and therefore in demand. There is no inquiry for straw and heavy offerings of same are being made without many sales being effected.
We quote today wholesale prices in carload lots as apnear from dealers' transfers upon the Hay Market—for prices to consumer, charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay (light 5-wire bales)	17.50@19.00
No. 1 Wheat or Wheat and Oat Hay	15.00@18.00
No. 2 Wheat or Wheat and Oat Hay	12.00@15.00
Choice Tame Oat Hay	15.00@18.00
Other Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@14.00
Barley Hay	12.00@16.00
Alfalfa Hay	17.00@22.00
Stock Hay	8.00@12.00
No. 1 Barley Straw, bale	50@80

Citrus Markets

Los Angeles, Sept. 10.

Valencias going forward satisfactorily after the strike. Owing to reduced stocks in markets Eastern prices are somewhat higher. Demand is good.
Lemons occasionally commanding long prices.

Shipments

Shipments of citrus fruits to date since November 1, 1918; Southern California: Oranges, 31,329 cars, lemons 8884, total 40,213. To same date last season: oranges, 13,453, lemons 5362, total 18,815. Central California this season: oranges, 4427, lemons 354, total 4781. To same date last season: oranges, 2539, lemons 115, total 2654. Northern California: oranges, 244, lemons 2, total 246. Last year same date: oranges, 203.

AT THE AUCTIONS

September 8

New York: 29 or., 2 mixed. Val. 1.85-7.30, grapefruit 1.50-2.70, lem. 6.00-8.25.
Boston: 11 or. and grapefruit. Val. 2.40-5.70, grapefruit 60-1.75.
Philadelphia: 6 or., 1 lem. Val. 3.30-5.95, lem. 3.85-6.35.
Pittsburg: 5 or., 1 lem. Val. 2.05-5.20, lem. 3.45-4.70.
Cleveland: 2 or., 1 lem. Val. 3.10-5.15, lem. 3.60-3.70.
St. Louis: 2 or., Val. 2.45-5.25.
Cincinnati: 2 or., 1 lem. Val. 3.85-4.90, lem. 3.70-4.70.

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The Utility Tractor

A Practical Tractor
For Practical People
At a Practical Price

If you come to the Demonstration be sure and see the UTILITY at 209-211 No. Los Angeles St.
Will be demonstrated for you in your work.

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Sanguinetti's Quality Brand
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Alfalfa Seeds

Grown on Certified Fields

Unexcelled for Germination, Purity, Color and Productiveness

VARIETIES:

Chilean (Common) Smooth Peruvian
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Orders Shipped Same Day Received

It will be to your interest to ask for our prices and samples before placing your order elsewhere

E. F. SANGUINETTI - Yuma, Arizona
"THE HOME OF THE HAIRY PERUVIAN"

MICA AXLE GREASE

No hot boxes

Mica Axle Grease contains powdered Mica, which fills up all roughness in spindles and bearings, makes the grease work better and last twice as long. Easier pulling. Forms a cool slippery coating that resists wear and pressure. Ask your dealer. Buy by the pail.

STANDARD OIL COMPANY
(California)

Fancy Melilotus Seed 99.76% Pure

SHEEP MANURE COW MANURE

High Grade Commercial Fertilizers
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When writing advertisers, mention The Cultivator.

Some Potato Diseases

By Charles L. Fenton

IT is just the plain simple fact that potato growers all over the country have been sleeping while fiendish bacteria and impish bugs have combined to try to drive our unprepared spud clear off the earth.

But now we are awake. Our live-wire state director of agriculture, George H. Hecks, sent out the S. O. S. at Riverside recently, and it was voted unanimously to sound the call for all potato growers to join the fight against potato diseases.

Now, down to a few plain words about bugs and bacteria:

Spindling Sprout

This is just plain weakness of constitution due perhaps to running out of the race. The seed has, mayhap, been grown too long in the same unfavorable conditions. It sends forth a lot of slender weak sprouts, grows to a dwarfed top and presents a poor yield of scrub spuds.

The remedy is seed selection from best yielding, most robust plants and best yielding high grade tubers for several years until a pedigree is established. Some immediate good will result from testing the seed before planting and discarding such seed as throw out the spindle sprouts. If the tubers have been kept cool and dark and well ventilated in storage they are more apt to hold their vitality.

Curly Dwarf

This disease is also inherited. Most spuds have been propagated from slices off the parent so long that strength from the original source is sometimes lost. The plants are dwarfed, with leaves crinkled and rolled downward. Tubers are few and small.

The remedy is hill selection of seed from best plants or by destroying the affected plants as soon as discovered. If the whole field is affected, pocket the loss but don't plant seed pieces from that field for the next crop and don't sell the mongrel stock to some innocent grower, explaining that they are a little under sized but just right for seed.

Two Blights

There is early blight, or leaf blight, and late blight which may affect leaf, stem and tuber. Late blight is not common in this section. Early blight is indicated by brown spots on the leaves. The whole plant is sometimes killed before the tubers are half grown.

The remedy is to spray with Bordeaux; four pounds bluestone, five pounds quicklime, to 50 gallons water when plants are six inches high and repeat two or three times as needed.

We are fortunate in not having the Colorado potato bug and not much blight but we have fusarium wilt which is a bad actor.

Fusarium Wilt

This disease appears in yellowish brown rings around the inside of the tuber, starting at the stem end. There are wilted blackish spots just before rot sets in. It appears on the stems under ground and above ground, causing the plants to turn yellow and die quite rapidly. There is no stopping the disease on a plant except to destroy the plant. That does not add any immediate profit to the grower's pocket but it may pay in the long run to go through the field and rogue out the affected plants.

Prevention is possible if cure is not. Select seed free from the disease at time of cutting. Practice hill selection, of course watching lest the least trace of the disease is found on the hills chosen for seed. If this disease gets established in the soil the fiendish bacteria will stay there for six or seven years even when no potatoes or tomatoes are grown there. If one continues to supply the bacteria with potato plants the soil will continue to get sicker. In some sections it is already sickest and spuds are strangers there.

Potato Scab

This "scab" belongs to the union of diseases which fights the capital of the grower by lowering the market price of the spuds it joins itself to. It is simply a scabby, scaly surface, and like a cancer eats down so that a lot of peeling has to be done to properly dress or undress Mr. Spud.

The remedy is dipping the seed in corrosive sublimate solution four ounces to 30 gallons water for one and one-half to two hours in a wooden vessel and cutting and planting immediately. In heavy damp, poorly drained and poorly aereated soil the scab acts its worst. Practice crop rotation.

Rhizoctonia

This satanic member of the combination chooses to disguise himself as wart like dirty specks on the tubers that will not rub off because they are more than "skin deep." It does not hinder the cook as much as scab but it lowers the yield more because it affects the stem of the plant, causing it to turn brown and shrivel and the foliage to turn yellow before the crop is mature.

The remedy is dipping in corrosive sublimate the same as for scab and also seed selection at time of cutting, plus crop rotation.

Flea Beetles

Some insect members of the enemy of potatoes, need arresting. The first are flea beetles. These small brown jumping imps eat holes in the leaves and thus prepare the way for their allies, the fungus diseases. The young of the beetles as larvae or worms feed upon the roots and stems under ground.

The remedy is to spray with a combination spray of Bordeaux, as recommended above for blight plus about 7 pounds of lead arsenate paste to 100 gallons of the Bordeaux solution. Repeat if necessary. The arsenate poisons the leaf eaters while the Bordeaux tends to drive them away.

Leaf hoppers are sometimes found on potatoes, especially near alfalfa fields. They are small, slender, quick jumping insects which feed on the undersides of the leaves. They do not often get serious enough to require spraying. They are controlled when numerous by spraying with an angle mist nozzle, using Blackleaf 40 one pint; fish oil soap, five pounds; water 130 gallons, or in small amounts one teaspoon of Blackleaf 40 to one gallon of soapy water.

Tuber Moth

The tuber moth lays its egg on the potatoes at night. The eggs hatch and the worms bore into the tubers. The damage is serious in many sections.

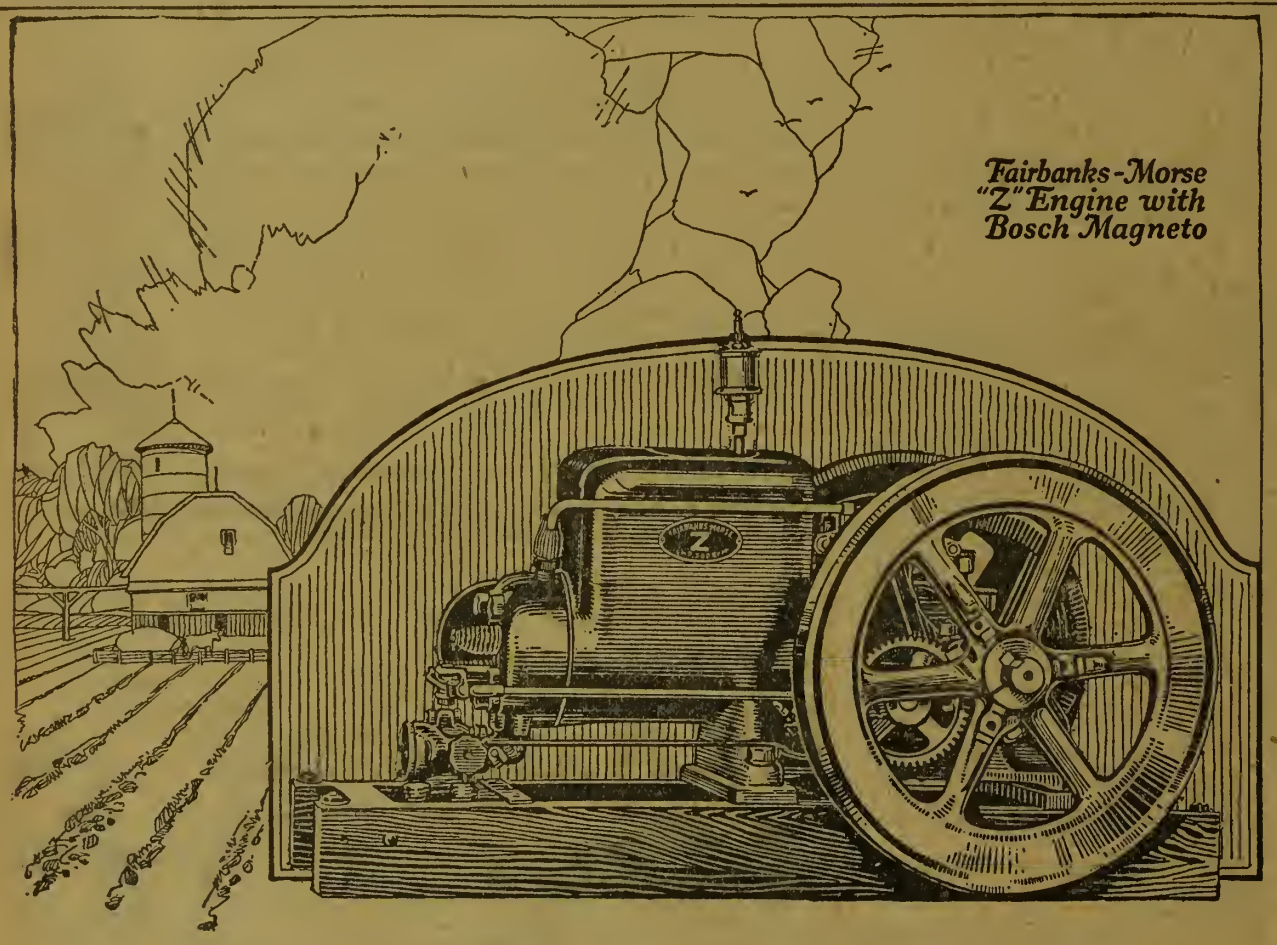
Care must be had to keep the potatoes well hilled up in the field. The moth will crawl down into the cracks and will discover any exposed tubers. At harvest time potatoes must not be left exposed after sundown. Covering with vines or straw is not sufficient. They must be covered closely with sacks or with canvas. Fumigating the potatoes in storage with carbon bisulphide gas will destroy the larvae.

Wire Worms and Nematodes

Wireworms are tough yellowish jointed worms from one to two inches long which attack the tuber. The adult form is the black click beetle. Starve them by summer and fall plowing and harrowing. Dry fallow may starve them but is expensive and produces no crop. Practice crop rotation and clean up all trash in the field which might give shelter for the adults over winter.

Nematodes are minute worms (eel worms) not seen with the naked eye. They cause a rough warty appearance of the tubers. They work on many plants in light sandy soils, producing knotty roots.

There is no method of control except to vary the crops, planting grasses, alfalfa, etc., the roots of which are not badly attacked. Letting the ground dry out and plowing and cultivating dry for two seasons is pretty expensive but in extreme cases is necessary.



SINCE the "Z" was put on the market, over 250,000 farmer buyers have pronounced it the greatest farm engine value. ¶ We felt the same way about it. ¶ But following our policy to improve our product whenever possible, we are highly pleased to announce a new Fairbanks-Morse "Z" with Bosch Magneto—high tension ignition which adds the one possible betterment. ¶ Call on the "Z" dealer near you—see this world's greatest engine—understand the full meaning for you of the engine service which over 200 Bosch Service Stations give, in co-operation with every "Z" dealer, to every "Z" engine buyer. ¶ Prices—1½ H. P. $75.00—3 H. P. $125.00—6 H. P. $200.00—All F.O.B. Factory.

Fairbanks, Morse & Co.
MANUFACTURERS CHICAGO

THE LATEST ON GRAPE SYRUP

Continued from Page 361.

cussed in Bulletin 303. It is believed that its commercial production warrants serious consideration.

Existing Plants Can Be Utilized for Grape Syrup Making

The large wineries possess ample crushing, pressing and filtering equipment, tanks and vats. They could install the necessary vacuum pans, pasteurizers, and canning equipment to produce a red syrup described under "2" or a neutral white syrup as described under "3." The red syrup could be sold as such or used for blending; while the white syrup would be used for blending with Muscat syrup made by the freezing process.

Existing breweries would with slight additional crushing and pressing equipment be well adapted to manufacture syrup by the freezing process. All large lager beer breweries are fully equipped with refrigerating and ice making machinery, as well as large freezing rooms, tanks, etc. All have large steam plants as well, so that vacuum pans could also be installed and syrup be made by both processes. The field is worthy of the attention of California brewing companies.

Summary

It has been proven by repeated experiments upon a large laboratory scale that a red grape syrup of fresh grape flavor can be made from wine grapes by combining grape syrup made by the freezing process with that made by concentrating red juice in a vacuum pan. If for table use, Muscat grapes may be used to excellent advantage to furnish flavor.

A red syrup of deep color and jelly like flavor and suitable for table use and wine making, may be made from wine grapes by heating the juice and skins to extract the color and then concentrating the filtered juice in a vacuum pan.

An excellent white table syrup of strong Muscat flavor may be made by partially neutralizing with chalk, filtering, and concentrating in a vacuum pan, juice from wine grapes and combining this syrup with 25 per cent of its volume of Muscat syrup produced by the freezing process.

Success of the vacuum process depends upon leaving the liquid in the vacuum pan as short a time as possible; never to exceed one and one-half hours. Long heating destroys color and flavor and induces caramelization.

Red grape syrup is much smaller in bulk than an equivalent amount of raisins; is of less weight; is very convenient to dissolve and dilute with water; possesses more of the fresh grape flavor and color than raisins and has a greater range of uses. For these reasons grape syrup should supplant dried wine grapes, even for export for wine making purposes.

Existing wineries and breweries already possess the most expensive parts of the buildings and equipment needed for the manufacture of grape syrups. Their commercial production should, therefore, be seriously investigated by such organizations with a view to turning the otherwise idle plants to profitable use.

Raising Small Fruits in California

By J. W. Mills

NEARLY all parts of California will grow small fruits, but there are soils and climatic conditions which raise them to perfection. This is especially true in the warm belt along the coast. If grown on a large scale one must have a ready and not too overburdened market as the fruit perishes so quickly. Then, again, as the season of ripening is short, be sure of the labor situation.

Cultivation

Successful growing of all small fruits depends upon the care given.

Give a thorough cultivation of the soil before planting and frequent shallow cultivation after, in order not to injure the roots. Keep the weeds down as the moisture must be conserved.

Propagation

Small fruits are very easily propagated, which is an important factor to the man of small means.

Blackberries and red raspberries are propagated in two ways, by suckers and root cuttings. The former is the better way for family use.

Loganberries, dewberries and the black raspberries are propagated by tip layering, that is, bending down a cane and covering lightly with dirt until it roots.

Strawberries are propagated by means of runners.

Gooseberries and currants are obtained from cuttings or layerings.

Planting

Blackberries should be set out in February in rows from six to eight feet apart with the plants four to six feet apart in the rows. The trailing varieties, such as the Mammoth, require from seven to eight feet apart and eight to sixteen feet apart in the rows. The same is true of the loganberries.

Raspberries are usually planted the same as the blackberries but may be profitably grown nearer together.

Strawberries are usually grown in raised beds in double rows.

The furrow between the rows serves as an irrigation ditch and a walk. This prevents the picker from tramping the soil around the plants. Strawberries require greater care in planting than any other of the small fruits. Young plants must be used and not allowed to dry out while planting. The strawberry bed is usually a permanent bed.

Gooseberries and currants are usually planted in rows two and one-half feet apart to five feet apart in the rows and the rows from five to six feet apart. Currants do well between certain orchard trees, as the cherry, apple and pear.

Pruning

Blackberries, raspberries, dewberries and loganberries produce fruit once on canes of one season's growth. Hence, after fruiting, all old canes should be cut out. New canes come up around the crown as suckers, but they should be thinned out to five or seven strong healthy canes. This should be done during the winter. These canes may be tied to upright stakes or trained to run on wire trellies.

Pruning of currants and gooseberries is entirely different. They grow more compactly than the brambles and may be pruned to a tree form or allowed to grow bushy which seems to be the better way as the borer does not trouble the bush so much in that form. Remove all dead wood and thin the new shoots. In the summer pinch the new growth in order to cause a dense foliage which is necessary to secure the best fruit. Most of the fruit is borne from short spurs on two and three-year-old wood.

Bearing

Blackberries and raspberries usually produce some fruit the second season after planting and fruit profitably for about eight years, when they should be taken out.

Currants and gooseberries do not bear well until the third season after planting and reach their maturity about the eighth year.

Strawberries if well cared for will produce luscious fruit until the plants are ten years old, but are not a profitable crop after the fifth year.

Varieties

Blackberries: Lawton, Kittatinny, Early Harvest and Crandall are the best known varieties in California and the Mammoth for the trailing kind.

Raspberries: The Cuthbert (red variety) is most extensively grown and has been found to be a constant bearer. Of the black variety, the Gregg seems to be most in demand, but only for family use as there is no market for them.

Strawberries: There are a number of varieties to choose from in the strawberry list. Marshall, Sharpless, Prolific and Gold Dollar seem to be most widely grown.

Currants and Gooseberries: The Cherry currant and Fay's Prolific have the preference in the currant line; Houghton's Seedling, Berkeley Champion are the most favorably known of the gooseberries.

More Than a Yard Every Second

When You Use This Handy

MERRY GARDEN AUTO CULTIVATOR

THINK what it means to cultivate your crops at the speed of from 120 to 200 feet per minute—more than a yard every second! And not merely scratch up the surface, but really work down deep—five or six inches and within one-half inch of the plants — without the push, pull or bearing down that wears you out. That is the kind of service you get from the MERRY GARDEN AUTO CULTIVATOR.

Saves the Work of Three Men

Actual tests prove one man with a MERRY GARDEN does more work and does it easier and bettter than four men do with hand cultivators. It works uniformly without slighting a single row. Goes between wide rows and astride narrow rows.

Simple to Operate

The power is furnished by a reliable 2 h. p. gasoline motor controlled from the handles. Requires no pushing or pulling. Simply guide it along the rows. "It leads the way." When not used as a cultivator, the addition of a pulley frame furnishes power for small machine, such as the separator, churn, lawn mower, saw or grinder. Price of frame, $10 extra.

Sold on a Money-Back Guarantee

We allow a 5-day trial, backed by a rigid money-back guarantee. Order direct from this advertisement, as you are fully protected by this guarantee. If for any reason the MERRY GARDEN fails to do the work, purchaser in accepting same agrees to notify us within 5 days from receipt thereof. We reserve the right to send a demonstrator, and if machine fails, purchase money will be refunded. Price $185.00, f. o. b. Cleveland, Ohio. Terms 10 per cent, or $18.50, with order. Balance on delivery, with privilege of examination subject to five-day trial and guarantee. Shipping weight 250 pounds. For further information and particulars, address

The Atlantic Machine & Mfg. Co.
450 W. Prospect Ave., Cleveland, O.

Gentlemen: Find enclosed $18.50 for which ship the Merry Garden Auto Cultivator, balance to be paid on delivery. This order is placed subject to the terms of your money back offer.

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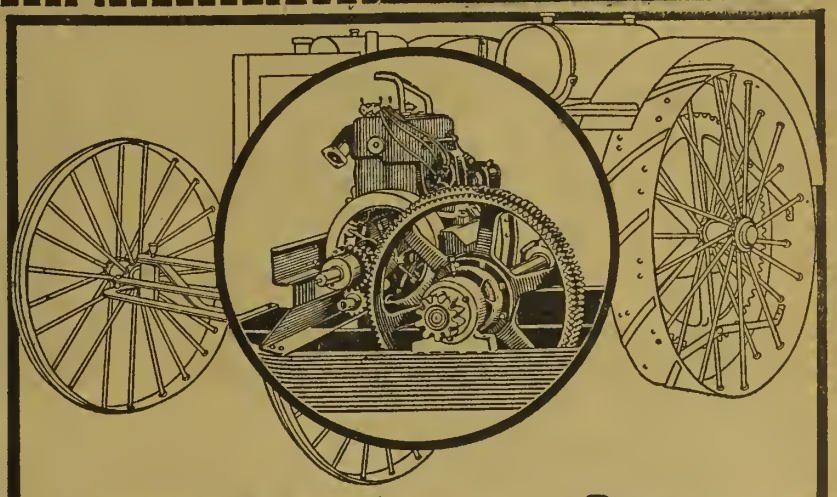
Wanted: Live Wire Representatives in all localities

(5)



Direct Drive Conserves Power *in*

12 H. P. on Draw-Bar

25 H. P. on Belt Pulley

THE HUBER Light Four

Draws three bottoms

Turns an acre an hour

TRACTOR economy and tractor power depend largely on the proportion of the power developed by the motor that is delivered to the draw-bar.

In simplicity and economy the direct spur gear drive of the Huber Light Four is unequalled. There are no bevel gears—simply a friction clutch and spur gear reduction to the driving wheels.

Other reasons why the Huber develops such large power in proportion to its weight are: the high wheels roll easier and afford a larger area of "traction grip"; center draft conserves power by avoiding "side pull"; high-grade extra strong materials reduce weight.

These features are the result of 20 years' development. They are behind the Huber reliability that has created thousands of satisfied Huber owners.

Weight 5,000 pounds; pulls three 14" bottom plows; 12 h. p. delivered to the draw-bar; 25 h. p. at the belt; Waukesha, four-cylinder motor; Perfex Radiator; Hyatt Roller Bearings; burns gasoline, kerosene or distillate; center draft; two speeds, 2½ and 4 miles per hour.

Write for "The Tractor in the Making". It tells the interesting history of tractor development.

THE HUBER MFG. CO., MARION, OHIO.

THE HUBER TRACTOR SALES CO.
1012-14 So. Los Angeles St. Los Angeles, Cal.

Some good territory is still available for live dealers.

MOLINE WIDE SPREAD SPREADER

With Straw Spreading Attachment

With this spreader you can drive through doors and narrow places, as the box is only 38 inches wide, yet you can spread the manure in a wide even sheet.

It is low down, easy to load, strongly constructed, light in draft, and the second beater thoroughly pulverizes the manure, spreading it in a wide, even sheet beyond the wheel tracks. One lever operates the entire spreader.

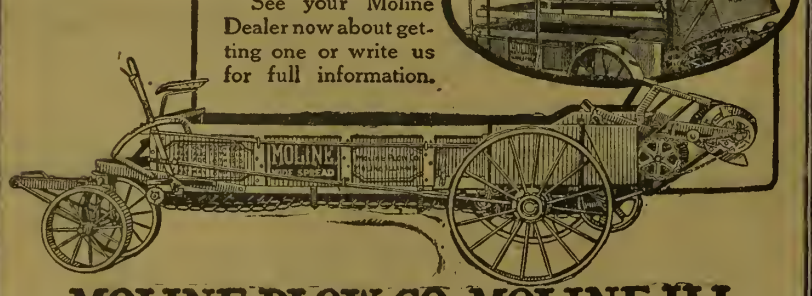
This spreader can also be equipped with a straw spreading attachment which is illustrated here. It is easily attached and spreads straw in a wide, even sheet, as thinly as you desire, even on windy days.

Straw is worth from $4 to $8 a ton as fertilizer and as a top dressing for winter wheat.

You can make more profit from your manure and straw with this Moline spreader.

See your Moline Dealer now about getting one or write us for full information.

The Moline Line of Implements
Plows (steel and chilled)
Harrows
Planters
Cultivators
Grain Drills
Lime Sowers
Mowers
Hay Rakes
Hay Loaders
Hay Stackers
Grain Binders
Corn Binders
Pitless Scales
Spreaders
Wagons
Moline-Universal Tractors
Stephens Salient Six Automobiles



MOLINE PLOW CO., MOLINE, ILL.
MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

Krogh Pump and Machinery Company

206 No. Los Angeles St.
Los Angeles, Cal.

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Krogh Pumps are Absolutely Water Balanced
No End Thrust Possible *No Set Collars Used*

The No Trouble Pump

Krogh Direct Motor Driven Pump

Fitted with Ring Oiling Bearings

Renewable Babbitted Bushings

Ring Oiling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

B. Hayman Co. Inc.

Since 1876

WAGONS AND AGRICULTURAL IMPLEMENTS

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Oliver Plows. Roderick Lean Disc Harrows
Forkner Tillers Planet Jr. Cultivators
Studebaker Wagons

Perfect Farm Machinery

When writing advertisers, mention The Cultivator.

More and Better Wheat

By Norman F. D'Evelyn

AS PLANTING time approaches our grain farmers, present and prospective, have to face the issue of what to plant. Many of them will find their answer in the slogan that has been sounded in a systematic, aggressive way for the last year throughout the grain growing districts of the state: "Plant More and Better Wheat." Last year's campaign and this year's harvest certainly have done much to dispel some pretty firmly held theories that have been used as arguments against more wheat, and these same factors have pointed out and proved out in impressive fashion the way to better wheat.

This year there will not be the same patriotic incentive that during the war was such a great factor in stimulating the maximum production of wheat. However, in spite of the remarkable increase realized last year California's production is still far below her consumption of wheat. The same economic reasons, therefore, should make the planting of wheat attractive to the grain farmer the coming season.

The headway made last year could be regarded as much more secure and permanent were it not for the present remarkably high price of barley. At the beginning of this year only the most optimistic could have realized that barley would reach the high price it commanded a few months later, and still commands. At the same time the thoughtless have been quick to jump at the conclusion that since the government guarantee is removed, the price of wheat will drop precipitately.

Besides the determination to follow up in a logical way the experimental and development work already done, these two—the respective future prices of wheat and barley—considerations, which have led up to what is regarded as false conclusions, have prompted the agricultural department of the Sperry Flour Company to renew in a systematic and thorough-growing way its "Plant More and Better Wheat" campaign. A series of weekly bulletins has been issued to a list of some 1600 wheat growers in California who were in touch with the department last year. The cooperation of the milling industry generally and of the commercial organizations, the press and other agencies, has been invited, and their participation has been suggested to the end that California's wheat production may reach a parity with her consumption.

The campaign is in charge of George R. McLeod, head of the department, who handled the program carried forward so successfully last year, and he will be assisted by B. D. Ingels, chief chemist, in charge of the company's wheat exhibit at the California state fair.

As to the prospects for barley, it is pointed out that California's principal market is Europe, but the approaching crop of corn, estimated at 72,000,000 tons for the United States, together with 25,000,000 tons of oats and barley, will provide an enormous supply from which Europe can draw, besides the 50,000 tons per week being shipped to Europe from Argentina. American farmers who raised wheat last year for patriotic reasons will again turn to corn, oats or barley and other crops more suited to their land, making for an increased production of coarse grains and a decreased production of wheat. There is every indication that next summer Europe will be in a position to buy her normal requirements of the coarse grains at a substantially lower price. On the other hand every factor points to a high price for wheat in 1920, a price that will be governed solely by the world's demand.

Bearing out this statement the following analysis compiled with extreme care is presented:

According to Mr. Hoover, Europe will require this year a minimum of 700,000,000 bushels of wheat and a maximum of 850,000,000 bushels. Recent estimates indicate that the United States will produce 940,000,000 bushels instead of a billion and a quarter as per estimates of May first.

San Joaquin County Way of Helping Feed the World

Field of early maturing wheat in San Joaquin County. George R. McLeod of Sperry's agricultural department is examining the wheat.

Our requirements for human consumption, for stock and poultry feeds, for carry over and for seed will amount to 700,000,000 bushels, leaving for export only 300,000,000 bushels.

The export surplus in Australia and Argentina amounts to 500,000,000 bushels, but recent reports indicate that 50,000,000 bushels of Australian wheat must be shipped to famine stricken India. Therefore the total world's surplus for export to Europe will be only 750,000,000 bushels. This is 100,000,000 bushels less than the maximum European requirements and makes no provision for shipments to the suffering millions of Russia.

The situation in 1920 will be little better. Russia cannot possibly get on her feet for several years. India will require most of her new crop to replenish stocks. The surplus in Argentina and Australia will be used up Europe must get her total wheat from the crop harvested in 1920.

Considering that Europe will increase her own harvest to equal her own increased consumption, due to high prices of other foods, we make the following tabuation of exports to Europe:

	Pre War	1920 Estimate
United States	100,000,000	300,000,000
Canada	92,000,000	100,000,000
Australia	50,000,000	100,000,000
India	51,000,000	None
Russia	162,000,000	None
Argentina	106,566,000	150,000,000
Total	561,566,000	650,000,000

One of the most encouraging aspects of the whole situation has been the convincing proof of the fallacy of the

theory that California wheat lands have worn out, for last year and this year many fields produced as big crops as they did 35 years ago. There have been many striking instances, too, of wheat growing alongside of barley and making the better crop, and farmers have become impressed with the fact that wheat will do better on land that is not well drained than barley will, and that wheat is better adapted to localities which have frosts than is barley.

No doubt the biggest factor in bringing wheat back into favor has been the introduction of early maturing wheats such as Early Baart and Bunyip, both developed on Sperry experimental farms. These varieties have made it possible to produce from ten to 14 sacks of wheat on land that would grow not more than six or eight sacks of Bluestem wheat. In view of the fact that there is insufficient rain in seven out of ten springs in California, the early maturing wheats have the advantage over what have been standard varieties of being far enough advanced to be less susceptible to drought.

Assuming that the grain grower has decided to plant wheat, there are a number of factors that must have serious consideration. Soil preparation is certainly not the least important. The soil may contain in ample quantity the ingredients making for fertility, but unless these are available the farmer is no better off than if he were farming on a barren plain.

Probably the most successful California method of rendering the insoluble ingredients of the soil available for wheat is by summer fallowing, and if his lands produce no crop next season the farmer should be comforted by a realization that the following harvest will have made the apparent sacrifice a mighty good investment. The land should be plowed in the fall after the first rains and allowed to stand rough through the winter. In the spring it should again be plowed and also harrowed to make a covering to retain the moisture.

If in the following fall there are early rains, it is best to allow the weed seeds, etc., to germinate and get a good start, and then plow these under and seed before November 15 if possible. If no early rains come the seed should be drilled in the dry ground so that it will be ready to germinate when the rains do come, and thus have a chance to get ahead of the weeds.

There are no practical methods of crop rotation that have worked to advantage in California. However, there have been marked improvements in the yield and quality of wheat grown on lands which have had two or more crops of beans or alfalfa on them. In fact old alfalfa land could in most cases be advantageously planted to wheat for a couple of years. Twenty sacks of wheat is no unusual harvest from an acre of good alfalfa land.

Wheat also makes a good crop to rotate with rice. The land is full of the weeds that grow with wheat. And two years of wheat will eliminate the water grass of the rice fields. Incidentally there is a decided increase in the yield of wheat, due to an improvement of the soil conditions by rice culture.

The principles of dry farming are very applicable to California wheat production. The conservation of moisture by so plowing the soil that it will hold the moisture and by so harrowing, and sometimes mulching the top dirt, that the moisture will be retained, is of vital importance.

Plowing loosens up the soil so that it becomes like a sponge and retains great quantities of water. Then by forming a blanket or covering of finely pulverized dirt over this reservoir, sufficient moisture is retained to assure plant growth during the months of April and May, which are so often without rainfall.

Certain clay soils have a tendency to form hard top crusts when this blanket is too finely divided. Especially is this true when the winter rains are very heavy. In such cases it is necessary to harrow the land in the early spring, and even if some of the wheat plants, three or four inches high, are destroyed, the remainder of the plants are so much benefited that the yield is very materially increased.

A hard crust not only keeps out the air which is just as essential as water for plant growth, but it also acts as a capillary evaporator and removes the moisture much more rapidly than otherwise.

On many farms the plow sole formed by plowing at the same depth for several years, becomes such an established condition that one does not realize the damage it does to his land. Practically all the plant food and moisture that the grain receives must be obtained from the soil above this pan—neither the plant roots nor water will readily penetrate it. The proper procedure is to break this plowsole up so that a larger reservoir of moisture can be formed and more food become available. Every low spot must be filled if a maximum yield is to be obtained. Ditches should be provided to carry off surplus water.

Finally, the wheat grower should bear in mind these essentials:

Select the variety that is adapted to the conditions under which the crop will be grown.

Get the best seed and clean it thoroughly.

Keep after the weeds. It may be necessary to pasture summer fallowed lands with sheep so that undesirable plants can not develop beyond the blossoming stage. It takes two years to overcome morning glory and some other weeds in this way. Black oats can be plowed under when three or four inches high in loose soil after fall rains. By cutting the wheat with a binder it is often possible to get rid of the weeds before their seeds mature. If a combined harvester is used see to it that none of the weed seeds get back on to the land. To harvest weeds means increased cost of bags, freight, storage and milling expenses

FINDING TRUCKS' EFFECT ON ROADS

To determine the destructive effect of heavily loaded auto trucks on highways and streets, and to meet the demand for data on the design of road surfaces and foundations to withstand such heavy traffic, a series of experiments is being conducted by the bureau of public roads, United States department of agriculture, at the Arlington experimental farm to determine the impact of auto trucks on roads.

The most striking single development in the highway field in 1918 was the tremendous increase in motor truck traffic. Five years ago heavy motor trucks were few in number and limited practically entirely to the paved streets of larger cities. These vehicles now comprise probably four or five per cent of the grand total of all motor vehicles and are to be found wherever traffic conditions permit profitable use. But very few roads were designed to carry any large volume of this class of traffic. Consequently, the cost of adequate maintenance was increased greatly during the year. In many places the damage due to the incessant pounding of these fast and heavy vehicles was so great as to require complete reconstruction.

TO COMPLETE OLD NATIONAL ROAD

A project under the federal aid road act, filed with the bureau of public roads, United States department of agriculture, which will undoubtedly hold the record for length and cost for some time to come, is of unusual interest aside from its great length and cost. It contemplates, after the lapse of nearly a century, the completion of the Old National Road, extending from the Potomac to the Mississippi, which already has been largely improved as far west as the Indiana line.

The proposed type of surface is monolithic brick and concrete pavement, the average cost of which is about $30,000 per mile.

Based on complete reports from 44 of the states cash expenditures on the rural roads and bridges of the United States for the calendar year 1918 amounted to $286,098,193. To this should be added the value of statute and convict labor, which can not be fixed with any great degree of accuracy but probably amounted to not less than $14,000,000, thus making the grand total expenditures for the year $300,000,000.

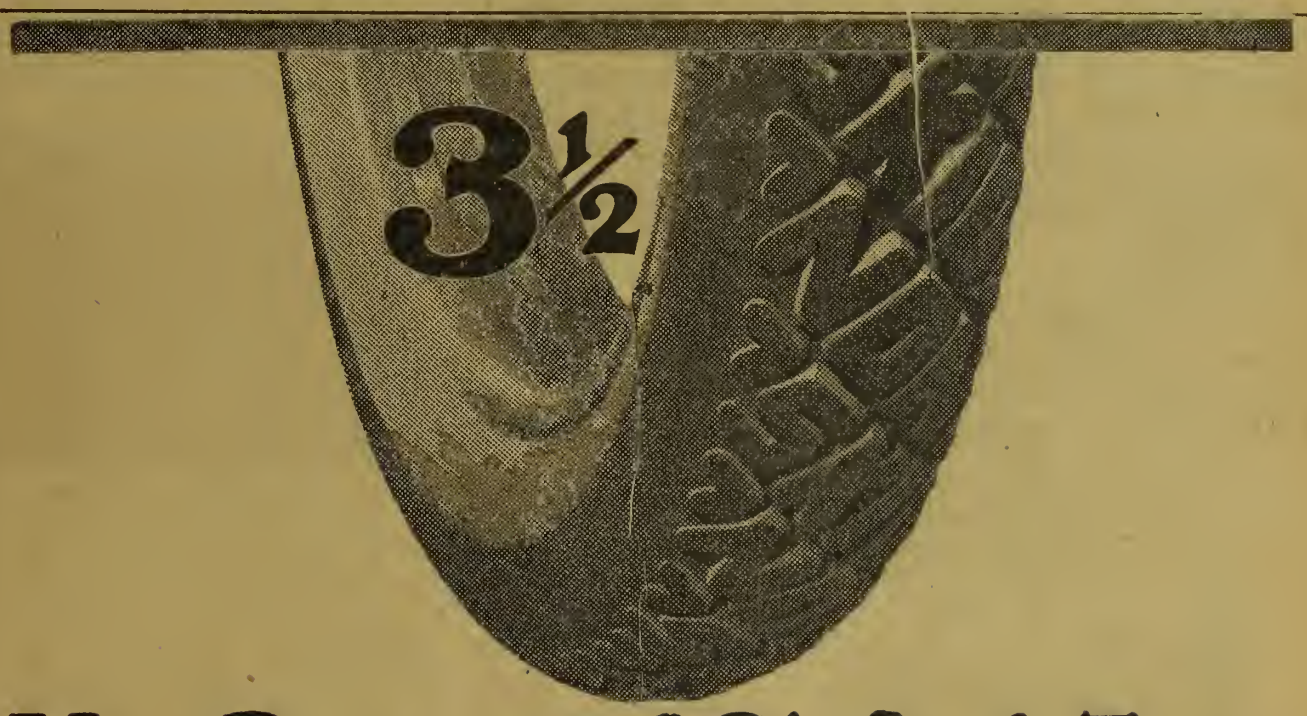
ACTING ON HIS TIP

A false charge had been brought at his court, and the magistrate remarked: "We are all liable to make mistakes. I thought I was wearing my watch, but I have just discovered that I have left it at home."

When he arrived at home that evening his wife said to him:

"I hope you got your watch all right. I gave it to the man from the court who called for it."—Dallas News.

Stocks of Egyptian cotton on hand in Alexandria, Egypt, July 18, according to the United States bureau of markets, totalled 261,000 bales as against 220,000 bales last year at the same date, and 84,000 bales two years ago. The total visible world's supply of cotton, all classes, July 18 was 4,927,937 bales, over one and a half million bales more than last year.



You Buyers of 3½ Inch Tires

You represent over half the tire buyers of the world. You deserve special consideration. Your volume of demand calls for the biggest value.

Recognizing this, Firestone has built a special $7,000,000 factory for you, designed special machinery for your tire and special looms to weave your fabric.

And this factory is operated by an organization devoted entirely to your requirements. The methods and machinery leave no room for errors or flaws. Result: This special molded tire is the nearest thing to a perfect tire that engineering can give you.

By saving from 10% to 30% on every factory operation, you get this tire at a price that some pay even for the "off brand" kinds. 30x3½, non-skid, $18; 32x3½, non-skid, $21.

You get a 6,000 mile adjustment basis, and you get it from Firestone—always in the front in value-giving and now years ahead of the field. Any one of the 42,000 dealers who bank on Firestone quality will put these money-saving tires on your car.

Most Miles *per* Dollar

Firestone

food

is mightier than pen and sword

It is the foundation of health and human energy. It produces the stamina and the strength to do things. On the field of battle—as well as on the tables where peace and plenty reign—chocolate has proved itself a 100% food.

To insure supreme quality chocolate you must *insist* upon Ghirardelli's. It comes *only* in cans *—for your protection.*

At the store where you do your trading—in ½ lb., 1 lb. and 3 lb. cans.

"Say Gear-ar-delly"

D. GHIRARDELLI CO.

Since 1852 San Francisco

Ghirardelli's Ground Chocolate

Portable heat-
convenient - economical

At the light of a match—instant heat. No smoke; no odor. Comfort without dust or dirt. Oil consumed only as needed.

Pearl Oil is refined and re-refined; pure and clean burning. Sold in bulk and in five-gallon cans. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.

PEARL OIL

STANDARD OIL COMPANY
CALIFORNIA

California Cultivator
Costs $1 per Year

Household Department

THE REAL MAN WITH THE HOE

These verses were written by Edward Berwick of Pacific Grove at the time of publication of Edwin Markham's famous "The Man with the Hoe." Mr. Berwich wrote these in protest against the Markham attitude.

We're tired of the drool and the drivel,
Lamentation and mourning and woe,
Supercilious Society's snivel
Daily fired at the man with the hoe.

Bipeds such as the painter has pictured,
And vast ink-shed has forced us to know,
May wear liv'ry of Gotham's "Four Hundred"
Full as oft as they're found with the hoe.

Crowns have circled slant brows of such creatures;
There are natures as bestial and low,
Demoniacs debasing God's features
In ranks that heap scorn on the hoe.

Such a man; such a hoe; stirs your pity;
Hoe and man are so surely "no go";
But you'll find just such men in your city,
Tho' they never set hands on a hoe.

The real man with the hoe is not hunting
Sham sentiment, maudlin and slow;
He's the man with true gun and bright bunting
Who goes when his country bids "go."

Boy in blue, he has ever been ready
When Columbia has needed a man
To stand in staunch ranks, firm and steady
Or fire-tip fierce charge in war's van.

This world's one relentless rude scrimmage;
Mad mortals amuck for "the dough";
But, when God planned a man in His image
He set him to work with the hoe.

Mother Earth can dispense with some classes.
Brush wielders, ink slingers may go;
But she can't spare that friend of the masses.
She must have the man with the hoe.

He's the "braw boy" our backbone is built of;
From his stock sturdy presidents grow;
Labor's King poets proudly may lilt of;
Hurrah for the man with the hoe!

THE PERFUME CLERK

(Continued from last week.)

"It's glorious to be at home," he resumed; "but I want to get back—as quickly as possible."

He looked at Alice, whose eyes had clouded.

"It's an awful thing—war," he said; "but now that it's come I don't want to miss my part of it."

A light that Alice had sometimes seen on his mother's face shot across his.

"Aren't you afraid of being killed, John?" Alice asked the question before she thought. She had not meant to say such a thing before his mother; but his mother smiled to herself in perfect peace.

"Of course I am sometimes," her son replied. "You see, that's something I don't fully understand. We always seem to be needlessly afraid of mysteries, and we're always finding out that they're harmless. I'm sure of this: if we knew about death, we'd know we were fools to fear it."

His mother broke in eagerly: "Yes, we won't think about it: we hide our heads, or we run away from it to lights and company; and when it comes, perhaps all it'll mean"—she looked at her newly returned son—"perhaps it'll be the face of some one we love."

WAYS TO FRESHEN WOOLENS

Washing with Soap and Water

Woolens may often be washed with lukewarm water and mild soap provided the color is fast.

Washing with Soap Bark

Soap bark is excellent for dark woolens which might streak or fade with ordinary soap (sailor suits and middy blouses, for example). It may be purchased cheaply at a drug store. Make a solution by boiling one cup soap bark (about three ounces) and one quart of water for five minutes; cool, strain, and mix with wash water like ordinary soap solution; or put the soap bark into a small thin bag and soak and squeeze it in the water. A little soap bark used in the rinse water gives the goods a slight stiffness.

Sponging and Pressing

Sponging and pressing are used to freshen garments or goods which are not soiled enough to need washing or will not stand it.

To remove wrinkles, use clear water.

To remove grease and dirt, use mild soap or soap bark dissolved in water, then clear water.

To remove shine, use one tablespoon ammonia to one quart water, then clear water.

Apply with a clean, soft, lintless cloth, a sponge, or a piece of the material itself. Sponge with light even strokes in the direction of the grain of the goods, using only a little moisture at a time.

Iron on the wrong side with a medium hot iron or press with a damp cloth over the right side. Brush up nap if too closely pressed down.

Steaming

Steaming is especially good for removing water spots. Work over a tub or bowl of very hot water or use one of the special steam spreaders which fit on the spout of a teakettle. Shake dry; or, in the case of outer garments dry on a hanger which holds the garment in shape.

Dry Cleaning

Dry cleaning is cleaning without wa-

TREES

By Clarence Ousley

Trees are the arms of Mother Earth lifted up in worship of her Maker. Where they are, Beauty dwells; where they are not, the land is ugly, though it be rich, for its richness is but greasy fatness and its gaudy raiment is but cheap imitation of forest finery.

Trees are the shelter of man and beast and bird; they furnish the roof above us, the shade about us, and the nesting places of love and song. They call children out to play; they entice sweethearts into leafy coverts to seal their vows with fond caresses; they console and gratefully reward old age. They are the fittest ornaments of wealth and the inalienable possessions of the poor who can enjoy them without having title to them. They are the masts that fly the flags of all nations and the sails of all the seas; they are the timbers that bridge forbidding streams; they bear the wires of the world's intelligence; they hold the rails that carry the traffic of the continents; they are the carved and polished furnishings of the home; they cradle the young and coffin the dead.

Trees are nature's prime sources of food; their fruits and nuts gave sustenance to the first tribes of men and are the sweetest and most nourishing of the earth's products.

Trees herald the spring with glorious banners of leaf and bloom; they clothe the autumn in garments of gold and royal purple; bared to the winter's cold, they are the harp of the winds, and they whisper the music of the infinite spaces.

Before the earth could be peopled it was set thick with trees; and when man has run his course and the race we know has disappeared in the completeness of its mission or perishes in the destruction of its trees, the earth will spring up again with new forests to shelter and sustain a new race of men and beasts and birds to work out a greater destiny. Perhaps if we are wise enough to replenish our wasting forests and to make ourselves worthy of the gift of trees we may be permitted to accomplish that greater destiny which the Mighty Forester, the Perfect Orchardist, the Loving Father requires in the fulfillment of His sublime purpose.

ter but not necessarily without liquids. There are two kinds of dry cleaning, one by the use of gasoline, benzine, or naphtha, which dissolves out the grease and thus frees the dirt; the other by the use of powders or meals which absorb it.

EGGS IN NEW WAYS

Some people do not like eggs, that is eggs plain fried, scrambled or boiled. But there are other ways of serving, ways that carry an appetizing addition that make the egg dish as satisfying as the still more expensive meat:

Spanish Eggs

Fry slices of bacon until brown and crisp; when done, remove to a hot plate. To the grease, add two tablespoons of honey and fry eggs in it, placing them, when done, on a bed of freshly boiled rice. Put a slice of bacon on top of each egg and turn over all a cup of thin cream sauce, smooth tomato sauce, or the fat and honey in which the eggs were fried

Eggs a la Lyonnaise

Boil some eggs hard, shell and chop coarsely and set aside. Peel and chop fine a small Spanish onion, fry in butter until lightly browned; then add a cup of rich broth, seasoning the chopped eggs; dredge with a little browned flour and stir, while the mixture thickens slightly, as it heats through. Turn on to toast slices and garnish with potato puffs.

Eggs in Overcoats

Scrub clean and bake medium-sized white potatoes; when done, cut off an end of each potato, scoop out the pulp with a small spoon, mash and season well; then fill the shells three-quarters full, standing them on end securely in a buttered pan. Break an egg in the top of each and set the pan in the oven long enough to re-heat the potato and set the eggs.

Anchovy Eggs

Boil the eggs hard. When cold and shelled, spread the eggs thingly with anchovy paste; then dip them in raw egg, roll them in crumbs and fry like croquettes. When done, drain them on paper, place on a hot plate and turn over them a cup of fish sauce.

Egg Fritters

Boil, peel and quarter the eggs lengthwise. Have ready a little plain fritter batter. Dip the egg quarters into the batter and fry them in deep fat. Then drain and serve with melted butter or any well flavored sauce.

French Poach

Cover the eggs with vinegar and let them stand over night. Rinse the eggs and boil them seven minutes. Take off the shell and lay the eggs carefully on slices of toast. Have ready a good cheese sauce, turn it over the eggs and garnish with sprays of fresh cress or parsley. The sauce is a rich cream, made not too thick with a quarter cup of grated cheese, added just before serving.

Syrian Eggs

Fry a minced onion in butter; when a delicate brown, add a half can of tomato and okra, first cutting the okra in small pieces. When the mixture is hot, add two and one-half cups of freshly boiled rice. Mix well, then turn the mixture into a shallow buttered dish. Break over the top as many eggs as there are persons to be served, making a little hollow with a teaspoon for each egg, so that they do not run off the top. Dust with pepper and salt, and put the dish in the oven long enough to set the eggs.

Eggs en Casserole

Boil the eggs until hard; peel, cut lengthwise, and devil the yolks, filling the white halves again and tying them together with a bit of thread Lay them in a buttered casserole with sausages, sliced potatoes and a sufficient quantity of brown sauce. Grate a little raw onion over the top, cover and cook in the oven for one-half hour.

To remove blood stains, soak in salt and water for some hours, then wring out and rub in a fresh supply of salt and water. Next wash in the ordinary way, with soap and warm water, boil, rinse and dry in sunshine

SUGAR SYRUP FROM HOME GROWN CANE

We often see the question asked: "How can I get the sugar out of the cane?" The answers are generally for large producers, and the home gardener who has raised a few hills to try what she can do gets little information.

Last year I thought I would try a way of my own, and it proved very satisfactory. I first cut the stalks into small pieces to handle easily. Then I peeled all the outside away from the pith and put the pith through the meat chopper, first with a moderate knife, then second and third times with the finest knife. There is always quite a quantity of juice comes out at the back of the grinder when using the sharpest knife, so to catch it all I put a cup on a chair and caught a cup full. This I put by itself. Then I covered the ground pith with water and boiled it till the sweetness was all in the water and the pith tasted like sawdust. I took it off the stove and strained it into another kettle, and when it had boiled till I thought the water was all boied out I put in the cup of pure juice and boiled it all together till it was the consistency wanted and it surely was a pure white syrup with no bitter or strong taste. I did not make it as thick as molasses. The longer you boil it the thicker it gets and the stronger it tastes. —A. E. W., Redondo.

HOT SCHOOL LUNCHES

Thirty-eight rural schools in Missouri are now serving hot lunches to their pupils, through the activities of home demonstration agents.

In many places the teacher and pupils made fireless cookers under the direction of the home demonstration agent, and at one school the boys made the kitchen table. Women in different communities donated oil stoves and cooking utensils, while each child provided his own dishes. In one instance the Ladies' Aid Society of a nearby church donated cups, spoons, and bowls. Cloak rooms have been converted into kitchenettes. The equipment was bought in most cases by the school board. When this was not possible, entertainments were given to buy equipment and supplies. In one district an entertainment was given by teacher and pupils and $75 was cleared. Twenty-five dollars was used to buy equipment and supplies, and the remaining fifty to buy a Liberty bond.

In Mississippi County a rural school of seven pupils, one boy and six girls raised a garden, canned and sold vegetables and bought an oil stove. The women of the community donated the remainder of the equipment. The hot lunches are supplemented by cans of vegetables that were kept for this purpose. A marked improvement in work, conduct and health, is reported in every school where the hot lunch has been tried.

Don't wait till you start to town to make out a list of the things that you want to get. Keep a penny pad and pencil hanging in the pantry and during the week jot down the needs as they become evident. A number of them will not be annoyingly forgotten then.

Don't be afraid of trying up to date methods—new ways of doing things. The new way may be an improvement on the old; if it isn't, it need not be followed again.

We may not at first see it, but almost always opportunities are hiding back of the difficulties—and it pays to hunt them out.

If you will hang your pictures facing the wall, then turn them over you will find that the crossed wire will keep them hanging straight.

Narrow white tape is more satisfactory than ribbon for at least the everyday corset covers. It is neat and strong and unharmed by innumerable launderings.

An excellent way to press mussed waists is to sprinkle your ironing sheet instead of the waist. The steam that rises as you iron will take out every crease.

With a table full of hungry men folks!

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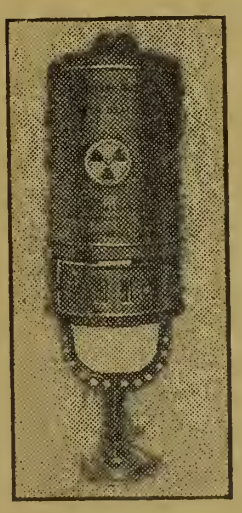

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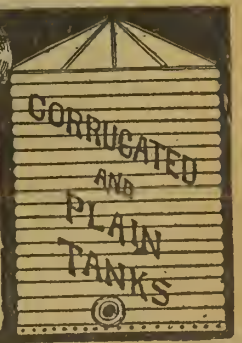

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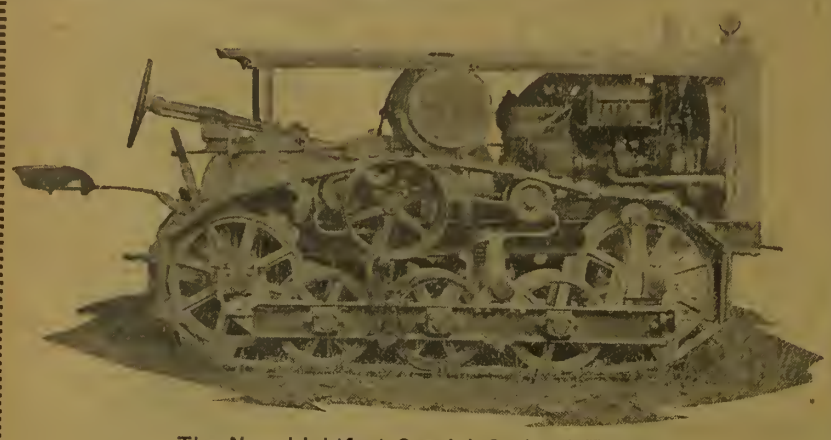

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AND THEN

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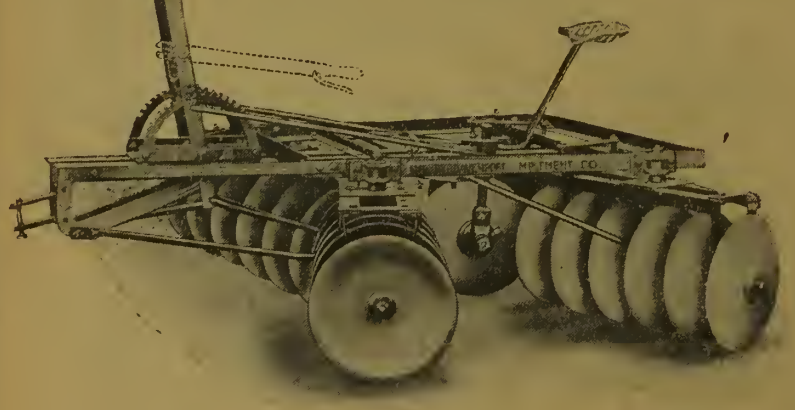

Field operations—the actual performance and wearing ability of the Davenport Double duty disc harrow make it the most serviceable and dependable for California conditions. The above illustrates the improved model made in 6, 8, and 10 foot sizes for both horse and tractor power. No sturdier construction was ever offered.

The entire frame, excepting braces is of angle steel. The standards are one piece and are attached to slotted disc hangers permitting self adjustments.

The center disc is adjustable to any angle necessary to completely cut out the core. Bearings are of hard wood lubricated by grease which, forced in, keep dirt and grit out giving longer wear. All grease cups are easily accessible.

Levers are furnished either for tractor or horse power and special low levers are also furnished extra if needed to disk beneath trees.

Discs are standard 18 inch plain or cutaway pattern. There is no soil condition known in California suitable for farming under which this disc will not do satisfactory work and its especially sturdy construction is a guarantee of its wearing qualities that is backed by a factory that for years has been California's largest producer of disc harrows.

It is to your interest to buy implements of well known established home manufacturers, as you will be near the factory and receive prompt factory service.

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How One Woman Made Good

By Jean A. Koethen

WHEN Mrs. Clara J. Bell drifted from Chicago five years ago to California it was with the distinct purpose of making her home and her living here. Just how the latter end was to be accomplished she did not know, but surely in a country like this, so full of climate and sunshine, there must be a chance for everyone. As luck would have it, her fortune led her to Burbank, one of the many poultry communities adjacent to Los Angeles, and here Mrs. Bell found the chance she was looking for.

A good many women, she found, were making a fair living with poultry, not the easiest work in the world, but a business that always makes a living for the person who comes to it without prejudice and with sleeves rolled up. Mrs. Bell's sleeves were rolled up. "What one woman can do, another can," she told herself, and resolutely went to work.

But do not expect to hear that she started in with a thousand day-old chicks and made a fortune the first year. Mrs. Bell knew that she did not know very much about chickens. She began with eight old hens, which she bought for $1.25 apiece, just common hens, nothing more. They were kept in a Maltby coop, but in spite of confinement they laid, often eight eggs a day, never more, not often less. These eggs paid for their feed and provided the family with a tempting breakfast every day. Mrs. Bell figured: "If eight hens lay 200 each in a year, how many will it take to make me a living income?" and she thought she had the answer.

That fall she bought 250 White Leghorn pullets of good bred-to-lay stock. They were five months old and soon began to shell out the eggs so convincingly that she thought she might safely go a step farther. Early the next spring she took a real plunge and bought 2000 day-old chicks. She had now learned to feed layers for eggs and knew something about the care of brooder chicks, so the rest was fairly easy. From the 2000 chicks she raised 750 fine pullets. The cockerels, which were sold as broilers, paid for the chicks, with something over toward the keep of the pullets. When the pullets had been Hoganized, 700 standard-bred birds were left, and these were the foundation of a flock which now numbers 1200 and is housed and yarded on an acre of ground.

Mrs. Bell's birds are kept in two long houses, each 60 by 18, and divided into four sections, so that each section provides roosting space for 150 hens. These houses are of the open-front type so generally seen in California, and are equipped with cement floors, awnings on pulleys to let in the sun or keep it out, as the case requires, covered mash boxes accessible from both sides, droppings boards that are readily moved for cleaning and nest boxes with hinged tops which may be closed at night to keep stray broodies out. The double-yard system is followed, the hens being kept in one yard while a crop of Sudan grass or barley is grown in the other.

Sudan grass is found to be a very good summer green feed on this ranch. When it is planted in the individual yards it is cut four times for feeding before the chickens are turned in to finish it up. A patch is also kept just for cutting, and this patch, if well watered, yields crop after crop and is ready for cutting, with the right care, a month after planting. If left to itself it often grows as high as an ordinary person's shoulder.

One secret of success, Mrs. Bell believes, lies in constant culling. She does not, however, believe in culling by the color test nor by the late molting test, though she admits the hardest working hens are always the shabbiest looking. "The hens that molt fairly early and get to work again before fall," she declares, "are most valuable to me."

Mrs. Bell's layers have the usual ration for layers—a dry mash accessible at all times, a liberal feeding of mixed grains at night and cut greens at noon. For breakfast the hens usually get sprouted barley, sprouted three days, or just till the roots begin to show.

Once she makes sure that a hen is a good layer, she keeps her three years, but all slackers and laggards and imperfect birds are ruthlessly culled out month by month as she finds reason to doubt their vigor or prolificacy.

"Can a woman make a living at poultry keeping?" I asked Mrs. Bell. Her reply was emphatically affirmative. Not only have her hens made her a comfortable living, in spite of skyhigh feed prices, but they have bought her a little truck in which she does her own hauling. She loves her fowls and enjoys caring for them, and this has no doubt contributed very largely to her success.

Corning House at San Diego

Are we to understand by Mrs. Koethen's article, "No Yard House," published in August 16th number of Cultivator, that the Corning chicken house is not common in your section? As they are so common in this section I naturally presume they are in your section so will not go into much detail.

The upper picture shows exterior of one of mine, 100 feet long, 16 feet wide, 8 feet high in front, 6 feet high in back and built from 18 inches to three feet or over off the ground as contour of ground may require so that floor is level.

The lower shows interior. Dropping boards at right three feet off the floor, roosts hinged at back. At upper right is shown trolley line along which dump box, suspended from two barn door hinges, runs, for purpose of cleaning dropping boards. Feed troughs to left, above floor about 18 inches, and line of birds 'at it." Litter perhaps six inches deep on floor. Muslin curtains hinged and partly down shown in upper picture.

Nests are made "drawer" fashion and slip under dropping board and tight up to it so dropping board forms top to nest. Hens enter nests from back and front door lets down to gather eggs. These do not show as picture was taken before many nests were installed. This house was built in 1913 and has had chickens in it practically ever since, either given outside range or not as convenience might dictate.

Why "units"? Birds have full run of this house. House this size capable of accommodating 800 to 1000 birds. Faces south, windows also open on north side under dropping boards. Of course I know there has been agitation that birds do better in smaller flocks, and I am inclined to try this out as far as brooding is concerned. I have always brooded in large lots from 500 to 1200 odd, using a Buckeye coal stove or fuel oil stoves made in Petaluma.

But I believe if I were to build more laying houses they would all be made on this plan, in general, with possibly some detail changes. I can find you excellent laying records of houses of this kind—in one instance one 160 feet by 16 feet containing 1500 birds never out of the house.—Warren Roberts, San Diego.

* * *

I do not know just why the no-yard house is not in vogue in the section about Los Angeles. Perhaps it is because of a general feeling that in so warm a climate birds need to get into the real outdoors, or maybe it is because the poultry department of the University of California, which most of our poultrymen take as their guiding star, does not favor either this style of house or the keeping of hens in flocks of over 200. Possibly it is just sentiment. I wouldn't like to be shut up all my life; why should a hen like it? Be the reason what it may, outside of a very few men who are trying out the Charles Weeks system, which confines the birds in flocks of not over 25, Mr. Hawes is the only

A Corning Poultry House

Exterior above and interior below, showing a bunch of contented fowls. Description on preceding page.

e I have found using this type of ouse. Perhaps I might add that Mr. awes implored me not to give his ldress because he already had more sitors than he wanted.

Theoretically, the double-yard system is the ideal. Practically it never orks out as you think it is going to. he hens eat up the green crop too pidly, and then they have bare yards gain. As between bare filthy yards id none at all, the balance should rtainly be on the side of none at all. more spic-and-span cleanliness is quired in the no-yard house (at ast it is practiced); on the other hand, one person can care for a considerably larger number of hens when they are confined.

At the University, and I believe at all experiment stations, sentiment is against the large flock. But this proves nothing. The proof of the pudding has never been its recipe. While the hens in the large flock may lay a slightly smaller number of eggs, you can keep more hens with the same amount of labor, or perhaps with less labor. I hope I shall be able to investigate the San Diego system of housing more thoroughly before long.—J. A. K.

Storrs Egg Laying Contest

Storrs, Connecticut, August 29. Report for the forty-third week ending igust 28:

Reports from the egg laying contest Storrs show that in the forty-third eek the hens laid over 200 more eggs an in the preceding week, or a total 3107, as compared with 2995 for the eek before. This is not an unexcted gain; the only thing out of the dinary is that it came a week later an the management expected it ould. The records for the last five ars show that a similar increase in g yield has occured on the average ring the second and third weeks in igust of every year instead of the st week. This yield means then, at throughout the week each 100 ns average to lay nearly 45 eggs day as compared with only about eggs a day for the previous week.

From all previous records it may be fely predicted that this is the last crease in yield, as the production of e flock as a whole will decline from is time on until the end of the const in October. Another interesting ing in this connection is the fact at during the last five years August s without exception, been the month which the total number of eggs ld for the largest amount of money. iere are, of course, other seasons ring which considerably more eggs e laid, as in May and June for inance, and there are of course, times ien eggs sell at a higher price, as November and December; but the st combination has always come in igust.

A pen of White Leghorns entered J. Frank Dubois of East Lynn, assachusetts, won first place for the eek with a yield of 54 eggs.

The three best pens in each of the incipal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francais, 1652; Laurel Poultry Farm, 1619; Ingleside Farm, 1482.

White Wyandottes

W. Bradley, 1422; Curtis L. Allen, 1383; Merrythought Farm, 1255.

Rhode Island Reds

Laurel Hill Farm, 1570; Deer Brook Poultry Farm, 1493; Chas. H. Lane, 1436.

White Leghorns

Hilltop Poultry Yards, 1600; J. Frank Dubois, 1522; Kirkup Bros., 1523.

Miscellaneous

Chickatawbut Farms (White Rocks), 1422; Pequot Poultry Farm (Rhode Island Whites), 1364; Albert T. Lenzen, 1233.

Markets are necessarily placed on Page 362 of this issue.

SCALY LEGS

A bunch of scaly leg fowls add nothing to the attractiveness of the yards and certainly nothing to the profits. Clean it up. It's easy.

If the legs are dipped in kerosene or greased with lard every few days for a week or two the mites will be killed and the scales will gradually peel off. The fowl's legs should not, however, be left long in the kerosene—not more than a few minutes at a time, or the whole skin may become tender and sore on the fowl's legs. By dipping the legs in kerosene first, and then greasing with lard, one can make doubly sure of effective treatment.

Some flocks are allowed to go untreated for a long time, with the result that the legs become chalky where the birds have picked off the scales in their frantic efforts to get relief from the mites. It is downright cruel to permit fowls to suffer in this way.

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — September 20, 1919 — No. 12

The Big Four in the Money at California State Fair

Upper left, exhibit of Yolo County, winner of first prize. The three large bales in front of the exhibit are those of Turkish tobacco which grows remarkably well in that county. Upper right, exhibit of Fresno County, winner of second prize. Remarkable exhibit of fresh fruits, cured fruits, conserves and other fruit exhibits in glasses. San Joaquin County in lower left was the winner of third place; a wonderful exhibit of diversified farming, vegetables and fruit. Fourth prize winner was Kings County, lower right. The little cottage "painted" with milo and other sorghum grains was filled with fruits and neat enough for any housewife to live in.

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Overland

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California Cultivator

Vol. LIII, No. 12 · Los Angeles, September 20, 1919 · One Dollar Yearly

California Fruits at California State Fair

By A. Layman

YOLO was first, Fresno was second, San Joaquin third, and Kings County, fourth in the big county competition at the state fair. This was in the special county prize contest, the hardest fought for at the state fairs since California put up her claim as the greatest fruit state of the Union, and this is pretty nearly always, at least so far as our own state fair is concerned. The big money in the first prize, $600, is one inducement, but by far the greater is the advertising value of "First Prize County" in California fruits and agricultural products.

As one entered the main agricultural or horticultural building Yolo County's exhibit was at the right. It was a remarkably fine exhibit and before the judges made announcement of their awards you heard often expressed the opinion that the award would rest between Yolo and Fresno. Both exhibits were exceptionally well arranged. Yolo's was in charge, and in fact the entire exhibit had been staged by, Fred Shaffer, secretary of the county chamber of commerce.

Next to Yolo was Calaveras, also in the prize money, its exhibit in charge of H. R. Barden and James B. Luddy. This was largely of minerals, though there were some very fine agricultural exhibits, and these minerals, in fact, account for Calaveras' exhibit being one of the winners.

Humboldt County made a fine showing of pears, apples, potatoes, wool and products of woolen mills. The center of her exhibit was a small model of a church built in cedar from material taken from an old church building erected by the Russians when they occupied the territory of Humboldt County in 1812. This timber which was resawed and used in the construction of this little model of the original church looked as bright and well preserved as if just made from the standing timber. This exhibit was in charge of J. F. Benton, R. L. Warner and V. C. Bower.

Next to Humboldt, and still in the south end of the building, was Alameda. In magnitude and careful selection Alameda hardly came up to some of her former exhibits, but for variety her exhibit was wonderful. In fact, it was split, for besides this one in the horticultural building a large tent was erected near the manufacturers building and in this was the exhibit of the manufacturers of Alameda County. She made most striking exhibit of the cotton mills, the largest of the West. Edwin Stearns was in charge.

Going down the east side, the first exhibit was that of Sacramento County. Sacramento was not in the money, in fact, not in the entries. For, as she has always done, she did the gracious hostess act and while making an exhibit told the others to go to it with their winnings, and she would be simply an onlooker. She had a fine showing of grains, fruits, both fresh and in glass. The most surprising exhibit, perhaps, in this collection was that of grapefruit. Sacramento County has one large grapefruit orchard in particular which claims to have the finest grapefruit grown in the world. The exhibit was in charge of Fred C. Brosius and C. A. Wilkins.

Siskiyou County made a wonderful exhibit of minerals, especially of gold nuggets. These were the genuine article, not gilded paste, and thousands of value was represented by them. They attracted continual crowds. Other minerals and mineral water made up the principal part of this exhibit which was in charge of W. L. Kleaver.

The center of the building under the rotunda was occupied by the war department exhibit of small arms; also by concessions for sweet cider, orange juice and other "fruit" drinks.

One of the most striking exhibits in the building was that of Solano County. Solano's long suit was plums. Possibly there were not hundreds of varieties but there were certainly scores. To be more definite there were exactly 80 varieties of plums in this one exhibit. One of the most striking ones being shown for the first time is the one which has been named the President. It is a new seedling produced by Millard Sharpe on his Vacaville place. There was a large number of other recently produced seedlings which gave an idea of the magnitude of the plum industry and its future importance. Other striking features in the Solano exhibit were specimens of ramie in all stages from the growing plant to the finely finished article as soft as silk. Solano's exhibit was in charge of Charles Wire and Millard Sharpe.

The Fourteen Counties Association, having to do largely with the counties of the Sacramento Valley, left most of the county exhibit work to individual counties. However, it took the opportunity to attract attention to the entire valley and its worth to producers.

The north end of the great building was given up to the state fish and game commission. A great panorama, made effective by various colored lights operated automatically, gave sunrise, noonday and sunset effects and included a view of California's mountains from Whitney to Shasta, with real waterfalls and running brooks alive with rainbow and other trout. These fish were shown in all stages of development from the egg to huskies a foot and a half long.

Going up the west side of the building the California State Exposition Building of Los Angeles was there entire, though in a small model. In fact, the entire exposition grounds were there and attracted attention to this wonderful exhibit place as a means of showing the worth of the agricultural products, the mineral products and all opportunities of the state. This exhibit was in charge of W. H. Fowler and A. Koach.

Los Angeles County was next. Oranges and lemons, apples and ostrich feathers, climate and health were all exhibited. Los Angeles County was proud of its winning on citrus fruits. The exhibit was not large but it was a little gem. It was in charge of Chas. Wilson and Avrian Green.

Tehama County exhibited the Iron Canyon project, or, rather, the Iron Canyon, project which is in Tehama County, exhibited itself and showed the wonderful possibilities from conservation of winter floods. The irrigable area of this proposed Iron Canyon lake was 225,000 acres. H. P. Hatfield, secretary of the Red Bluff chamber of commerce, was in charge.

John D. Maxfield, in charge of the United States forestry service with headquarters in San Francisco, had a most interesting exhibit, interesting because it was in motion. Artificial forests were constructed and causes of forest or mountain fires were shown. One scene was that of a passing train. A spark lights the tinder of a grain field and colored lights and real smoke give a most realistic effect. The machinery takes this view out of sight and presents a mountainside where a stroke of lightning, quite real, starts another fire. And so with the carelessly left camp fire and other fire causes.

Down the center of the building from the south end is Kern County with great exhibits of mineral oils, of milo and other sorghums, and great varieties of fruits in glass containers, in charge of C. F. Johnson and L. D. Culley, the latter being the designer of the exhibit.

Glenn County exhibited under difficulties. Her booth had been designed by an artist in Los Angeles and was ready for delivery when the strike started. Likewise the great exhibit of fruits, grains, especially rice, were in Glenn County, and found it hard to be removed from there, also because of the strike. Trucks were requisitioned and the artistic design was carted from Los Angeles to Sacramento in trucks.

Grapes, raisins, peaches, plums, figs, fresh, likewise cured, canned and preserved, were all exhibited by Fresno

Continued on Page 381.

Two Artistic County Exhibits at California State Fair 1919.

The feature exhibit at the left is that of Glenn County, one of the newer and one of the younger counties of California. It was one of the most artistic in the great horticultural building. Exhibit at right, that of Los Angeles County. While first on citrus fruit, citrus fruits entered but little into the general make up of the feature. The basket of peaches in this exhibit was declared by an expert to be the most perfect in color, form and flavor of any he had seen.

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A Journal of Horticulture, Agriculture and Live Stock

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Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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THIS WEEK'S COVER

The cover speaks for itself. The best part of it is that in doing so the Big Four, or the counties which were topnotchers in the winnings at the state fair, are speaking for other counties of the state for their exhibits are but an example of many others made at the same great show.

KILL THE DUCKS

Now comes the fish and game commission and secures the revoking of permits which have been granted to rice growers to kill ducks which are a pest in their fields.

Ducks may be of more value than rice to a few millionaires, but the rice growers and some other producers are asking serious questions as to the value of some of our state organizations which are putting sporting above feeding the world.

EVERYBODY STRIKE!

Now comes the Amalgamated Federation of Railway Mail Clerks and makes an appeal for immediate salary increase of $1,000, effective July 1, 1919, and $500 as a bonus for each of the years '16, '17 and '18. This looks exceedingly attractive, and we suggest that farmers and others appeal to the government for a bonus of $500 for the past three years because of losses incurred, or because of this or that or some other equally good and sufficient reason.

It is simply astounding how we are all getting the idea that our Uncle Sam has one long pocketbook and all of us are entitled to put in our fingers whenever we need additional cash. If we don't get it, of course we can all strike. The policemen are doing it, and now it is stated that the propaganda is being carried into the U. S. army, and soon we may have common desertion under the name of a strike.

THE TRACTOR SHOW

Tractors and their implements are being demonstrated at La Brea field this week. They are in the hands of experts and better work is being done than the average farmer will be able to do. Nevertheless there is an excellent lesson in this demonstration in the hands of experts, and many a farmer will get his first inspiration to do better and bigger farming than in the past. This demonstration may not be one of the biggest ever, but it certainly is one of the best in that tractors and implements are constantly being standardized and brought closer to perfection.

Unfortunately soil conditions at this period of the year are not such that the most attractive show can be made of power farming. The dust which rises from the hundreds of tractors and implements in operation is almost unbearable, but people are dressed and prepared for the job in hand and they are learning power farming—which means profitable farming.

WAR ON THE PRODUCER

The Retail Grocers' Association of San Francisco is endeavoring to divert attention from the abnormal profits of its members and turn it to the producers. It has held a meeting and resolved. In fact, it is charging that the producers are combined in one or several great trusts. This is the way the grocers put it:

"The California Rice Growers' Association has already announced an opening price of six and one-half cents a pound as against 4.32 cents last year. This will mean a retail price of 12 cents a pound to the consumer, the margin of profit to the retail grocer being the same as last year. In addition to this, the California Almond Growers' Exchange and the California Walnut Growers' Association are planning to announce increased prices in a short time. The former will announce tomorrow an opening price of 35 cents a pound as against 25 cents last year. The walnut growers on October 10 will announce an opening price of 35 cents a pound, the price last year being 25½ cents. It can readily be seen just what these increases will mean to the consumer."

Apparently the retailers enjoy passing resolutions. The ostrich is not the only animal which thinks itself perfectly safe once its head is covered in the sand.

STANDARDIZING

An agricultural fair is a place where optimism prevails. Every exhibit is presumed to be made with an idea of expressing: "See what we have done under California soil and climatic conditions with these big pumpkins, perfect grains, luscious fruits and various other products filling every nook and corner of this great agricultural building."

But there was one exhibit at the recent state fair which did not emphasize this optimistic tone. This was a part of the exhibit made by the state department of agriculture. There were crates of grapes, showing when the covers were lifted, great bunches of luscious fruit, but when the upper layer was taken off a vastly different condition was revealed. Grapes in various stages of decay, or so green and sour as to be absolutely uneatable, grapes with masses of honey dew producing mealybugs—the whole showing as far removed from standardized pack as was possible to make it. These grapes were taken from stands or from cars where they had been offered in regular trade. They were horrible examples which would in no way increase a liking for California products. Of course this exhibit was made by the standardization division of the department.

ELIMINATE GAMBLING

The Cultivator has referred in years past to some features of the state fair which were not strictly educational, for instance, the marriage in the lion's den, the selling of quack nostrums, and, years ago, the maintaining of a liquor bar. Nearly all of these objectionable features have been eliminated and we now have an educational agricultural fair.

It is evident that there must be opportunity for play and sport and entertainment for all members of the family, so spectacular events, fireworks, playgrounds, etc., are installed and aid in increasing gate receipts. One of these desirable features is located next to the womans' building. It is a playground which is so popular that it is already too small. There are swings, teeters, slides, sand boxes, practically everything dear to the hearts of the children, and all covered with an attractive tent. It is safely fenced to prevent youngsters from wandering. Yet directly across the drive from it is the zone or pike, or whatever it may be called, with concessions, some of them very objectionable. Most popular of these seemed to be the wheels of fortune. dice throwing, etc., where children are urged to pay "Five Cents for a Dollar Box of Candy"—or a Teddy bear or a kewpie. Many a youngster, seeing the sign promising big reward for small investment, does not appreciate the fact that he is taking chances, and when the dice are cast and he is informed that it is too bad his nickle did not win—and perhaps it was his last—he naturally leaves in tears or filled with resentment. We believe this to be the most fortunate ending of his venture, and he was far "luckier" than the child who wins the prize, that is from the standpoint of his future life. Some of the summer resorts of California have eliminated this form of gambling because of its vicious influence. Among other reforms which our state fair organization is initiating we believe it will be wise to bar these gambling devices.

MILLIONS FOR FAIR

President Roeding of the board of directors of the state fair association, speaking before the recently formed California Exhibitors' Association, urged that an annual state fair be held in Los Angeles in winter and, as heretofore, in Sacramento in the summer or fall. In addition he referred to the movement which has been started to secure a million dollar appropriation for improvement of the state fair grounds.

It seems to be fairly well settled that Sacramento shall remain the state capital and the center around which such activities shall revolve. Hence there should be no more delay than is unavoidable in the matter of fitting the grounds to give best service in the annual fair. At one time it was seriously discussed as to whether a state fair gave sufficient return to justify the expense. That question is settled, but the question now before us is: "Shall we hold two state fairs, one, as has been suggested, in the southern end of the state? The latter in order to give the vast number of tourists an idea as to agricultural possibilities north of Tehachapi; further, to give to the southern end of the state the advantages which come with such an exhibit of California's products. While the opportunity is to be given to Northern California agriculturists to exhibit in the South before winter tourists may be invaluable, yet the opportunity in Sacramento has not been of sufficient value to induce large numbers of southern producers taking their products 500 or 800 miles at a period when weather conditions are very hard on their live stock, fruits and other products.'

But in any case we believe it will be a wise move on the part of the producers to support the present movement for a liberal appropriation to fully equip the grounds at Sacramento.

A LITTLE RAIN

Prune, peach and raisin dryers were given an awful shock in a shower which visited some of the fruit drying sections of the state last week. The shock was given not because of the quantity of the rainfall but because of memories of last year's deluge and fears that this year's shower was but the beginning of a similar event. Fortunately a night and a day sufficed for the clouds and bright sunshine dispelled the fears and drying is going on under California's most glorous sunshine. Millions in gold will soon be coming Californiaward. Meantime, if more extended shower does come, here is a hint by Prof. Cruess:

"Prunes wet by heavy rains may be dried successfully, if they are exposed to the fumes of burning sulphur for two or three hours. This checks molding and fermentation and hastens drying; but action must be taken within five days after the rain has started, if the method is to be effective."

Last year's loss in prunes from rain, estimated to have been $5,000,000 could have been obviated by similar prompt action, acording to Professor Cruess.

Circular 213 of the College of Agriculture of the University of California, describing several types of prune evaporators, may be obtained free upon application to the state university."

BEANS UP

Beans are again back practically to the prices of a year ago. Manager Churchill of the Bean Growers Association anticipates the coming season's crop will sell for around 11 cents. Some new-crop sales have been made at $11.70. The United States over the total output will be little if any more than 50 per cent of last year's: Last year's disaster discouraged large planting, and this past season's shortage of rainfall are responsible for this great decrease. The disastrous slump in prices made possible by the cupidity of two or more officials in the food administration has cost the producers—likewise the consumer—millions.

Orchard Cover Crops

By G. W. Waterbury

COVER crops do two things; open up the top soil and prevent packing and washing by the winter rains (when there are any), and put nitrogen into the soil. Both are important but neglected by too many orchardists.

Cover crops are as necessary for deciduous orchards as for citrus. Nitrogen and humus are needed in all our soils in Southern California, which are strong in potash and fairly well supplied with lime and phosphoric acid. The only problem with the apple grower is how to get the picking of the late varieties through with in time to get a cover crop started before the warmth of the air and the ground disappears.

Summer cover crops planted in the inland districts, where the humidity of the air is very low, have not been a success. Frequent and deep irrigations are necessary in order to replace in the soil what the intensely dry air is removing from the ground through every added piece of vegetation.

Melilotus indica is at present the prime favorite, with Windsor beans, vetch and burr clover still used. What gives promise of soon surpassing all in popularity is the purple vetch, not now on the market but destined in the future for a long life of usefulness.

Purple vetch has been tried at the experiment station and on the Limoneira ranch at Santa Paula and has shown itself a hardy and rapid grower. The best stand I ever saw was a test plot grown by Mr. Culbertson on the Limoneira ranch some time ago.

In order to encourage the planting of purple vetch for seed, Mr. Barnes of the Fruit Growers Supply Company, has this year entered into contracts with seed growers in Oregon that will insure an ample supply to California Fruit Growers Exchange members in 1921. Mr. Barnes has guaranteed the price for this year's seed which is to be replanted by the Oregon seed men next year and the year following.

There are three ways of planting the cover crop in orchards. First sow before furrowing out and the land is then laid by for the winter. Second is to sow before furrowing out and again after the furrows are made but before the water is run in the irrigating ditches. The third way is to wait until after the irrigation, then work the land up and sow for the winter.

The first two ways are now the more popular, supplanting the former way of sowing after the irrigation when the land was laid by for the winter. The amount of seed sown is now from 20 to 30 pounds per acre for melilotus. Where the sowing takes place before and after the furrowing out process the amount is cut in two, half being sown each time. In orchards with wide spaces 30 pounds will bring a surer and thicker stand than 20 and is probably worth the difference in cost. The best time to sow in the inland districts is from the 10th of September to the 15th of October. Clover seed sown when the weather is dry and hot is often burned off at the top of the ground when starting and meets an untimely death. On the other hand cover crop seeds do not start readily in cold weather. They need heat to germinate.

The practice of splitting the monthly run of water without adding anything to the regular amount I have not found of particular advantage. The water remains nearer the surface of the land and perhaps helps the cover crop a little but does not percolate down deep enough into the soil to help the trees. Ideal weather conditions, of course, would favor breaking up the regular run, but the longer we gamble with ideal weather conditions the less we think of the business.

In lemon orchards in some districts a rapid growing, irrepressible thistle seems to thrive, encouraged by the shade of the wide spreading trees and the deeper shade from the sun's rays. Its rapid growth crowds out the slower clovers, and the nitrogen and humus are lost. A sprinkling of barley or rye with the clover is about all that can be done to head off and repress the noble aspirations of the thistle to rapidly possess the land.

Fortunately pickings in the orchards are very light when the clovers are beginning to grow, and thus tramping does not kill off a great proportion of the crop. In most orange orchards there is none at all and all thrifty orchardists have all their pruning done and the brush cut or hauled off before the cover crop goes in.

The apple orchardists are not so fortunate, and where late Winesaps or Rome Beauties are to be harvested the picking will probably be done after the cover crop is in. However if the roots have taken hold it is surprising how soon the stalks will grow after the beneficial fall rains come and favorable growing conditions are at hand.

The best way of sowing is undoubtedly by a small hand sower, which carries enough clover seed for about half an acre. This machine can be regulated to a nicety and if kept well oiled is easy to operate. There are three systems of caring for the seed when sown; one is to harrow as lightly as possible, the second to brush harrow the seed, and the third to leave without harrowing, depending on the irrigating water and the winter rains to wash the seed down into the soil and provide sufficient covering. A good portion of the seed will not be reached by the irrigating water and must wait for the winter rains to start. Fine clover seed will not start well, if at all, if covered with soil to more than slight depth.

Winter Cover Crop in the Citrus Orchard

By Robert W. Hodgson

DURING the last few years citrus growers in general have come to the realization that an adequate supply of readily decayable organic matter added to the soil at periodic intervals is of paramount importance in maintaining the trees in a healthy and thrifty condition. There are about three sources of active organic matter available to citrus growers at the present time, animal manures, bean straw and alfalfa hay, and the green manure or cover crop. The choice of the source which the individual citrus grower makes will depend naturally upon a number of factors. In some citrus sections bean straw and alfalfa are practically unavailable or cost too much to ship in, while in others the cost of transportation is practically nothing. In practically all sections manure has now reached an almost prohibitive price. The cover crop is not satisfactory under certain rather restricted soil conditions and does not amount to much in old orchards where the trees are close together. So that in selecting the source of organic matter the citrus grower has many things to consider. Where the cover crop is possible, however, we have considerable data to show that its use furnishes the cheapest and most efficient method of soil building in our citrus orchards. Its use is especially to be advised in young orchards, and particularly where soil conditions at the time of planting are not especially favorable. It seems possible by the judicious use of cover crops, both winter and summer, to build up the soil in a young orchard at the same time the orchard is being developed.

The emphasis has largely been placed on the winter cover crop on account of the natural rainfall occurring in that season of the year, and accordingly the last eight or ten years have seen the development and rapid spread of the practice of using winter cover crops in our citrus orchards. At one time or another a large number of different crops have been tried, but in the competition sour, or bitter, clover, Melilotus indica, has gradually demonstrated its superiority until at the present time it constitutes the most important winter green manure crop grown in Southern California. Second in importance ranks common vetch, Vicia sativa, closely followed by Canada peas, both of which, however, have serious drawbacks preventing their more extensive use, in that they are readily attacked by aphis and vetch, the latter also serving as a host plant for the cottony mold fungus. For these reasons the use of vetch and Canada peas as green manure crops has been decreasing year by year, although on certain of the more open and porous soils growers still feel that they constitute the only satisfactory winter cover crops on account of the difficulty frequently experienced in such soils in obtaining a satisfactory stand with the smaller seeded melilotus.

What Is Average Green Manure Crop Worth?

Although most citrus growers will readily admit that the addition of organic matter and nitrogen to the soil, such as is accomplished through the use of a green manure crop, is probably a desirable thing, especially if the cover crop be handed properly, oftentimes the question is brought up of just how great is the value received from their use. To answer this question among others, some 12 years ago the citrus experiment station began a series of experiments on the use of cover crops, the results of which are summarized in Bulletin 292 of the agricultural experiment station, by W. M. Mertz, issued only last year. This bulletin constitutes one of the most valuable publications ever put out from the citrus experiment station, and every orchardist would do well to have a copy which may be obtained by writing to Berkeley or Riverside.

In this bulletin Mr. Mertz, who until recently was a member of the citrus experiment station staff, and who had charge of the cover crop experiments for a number of years, shows by actual measurements that at the end of ten years there is a vast difference in the yield and quality of fruit on trees in the plots planted to green manure crops and those where winter cover crops were not grown, although given the same care in other respects. Moreover, there is a marked difference in size of trees and in general health in favor of the legume green manure plots. In fact the trees on the plots where legume green manures have been annually turned under were found to be superior in every way to those similarly fertilized where no leguminous green manure had been used. Green manuring was shown to result in a total yield at the age of ten years of 68 per cent more fruit. In addition there was 63 per cent more of the desirable sizes on such plots than on plots not green manured, showing a big difference in the size of the fruit. The trees on the green manure plots averaged 30 per cent larger. The legume green manure plots showed the most thrifty tree condition of all as evidenced by only three per cent "mottled" leaves during the 1912, 1913 and 1914 seasons as against 13.5 per cent for the trees on plots where legume green manures had not been used.

A series of plots using legume green manures as checked against plots using cereal winter cover crops, and in addition varying amounts of heavy nitrogen containing fertilizers, upon which various indicator crops were grown, showed that the use of an average green manure crop of Melilotus indica is equivalent to the application of between 500 and 600 pounds of nitrate of soda per acre. At present prices this would be adding nitrogen to the value of $30 to $40 per acre. The average increase in yields of the indicator crops following the use of legume green manures was found to be as follows: potatos, 39 per cent; corn, 45 per cent; cabbage, 44 per cent; sugar beets, 43 per cent; sorghum, 25 per cent, and Sudan grass, 18 per cent.

The Value Aside from Addition of Nitrogen

The $30 or $40 worth of nitrogen added to the soil, however, does not represent the total value of the incorporation of legume green manures in the soil. Of very considerable importance is the addition of the organic matter, entirely aside from its high nitrogen content. The necessity of adding organic matter to our soils to replenish that lost through oxidation and other agencies has been urged for years. A text frequently used at

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Agricultural News Notes of the Pacific Coast

Northern California

Yolo County raisin growers report a crop of 1500 tons, dried.

Red Bluff will ship this year a total of $1,500,000 worth of fruit.

Rain has delayed the finish of hop picking in Northern California.

Anderson reports men and women there making $6.00 to $8.00 a day picking prunes.

Wine grapes in the Lodi district are bringing $50 a ton loaded on cars in lug boxes.

The University Farm at Davis exhibited 61 animals at the state fair at Sacramento.

Both early and late varieties of potatoes in the Stockton district will total 25,000 acres.

K. Myomura of Auburn was fined $50 last week for violation of the standardization law.

Sutter and Yuba raisin growers have announced prices raised slightly to produce a light profit.

Napa County grape growers still hold their crop and if prices are too low it will be fed to hogs.

The early September rains around Chico killed the red spider and benefitted the prune growers.

The annual fall conference of farm advisors will take place at Berkeley October 20 to 24 inclusive.

Grape growers of Napa County held a meeting about September 1 to discuss the future of their industry.

Shortage of cans on account of railroad strike caused the Yuba City and other canneries to close for a time.

Lodi shipped a carload of cantaloupes September 1, quite an event as that district is now mostly in grapes.

Oak farm center, Tehama County, conducted a house to house membership drive on September 11 in an effort to raise the bureau membership to 100 per cent.

The Libby, McNeil & Libby cannery at Sacramento last week prepared 179,000 cans of pears and peaches for the market, a record run consuming 170 tons of fruit.

Fourteen hundred vacant jobs are listed at the present time in the Sacramento Valley by the state employment bureau. There is a particularly strong demand for farm labor.

Nearly 300,000 sacks of potatoes and onions from the delta district of Sacramento County have been shipped into Sacramento City on river steamers and barges during the past six months.

Installation of equipment for the manufacture of powdered milk is being completed at the Northern California Milk Producers Association's plant in Sacramento and this branch of the plant will be in operation early in September.

A large shipment of dehydrated foods has just been made by the Horst Company of Sacramento to the Czecho-Slovak army in Siberia. It is claimed that the saving in transportation costs over ordinary canned food amounted to $20,000.

Children in attendance at the state fair were given all the ice-cold, pasteurized milk they wanted free of charge. It was "fresh from the farm," F. W. Kiesel having shipped 24 of his pure bred Holstein cows to the fair grounds to provide the youngsters with such a rare treat

Central California

California's rice fields doubled the world's output during the war.

Fresno County had over 200 varieties of deciduous fruits at the State Fair.

Aphids are reported very bad in Stanislaus County on blackeye beans.

Watsonville reports very little shortage of cars and apples are on the move.

Do not forget the San Joaquin County Fair opens at Stockton October 6.

Watsonville will pack 3,000,000 boxes of apples, 500,000 more than last year.

Lodi vineyards report no damage from .06 of an inch rainfall on September 7.

A big revival of interest in pheasants is manifested in several parts of California.

Zinfandel grapes at Fresno brought $65 a ton last week and prices are advancing.

A record price for hogs was established recently at Turlock, the price being $20.50.

Santa Cruz County has been suffering unusually heavy from forest fires this summer.

The melon growers about Watsonville are up in arms about the depredations of thieves.

More than 200 delegates attended the San Joaquin Valley Water Congress at Tulare.

Santa Cruz County reports a great scarcity of game. Tree squirrels are much reduced in number.

Apprehension is felt among growers in Fresno and nearby points over the apparent car shortage.

Of 10,000 farm bureau members who voted on the daylight saving law over 95 per cent were against it.

Patterson, Stanislaus County, cattle breeders have been heavy winners at the State Fair for the third successive year.

Three hundred and eighteen grape cars were asked for at Lodi and but 49 were delivered. The shortage is serious.

Merced County farm bureau is forming a marketing department to handle all products under a pooling system.

W. H. Brown, Canadian poultry expert for the government, says that all Europe is very much in need of poultry of all classes.

The California Poland-China Breeders' Association will meet October 3 at Modesto and later hold a winter sale at Davis.

A carload of wool shipped from Merced and Stanislaus Counties to the East brought 60 cents a pound at Boston recently.

Local organizations of walnut growers have been formed at Arroyo Grande, San Luis Obispo County, and at Chino, San Bernardino County. Both will affiliate with the California Walnut Growers Association.

Ground squirrel poisoning in San Mateo is at its height. Approximately 50,000 acres are involved in the operations. Quoting Commissioner Woodworth, "It has been some slaughter!" He also reports a great deal of damage by the gopher in his county, especially noticeable at this time when the dry peas and beans are on the fields.

Southern California

Honey in the south is bringing close to $300 a ton.

San Diego County fair will be held September 24-27.

Redlands shipped about 4,500 cars of oranges this year.

Redlands district reports a 2000 ton peach crop this year.

Riverside has its first wholesale grocery house in full swing.

Imperial Valley farmers are bidding for government hay contracts.

Fillmore wants a civic center but balks at a bond issue of $5500.

Reports from Ventura County still show a very poor bean crop in all parts.

President Wilson will look over his future home site at Santa Barbara this week.

A Santa Ana fumigator died last week from inhalation of cyanide fumes.

Balboa Park, the site of the San Diego Exposition, will be used for the county fair.

The La Verne Orange Association, recently formed, have already elected a manager.

On September 23 San Luis Obispo County will vote on $1,500,000 good roads bonds.

Phillip's Cling was awarded a $100 prize at Hemet for the best peach in the Hemet section.

The Imperial Irrigation District is short of funds and wishes to issue $2,000,000 in bonds.

A model cannery at Chino is under way, to cost $250,000. It will run throughout the year.

The Southern California potato crop for 1919 will be about 1200 cars, as against 1700 last year.

Orange County farmers must pay the county for the extermination of ground squirrels on their lands.

The Redlands district is turning largely to live stock, which bids fair to rival its orange output.

Twenty-five cars of Emperor grapes will be sent East from Strathmore, packed in redwood sawdust.

As the walnut harvest draws near the crop looks almost one-third larger than the best preceding year.

The Sims Cling peach is a growing favorite in the south and will be heavily planted in Riverside County.

Victorville ranchers are going to grow alfalfa for seed purposes, conditions there proving very favorable.

Bonds of Imperial County to the value of $1,500,000 were not sold at date set for no bids were received.

The August report of the Riverside-San Bernardino Cow Testing Association shows 21 cows giving more than 50 pounds of butter fat.

The highest producing cow for August in the Riverside-San Bernardino Cow Testing Association was Aralia, a registered Holstein belonging to A. R. Stalder.

Grape Day at Escondido was a big success as usual. This was the twelfth annual celebration of Grape Day, which always falls on Admission Day, September 9.

Prof. Bliss P. Brown, the new head of the agricultural department in the Pomona schools, addressed the Pomona Fruit Growers' Exchange last week, urging more cooperation.

The Coast and General

An apple grower near Prosser, Washington, has sold his Banana apples at $3.00 a box, orchard run.

China's rice supply is so short that experts say some of that shipped to the United States will have to be repurchased.

Some cotton experts estimate that nearly a half million dollars damage was done to the cotton crop of the Salt River by a recent storm.

Long staple cotton is coming on earlier this year in the Salt River Valley of Arizona than usual. Several gins began operations the latter part of August.

The Arizona State Fair is offering $20,000 in cash prizes for farm products, livestock, poultry and for the women's division at the 1919 fair to be held in Phoenix, November 3 to 8 inclusive.

A new bulletin by Prof. G. E. P. Smith of the Arizona college of agriculture has just been issued. It is entitled "Use and Waste of Irrigation Water," and the number is 88. Like all bulletins of the Arizona station it is free and may be had by writing State Experiment Station, Tucson, Arizona.

Practically all of the 10,800,000 acres of land given to the state of Arizona under the enabling act has now been selected by the state land commission. The last selection was made the latter part of August and consisted of 90,000 acres in Coconino County. Of the lands owned by the state 400,000 acres have been sold.

The County Highway Board of Maricopa County, Arizona, has arranged for a centrally located material plant for crushing rock to build the $4,000,000 system of roads. This plant will be located on the railroad, and rock, sand and gravel will be delivered within a short distance of the distributing points, effecting a saving, it is estimated, of about $1,000,000.

Land owners in Pinal County, Arizona, are united in a concerted effort to build a storage reservoir on the Gila River at what is known as the San Carlos or Box Canyon site. At a very enthusiastic meeting at Florence August 12, 4000 people met and appointed a committee of citizens to get signatures of land owners who would be benefited by such a project

Light to moderately heavy rains fell over the range section of Arizona during the week ending August 11. Temperatures were higher than during the preceding fortnight and the growth of forage plants has been very satisfactory. Without exception reports show continued improvement both in stock and range with an abundant supply of feed and water for the present and an excellent prospect for feed through the fall and winter.

L. M. Harrison, field agent for Arizona of the bureau of crop estimates, states that the present indications are that the values of the agricultural crops of Arizona, exclusive of live stock, will be $47,000,000 this year, an increase of $5,000,000 over last year

One of the big packing firms is to open a branch poultry and egg house in Phoenix. It is claimed that this will enable them to offer better prices than have hitherto been obtained for poultry products and will result in a stimulus of the poultry industry in the Salt River Valley.

Lemon Pruning Hints

By J. P. Englehart

One of California's best lemon tree pruners, that is, judging from results secured, from trees which he has pruned, is J. P. Englehart of Glendora. Mr. Englehart is one of our pioneers and is not advocating the Englehart system without fullest proof that his own trees which he has pruned for many years are real producers, though he frankly says that there are trees which by no system of pruning can be made to bear satisfactory crops. Some of the methods he follows were given before a meeting of citrus growers in 1913. They have been printed in booklet form and from this we quote fully:

MANY years of experience have taught me to select a young tree with a crown about two and a half feet from the ground. It is a good sign if it has two or three nodes or joints. This indicates that it is not soft wood growing rapidly, neither will it produce sucker growth continuously. Large, straggling, light colored leaves should be avoided. Small dark leaves mark the good bearer.

A tree grown in gravelly soil makes more fibrous roots than one grown in clay soil. The roots of the latter are coarse and when transplanted do not grow rapidly.

A few trees of good type planted on my place two years ago are coming up to my highest expectation. They require not a touch of pruning and possess only the absolutely essential leaf-bearing growth; the rest of the tree is fruit spurs properly placed. At three years such trees pay orchard expenses.

By endless attention to pruning, among other things, the average orchard even may be made to pay expenses in three years unless the original buds were absolutely worthless.

In one grove I am particularly unfortunate in having bought poor young trees of doubtful lineage. Such groves frequently look flourishing and even bear good fruit for two or three years. After that there is continued deterioration in quality. The fourth year I employed a reputable budder to rebud the entire grove to good stock. I cautioned him as to thoroughbred buds, but it proved to be of no avail.

The new wood did not look right.

Again the orchard bore good fruit for three years. Then came the gradual deterioration as before. When confronted with the facts the budder admitted that he had budded from sucker growth. He was still convinced that his buds were all right because everybody, as he said, demanded the showy, rapid growth that is characteristic of the water sprout.

Today I have this grove on hand to be once more rebudded. At this same time I had personally selected buds and done my own budding on 25 trees, and not one has failed to produce fancy summer fruit year after year.

Twenty feet apart is the best distance for Eureka lemon trees. The fibrous roots and rootlets that do the actual work invariably seek the open circle of light and the air away from the tree. This circle is narrow; no rootlets are found near the trunk.

If the tree is higher than 12 feet you shade this circle too much and deprive it of air currents. Besides this, the limited rootlets cannot possibly support a larger bearing surface than 15 feet in dlameter and 11 feet high providing you tax the trees still further by encouraging a low crown.

By bearing surface I mean fancy fruit bearing, as it is a well-known fact that fancy lemons are by far the most profitable to market, even when one allows for the extra care, water and fertilizer required to produce fancy fruit. The quantity of fruit is not nearly as important as the quallty. If I trained my trees higher than 12 feet, I should require them to be 24 feet apart.

The best bearing surface is near the bottom, where the wood is strongest. Therefore, I like a tree 15 feet across.

In my immediate neighborhood the sky-scraper idea for the Eureka lemon has been tried again and again and has been invarlably abandoned. Training the tree to a higher crown, say, from four to five feet from the bottom, has also been tried and abandoned by the writer. At Corona, for instance, one can see fine specimens of the Lisbon variety trained high with large bearing surface. These trees yield their fruit during the winter months mostly, at the time when we compete with the Sicily lemon.

It is my experience that the Eureka lemon tree can with care be made into a profuse and constant bearer, from which a large amount of fruit is picked every month in the year. When the high-crown system was tried it was found that the limbs would come down to the ground after all, and be long and barren. There was also a tendency to upright shoots which carried the sap of the tree where it did not produce the finest lemons.

My method of training and pruning is a decidedly modified form of the open center style. The Baronio style may be the better method near the sea coast. At the Leffingwell ranch in Fullerton the open center style was successfully employed some years ago in remodelling orchards. My method eliminates work by preventing the endless sucker growth invariably obtained by leaving a stub to shape the tree.

I cut to a fruit spur, which throws the new growth or energy into that fruit spur and causes no water-sprouts whatever. This fruit spur thus becomes a leader. If white or foreign wood growth should appear in this leader, cut it off again to a fruit spur, but leave no stub. Thus is produced a zig-zag angular growth of pure wood. Thus the leading branches consist of pure bows or angles of about 30 degrees, which eventually prove to be strong braces against winds, and yet admit sunlight and cause the sap to flow just right to produce fine fruit throughout the tree.

Suckers should invariably be pulled off by hand, whenever they form.

One good pruning once a year is sufficient for the older trees, but watersprouts should be removed several times a year.

All white or foreign wood should be cut out from the young trees especially, and not so very much attention be given to balancing, as nature will attend to that.

Try to get a compact, sturdy tree, with dark, small leaves and dark wood, but admit light and air by keeping the centers rather open.

Too much light is injurious. The finest lemons are produced only when they are grown partly shaded.

Prunes Going to Market

FOR THE first time in the history of the industry California prunes were shipped by express last week by the California Prune and Apricots Growers, Inc., to speed the delivery to markets in the United States clamoring for immediate stocks from the 1919 pack.

The shipment consisted of two cars of Santa Clara prunes of this year's crop which were expressed to New York to supply a market which has been swept clean by the excessive demand of the past few months.

According to a statement made today by H. G. Coykendall, manager of the California Prune and Apricot Growers, Inc., the growers organization which it is estimated markets 75 per cent of the state's crop of dried prunes and apricots, early shipments of this year's pack are much heavier than they have been for several years.

The first prunes were sent East the first week of September and shipments in increasing quantity have been made daily since then. In Coykendall's opinion September shipments will be exceptionally large this year with the growers who are members of the association receiving thousands of dollars for their crop before the end of fall.

Though the farmers were given the scare of their lives by this week's storm which threatened them with losses of hundreds of thousands of dollars to fruit on the trays, reports which have been received by the association from practically every prune section of the state show that very little loss was sustained.

Last year the heaviest rains ever recorded in California for September destroyed two thirds of the prune crop and a repetition of last year's loss this fall would have meant a financial collapse of farmers who as it is have had to make one year's crop pay two year's expenses.

The original estimates of a 275,000,000 pound crop will probably be fulfilled unless adverse weather conditions again damage the crop. Of the total crop the association is counting on packing and marketing from 180,000,000 to 200,000,000 pounds, the largest crop the California farmers have had in the history of the industry.

Six hundred new members were recently added to the California Almond Growers' Exchange in the Red Bluff district.

Heider

No Gears to Strip

IN the Heider Friction Drive a strong fibre rim is mounted on the motor flywheel. The power is taken directly from the flywheel by two big metal discs—one to go ahead the other to reverse. The fibre does the driving and the discs pass the power to the drive wheels or belt pulley.

There is no gear stripping—for there are no transmission gears to strip. The tractor is always "in mesh." It is a resistless pull without jerking or vibration. *Seven speeds, forward and reverse*, are provided, all with one motor speed and one lever, for traction or belt work.

15 to 20% Fewer Parts

The Heider Friction Drive does away with clutch, transmission gears, and bevel gears. In all, it means 15 to 20 per cent less parts.

With fewer parts to run it puts *more* power into the pull. A steady flow of *flexible* power—just as much or as little as you want.

It saves repair expense. It adds years to the life of the tractor. And it is so easy to run that boys and girls are operating Heiders.

For 11 years this tractor has plowed every kind of soil, hauled big loads and furnished the power for all kinds of farm machinery. Its success is merited by 11 years of *performance*. You do not have to take a "demonstration" of one or two days as your guarantee of the Heider.

Two sizes, 12-20 and 9-16. Write for catalog of Heider Tractor and Rock Island Tractor Tools; the famous Rock Island Tractor Plows, 2, 3 or 4 C T X bottoms, and the Rock Island No. 38 one-man Tractor Disc.

Rock Island One-Man Outfits
Heider Model D 9-16 with No. 9 Rock Island C T X two-bottom Power Lift Plow directly attached. Below, Heider Model C 12-20 with Rock Island No. 19 C T X two-three bottom Power Lift Plow. Foot-lever control. Automatic power lift.

Rock Island No. 12 Tractor Plow
Successful behind any tractor. Front furrow wheel lift equipped with 2, 3 or 4 Rock Island C T X bottoms.
With Quick Detachable Shares

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Manufactured by
Rock Island Plow Co.
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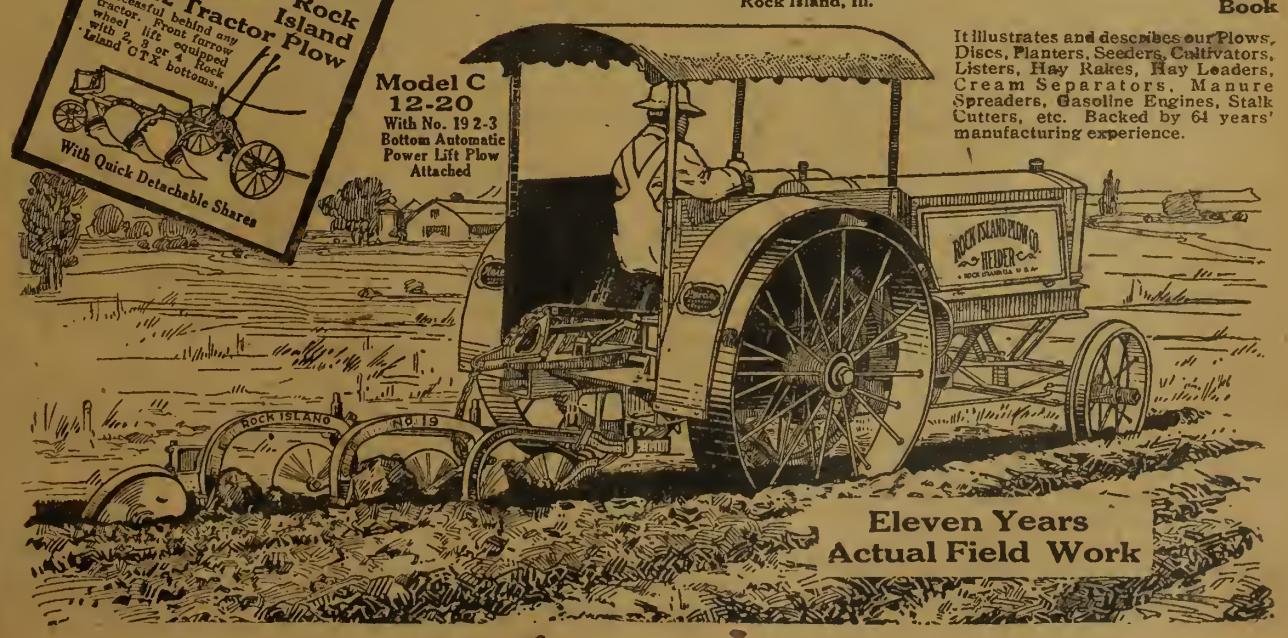
It illustrates and describes our Plows, Discs, Planters, Seeders, Cultivators, Listers, Hay Rakes, Hay Loaders, Cream Separators, Manure Spreaders, Gasoline Engines, Stalk Cutters, etc. Backed by 64 years' manufacturing experience.



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The Motor Truck bought to-day without Electric Starting and Lighting will be out-of-date to-morrow

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Make a husky, enduring Bethlehem the connecting link between your Farm and your Market. Increase your profits by adding to your farm equipment a husky, enduring transportation system.

The economically powerful engine has a pull that will take any load over any road. Electric Starting and Lighting means economy of operation and makes night work easy and practicable.

The Internal Gear Drive is the answer to the bad roads problem. Bethlehem Design and Bethlehem Construction have proved themselves to thousands of farm owners. The nearest Bethlehem Dealer will demonstrate a Bethlehem your way.

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Draws Three Bottoms
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is the descendant of the pioneers of the industry. There has been plenty of time to improve—to correct early weaknesses. And that is why thousands of Huber owners everywhere say the Huber is the tractor that "always keeps going".

The direct spur-gear drive of the Huber by which the transmission system is reduced to the greatest simplicity is a big factor in Huber dependability. There are no bevel gears—nothing but a clutch and spur-gear reduction. Huber high wheels roll easier and afford "more traction grip"; center draft conserves power by avoiding side pull; extra strong materials reduce weight. An exceptionally large portion of the power of the motor is delivered to the draw-bar.

Weight 5,000 pounds; pulls three 14" bottom plows; 12 h. p. delivered to the draw-bar; 25 h. p. at the belt; Waukesha, four-cylinder motor; Perfex Radiator; Hyatt Roller Bearings; burns gasoline, kerosene or distillate; center draft; two speeds, 2½ and 4 miles per hour.

Write for the "Tractor in the Making". It tells the history of tractor development.

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Some Territory still open for Live Dealers.

WINTER COVER CROP

Continued from Page 377.

farmers' institutes and fruit growers' conventions by Professor G. W. Shaw used to be "With all your getting, get humus." It would have been more nearly correct had he stated "get organic matter", for we are now convinced that it is the active organic matter which is of the greatest value to our soils. Not only does this active organic matter add to our humus content and thus improve the physical condition of the soil, but it acts as a source of food for the bacterial flora and provides optimum conditions for their activity. In addition, it plays the very important part of setting free locked up phosphorus and potassium through its decomposition.

Cover crops of course have additional advantages in the way of preventing of erosion on hillside lands, perforation of plowsoles and compact soil formations and absorption of soluble nitrogen present in the soil in fall preventing its loss through leaching by winter rains.

Handling Winter Cover Crop

In growing a cover crop it is of the utmost importance that a good stand be obtained in order to get the greatest benefit. With the great variation in soils in Southern California it is to be expected that methods used in one section will not necessarily prove satisfactory in others. Indeed, it is in the question of how to handle the soil so as to obtain a good stand that the citrus orchardist is at present most interested. In certain sections the opinion is freely expressed that a winter cover crop is not possible on account of the difficulty in getting a stand. Melilotus has shown a wider adaptation than any of the other cover crops and it is the writer's belief that it can be grown practically everywhere if only growers will experiment trying different methods of seeding and irrigating until the right method is found.

In certain of the rocky, porous soils in the foothill belt growers have complained that it is practically impossible to get a stand with Melilotus, although vetch will do fairy well. The difficulty seems to be that the soil takes water so readily and lateral seepage is so slight that it is impossible to irrigate up a small seeded crop like Melilotus. The usual method of broadcasting the seed followed by a light harrowing does not result in a satisfactory stand except right in the furrows where the water wets the surface soil. The writer has talked with several growers located on such soils who have made a success in getting a stand and they all seem to agree that the seed should be planted deeply, down where it gets to the moisture. This can be accomplished by cultivating it in deeply or by drilling. Excellent results with deep seeding on such soils were obtained last season by a number of farm bureau demonstrations in Los Angeles County. A number of suggestions of value have been made by growers for seeding soils of this open porous character. One is to furrow out and irrigate, followed by broadcasting the seed in the irrigation furrows and on either side as far as the water has "subbed". Then later furrows are run between the original ones, and the process repeated. In this way a fair stand may be obtained even on rocky soils. Another suggestion is in the use of a portable sprinkler system, using a small centrifugal pump mounted on a wagon to be installed on a water box, developing enough pressure to force the desired amount of water through a system of hoses provided with sprinkler nozzles at suitable intervals. This suggestion if worked out would add to our list of specialized citrus operators the cover crop irrigator.

The method which under varying conditions has given the best success with Melilotus has been to broadcast one-half the seed on the dry soil mulch before furrowing. The soil is then dragged lightly with a harrow to cover the seed. After furrowing the other half is broadcasted over the furrowed land and then followed by irrigation.

Time of Planting

In order to obtain a satisfactory growth before cool weather sets in, planting should be done not later than October 15. The sooner in, the better will be the growth made. The writer feels, however, that a cover crop planted late is much better than no cover crop at all as the root growth seems to be made somewhat earlier than the top growth and it bears the nitrogen nodules.

Irrigation

It should be borne in mind that, as with the summer cover crop, sufficient water must be available for both trees and cover crop. Although lack of water in the fall does not cause the fruit to fall to any extent, it does have an effect on the size of the fruit. Competition for water between the trees and the cover crop is not desirable. The cover crop must be given enough water to prevent it from com-

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The regularity with which we are receiving orders from growers who have never before used Tizit Spray indicates the serious consideration that is being given the problem of fighting scale and fungus and the cost thereof.

Growers who have used Tizit Spray for five years are a unit in proclaiming Tizit an unqualified success. Their trees are clean and productive and their neighbors have seen convincing proof of their faith in the efficacy of Tizit.

For satisfactory results spray your trees with Tizit and get away from the High Cost of Fumigating.

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Exchange members may be supplied through the Fruit Growers Supply Co.

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ARCADIAN
Sulphate of Ammonia

In a great many cases an application of ARCADIAN Sulphate of Ammonia now will help size the coming citrus crop in addition to prompting bud growth for next season.

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¾ per cent. Made in U .S. A. Arcadian is the great American Ammoniate.

For sale by all the principal dealers.

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Save $300
New Cleveland Tractors
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While They Last
F. H. Stow Tractor Co.
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peting with the trees until the winter rains set in.

With the present scarcity of water in many parts of Southern California the water factor will obviously be of even more importance than in normal seasons. Unless a grower knows that he will be in a position to supply enough water for both trees and cover crop he had better dispense with the cover crop this season. There is hardly a doubt but that such a procedure will be necessary in certain districts this season. The grower would do well to bear in mind that a cover crop competing with the trees will do vastly more harm than good.

Amount of Seed

The following table is taken from Mr. Mertz's bulletin:

Crop	Pounds per acre
Melilotus indica and bur clover	20-30
Fenugreek	35-40
Vetches	70-80
Peas	90-100
Windsor beans	100-200
Lentils	60-70

There is considerable discussion regarding the use of purple vetch as a green manure crop during the last year or two. It is true that it has shown many desirable features in the experiments at the citrus experiment station and elsewhere. Purple vetch has produced almost twice the tonnage per acre and has shown more active growth during cool weather. planted late it has given as good results as Melilotus planted early. Further it is reported to be not so subject to aphis as ordinary vetch. The only hindrance to its widespread use lies in the scarcity of seed, practically none being available for use this season. Some concerted action should be under way looking toward securing an adequate supply of seed of this crop for the use of growers.

CALIFORNIA STATE FAIR

Continued from Page 375.

County. It was a wonderful exhibit of the great fruit producing section which claims to be California's center. The big bale of cotton and cotton in various forms gave evidence that Fresno is a cotton producer. The Fresno exhibit was in charge of H. E. Patterson, secretary of the chamber of commerce, and P. M. Rasmussen, director of exhibits and designer of the Fresno fair booth.

San Joaquin County made a fine showing of vegetabes and a great exhibit of deciduous fruits. The exhibit was nearly under tbe great dome of the building and attracted much attention.

The California Almond Growers' Association had a magnificent exhibit of almonds. In fact, the Association secured observation of Almond Day at the state fair. Plate glass in specially designed cases gave a wonderfully rich effect to the exhibit of fine nuts. The association is managed by T. C. Tucker and the exhibit was in charge of A. Kohner.

The little Kings County cottage made of milo and other sorghums and containing and surrounded by a great exhibit of grapes, raisins and all kinds of fruits and grains, was one of the most attractive little exhibits in the building. It was in charge of secretary Rice of the Kings County chamber of commerce. This entire Kings County exhibit had been placed on board cars and shipped part way to Sacramento and at the beginning of the strike was stopped and later turned back and reloaded on trucks. This caused delay in complete installation of the exhibit, but it was a beauty when done.

Placer County, which claims to produce the greatest varieties of deciduous fruits commercially, carried her variety into her exhibit. The fruits were largely arranged on circular tables in commercial pack. About the borders of the exhibit were various legends similar to "Placer County Shipped 4934 Carloads of Fruit in 1918."

The judges of the plate, commercial pack and feature exhibits of this building were Prof. J. C. Whitten of the University of California; Dr. Geo. P. Clements, director of agriculture of the chamber of commerce of Los Angeles, and John J. Fox. One feature of the judging which gave the contest real value was the California state fair score card. This was issued in duplicate, the original copy being given to the exhibitor for his information. The score cards for packed fruits called for 1,000 points perfection. This was divided as follows: Quality, including flavor, juiciness, aroma, texture, ratio of sugar to acid, 150 points; condition, including insect or disease injury, skin punctures, bruises, limb rub, maturity, spray injury, sunburn, stem, and trueness to type, 150; color, 125; size, 75; uniformity in size, color and shape, 150; or a total score on the fruit of 650. Only 50 points were given to the container. These were as follows: Material, 10; marking, 20; solidity, including nailing, etc., 20. The score of the pack totaled 300 points, thus making the 1,000 on fruit, container and pack. These 300 points were divided as follows: Height of center, 100; height of ends, 60; alignment, 20; compactness, 80; attractiveness and style, 40.

J. W. Kavanagh was director of exhibits, though the big new building which housed the above described exhibits was more directly in charge of Fred Howard, formerly horticultural commissioner of Kings County.

One of the largest and most sought exhibits in the building was that in the balcony and placed by the department of agriculture for California under the direction of George H. Hecke. Every division of the state department was represented, but the rodent control and standardization divisions made the most striking exhibits. The balcony spaces were largely occupied by manufacturers and merchants with interesting exhibits.

The large exhibit building formerly used for machinery and pumping displays, was this year given over entirely to educational activities of the central part of the state. Various schools had remarkable exhibits of vocational and other educational features. The University of California occupied three buildings formerly known as Dairy Products Building, the Dairy Barns and another building connecting these two frame structures. The exhibit of autos and auto accessories, as usual, was in the large tents at the left of the main entrance to the grounds. This exhibit was vastly superior to that of last year, but hardly up to the years before the war.

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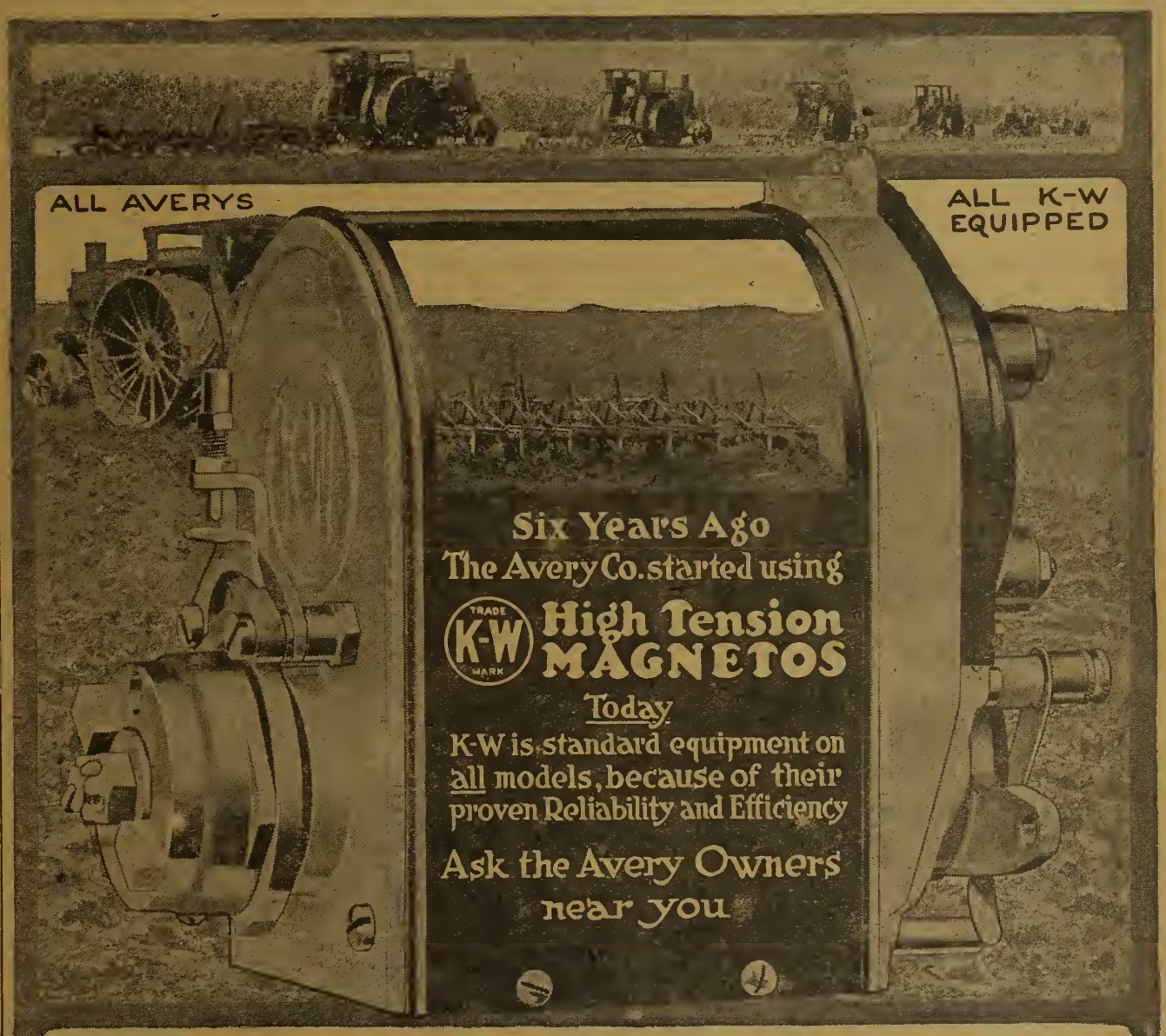
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OWNERS of Avery and other K-W equipped tractors plow at **less cost** because of the efficiency and reliability of K-W Magnetos.

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The K-W Magneto gives a spark so hot, that instant and complete combustion and full power is assured from every drop of fuel, regardless of how poor the grade. This added power makes deep plowing in hard ground easy, and because leaner mixtures can be fired without loss of power, greater acreage is plowed **at less fuel cost.**

Nine years of service **on tractors** has proven K-W Reliability in every weather and working condition.

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For TRACTOR USE
USE a harrow behind the tractor that pulverizes every inch of soil—that prepares a perfect seed bed for the plant roots and increases the harvest. Once over the field gives perfect tillage if you use a
Clark
"CUTAWAY"
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The forged sharp disks of toughest cutlery steel cut deep, thoroughly mix the soil and leave it light, mellow and level. Rear gangs are forced to cut exactly midway between front gang tracks. The CLARK "CUTAWAY" Rigid main frame is made of heavy special steel which keeps all gangs from slewing and trailing.
Even, uniform cultivation—clear to the bottom of the furrow—results. Solid disks are furnished if desired, but cutaway or cutout disks, if of CLARK "CUTAWAY" Quality, do better work. CLARK "CUTAWAY" Double Action Tractor Harrows have adjustable hitch and are made for any size tractor. They represent the perfect results of fifteen years' development of tractor harrows.
Ask your dealer about CLARK "CUTAWAY" Tractor Harrows and other disk implements. If your dealer hasn't them, some nearby dealer has.
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Heavy Service
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Used Successfully
with every
Tractor

Correct Tractor Lubrication

(Continued from Last Week)

Heat Losses Though Cooling Medium

All the heat units derived from the explosive mixture are not utilized in work. The loss through the cooling medium of the average internal combustion engine is approximately from 30 to 40 per cent of the total fuel efficiency. This great loss of heat can be avoided. It is therefore imperative that some method be provided to dissipate this heat and keep the temperature of the engine at the point of safety and efficiency.

If no cooling medium were provided the heat of a continued series of explosions, each of which is over 2000 degrees Fahrenheit, would soon heat the metal parts of the engine to a point where they would seize and render the operation of the engine impossible.

It is very important that the engine should not get too hot, and, on the other hand it is equally important that the cylinder should not be robbed of too much heat. The object of the cooling medium is to keep the temperature of the cylinders below the danger point, but at the same time keep it as hot as possible to secure the maximum power.

There are two sources of heat, one from fuel, the other from friction.

The question of lubricating oil is directly connected with that of cooling, but it is not intended that the lubricating oil shall take the place or perform the duties of the cooling medium.

Cooling

Lubricating oil dissipates the heat of friction generated by the pistons in the cylinders. If the cooling medium fails in its function, the temperature of the cylinders will reach a point where lubricating oil will not keep the surfaces of the pistons and cylinders apart and prevent seizing. If the lubricating oil does not perform its duty correctly the heat of friction is added to that of the fuel, and the cooling medium will not be sufficient to keep the temperature of the motor at the point of efficiency.

Not less than seven per cent of the power developed in the cylinders is absorbed to overcome the friction of the piston, and it is, therefore, necessary that the cooling medium be kept at its highest point of efficiency to enable the lubricating oil to perform its duty.

In water-cooled engines, such as are generally used on tractors, the cylinders are surrounded by water jackets in which a circulation is maintained, either by means of a pump, or in the Thermo-syphon system, by means of the difference in temperature of the water in the jackets and radiator.

Reasons for Overheating

Overheating in tractor motors, practically all of which employ water as the cooling medium, is due to one or more of the following causes:

Inefficient Cooling Medium—Some cooling systems are so closely proportioned that the stoppage of the fan, or sediment in the water jackets or radiator will cause the engine to overheat and the water in the radiator to boil.

Examine the Hose: Care should be taken to see that the hose used for radiator connections has not rotted and small particles of rubber deposited in the cooling system, also that the formation of scale and sediment in the water jackets is not so serious as to impair radiation.

Anti-Freezing Solution: Where anti-freezing solutions are used, in which calcium chloride forms a part of the solution, it causes a deposit to form in the radiator and water jackets which will reduce the heat conductivity of the metals exposed to the air. In this case, the temperature of the water will not be sufficiently lowered while passing through the radiator, to take care of the engine, and continued running will overheat the engine, causing the water to boil.

Cleaning Cooling System: A very effective method of removing the above deposit, sediment and particles of foreign matter from the cooling system is to fill the radiator with boiling water in which from five to seven pounds of sal soda have been dissolved. Allow this solution to stand in the radiator and water jackets for 24 hours, after which it should be drained off and the system thoroughly flushed out with clean water If this is done once a month, it will keep the radiator and water jackets in very efficient condition.

Fan: The fan should always be kept in an efficient condition, care being taken to see that the belt is not slipping and that the blades have not straightened out, as in this case the fan will not draw sufficient air through the radiator to insure proper cooling.

Incorrect Mixture—Incorrect mixture causes more engine overheating than all other causes combined. A rich mixture is a slow burning rather than an explosive one. The heat units vary directly with the proportion of air and fuel taken into the cylinder, and if more fuel is taken in than will form the correct mixture, more heat will be generated than the cooling medium will take care of, which will not only show a loss of power, but will very quickly overheat the engine.

Faulty Ignition or Running with a Retarded Spark—One of the common causes of overheating is due to ignition. A late spark overheats the engine; the charge is ignited after the piston has started downward on the power stroke, consequently the hot gases are not expelled from the cylinder before the second charge is fired. This will continue until the cylinders become so hot that pre-ignition will take place, that is, the gas will ignite before the piston has reached the correct point, resulting in what is known as a "spark knock."

By advancing the spark lever on quadrant, the mixture is ignited before the piston has reached top center so that when the piston does reach the center and starts down, the gases commence to expand at the right moment thereby giving impetus to the piston and forcing the crankshaft around. By the time the piston reaches bottom center the gases are at a comparatively low temperature and are exhausted at the next upward (or exhaust) stroke of the piston.

Always operate your tractor with the spark advanced as far as possible, taking care not to advance it so far that the motor will "knock."

Missing: Missing of one or more cylinders has a tendency to overheat the motor, as the fresh gas is taken into the missing cylinder and ignited by the outgoing charge from the working cylinder, which causes muffler explosions and back pressure on the cylinders which are working.

Incorrect Valve Timing—Overheating from this cause is not common unless the valve setting has been changed after the tractor has left the factory. The flywheel is marked at the factory, and there should be no reason for heating from this source. If too much clearance is allowed between push rod and valve stem, the exhaust valve will not have sufficient opening, and this will cause heating.

Throttled Exhaust and Partially Clogged Muffler—When these conditions exist, considerable back pressure is offered to the exhaust gases with the result that the cylinder is not properly scavenged, and heating will result.

Defective Piston Rings—Broken or defective piston rings or leaky piston rings which will lower the compression will also cause overheating.

Badly Carbonized Engine—A badly carbonized engine will not only cause overheating but pre-ignition with its resultant evil effects.

Dirty Oil—If the body of the oil in the system becomes impoverished through long use and impregnated with particles of metal, carbon and dirt, it will produce a high coefficient of friction, and overheating will result; hence the importance of regularly draining and cleaning of the crankcase and oil reservoir.

Oil of Incorrect Body—If an oil of incorrect body is used, it will cause overheating. Incorrect body means that when the oil comes in contact

with the hot cylinder walls its body will partially or wholly break down and allow the metals to come in contact, resulting in an excessively high coefficient of friction overheating and possible abrasion. Incorrect body also means that if too heavy an oil is used it will not reach the wearing surfaces fast enough, and excessive friction will result, which will overheat the engine in addition to causing undue wear.

Correct Oil Correctly Used

By correct lubrication we mean not only the choice of the correct oil (for the very best oil will not give satisfaction if incorrectly used), but the correct use of the same, upon which maximum efficiency depends.

The average person, if called upon to define correct lubrication, would in most cases define it on a basis of brand of oil and stop there. It is very essential that a high quality brand of oil of the correct grade, suited to the motor, be used. It is equally as important that this oil be correctly used, just as correct operation is necessary in order to secure efficient results from the tractor.

The tractor manufacturer builds an efficient power plant which is designed to do a certain work and do this work economically. This power plant will do all the manufacturer claims for it, only if it is carefully and intelligently operated. To insure this the tractor manufacturer issues educational literature on the care and operation of the tractor. He also maintains an expensive service department, the object of which is to educate operators of his tractors to operate the tractors in such a way that they will get the maximum efficiency out of their machines.

One, if not the most important factor in the lubricating care of the tractor is the draining of the oil from the crankcase at regular intervals and the cleaning of both crankcase and oiling system.

The object of all power plant machinery is to develop the limit of power with the least amount of fuel and the least possible cost for adjustment and repairs. To make this possible from a lubricating standpoint the motor must not only have an efficient lubricating system, but the oil in the system must always be in a clean and efficient condition. The lubricating oil in the crankcase must be changed frequently, for several reasons. First, because lubricating oil wears out in use. In other words, it loses its lubricating value after it has been in the system for a certain length of time. Secondly, fuel which condenses in the cylinder works by the piston rings, thins down the oil and destroys its lubricating value. Thirdly, the oil becomes contaminated with the foreign matter, such as carbon, which forms on the under side of the piston; silica or dust, which enters the crankcase through the breather pipe; and oxide of iron, which comes from the wear of the bearing surfaces of the motor.

The presence of this foreign matter in the lubricating oil acts as an abrasive rather than a lubricant. Lubricating oil is intended to form a film between all moving parts such as bearings, pistons, rings and cylinders, taking the wear instead of the metallic bearing surfaces themselves. It is, therefore, cheaper from every standpoint to wear out lubricating oil than metal, and if a motor is expected to develop its maximum power and show a low fractional resistance in the bearing surfaces, the lubricant must be kept clean and it must have its maximum value.

The question of how often the lubricating oil should be changed can not be absolutely determined from a standpoint of mileage or number of hours running. It depends very largely upon the conditions under which the tractor is operated. In other words, if there is little or practically no condensation of the fuel, the oil will consequently last a great deal longer. And if the oil is fed to the motor in such a way that a minimum amount is thrown upon the inside of the piston, there will be a minimum carbon deposit formed there, which means that the oil will run for a longer time without its lubricating value being impaired.

The operator of every tractor should frequently examine the condition of the lubricating oil in the crankcase, and when there is evidence of fuel or foreign matter in the lubricating oil, it should be drained out of the crankcase. The crankcase should be washed out very carefully with kerosene and especial care taken that no kerosene is left in the crankcase when the fresh supply of oil is put in. This should be done, whether the tractor is operated 10, 30 or 100 hours. Generally speaking, where a tractor has operated under favorable conditions, the oil should be changed every 30 or 40 hours. Where kerosene is used as a fuel, the lubricating oil should be changed daily, as there is considerably more condensation in the cylinders with kerosene than with distillate or gasoline, and it is extremely difficult to keep the kerosene out of the crank case.

It is a well-known fact among engineers and manufacturers of tractors, that the operator who is particular in the care of the lubricating system and the oil very largely increases the economical operation of his tractor, and there is nothing in the operation of a tractor which will contribute so largely in net returns as lubricating care.

WANT FARMERS TO BE FIRST TO CUT

David F. Houston, secretary of agriculture, does not assent to the theory that the prices of farm products should fall before the prices of manufactured commodities fall. He makes this clear in replying to a recent communication in which it was stated that "There must be a drop in prices before there is a drop in wages, and it would seem that the farmer is the man who is going to be first hit."

This theory has been advanced by a number of manufacturers, said the secretary, who continued: "It is clearly an unjust contention. It manifestly would not do to ask the farmers to produce, buying everything that they have to buy from manufacturers at high prices, with the assurance to them that their products will fall in price, and that then manufacturers will consider what they will do with reference to their own prices. Obviously, manufacturers must be willing to make at least a contemporaneous decrease in their prices. It might even be contended that they should make a prior decrease in their prices, since the farmer's operations involve a year and he could not recoup for 12 months, or could not recoup at all, because, on the theory put forth, his products would fall in price. It seems to me that business men must be brought to realize that if we are to get back to the normal, they must set about immediately to do their part, and unquestionably, profiteering in manufactured products must be eliminated."

DEALERS BUYING WHEAT FROM PRODUCERS MUST BE LICENSED

At a recent meeting of the directors of the United States Grain Corporation, at New York City, it was determined to define a little more clearly, what constitutes a retail transaction in the purchase of wheat.

Under the license requirements, retailers are not required to have licenses, but it is now determined that the purchase of wheat direct from the farmer for the purpose of resale, or manufacture, no matter how small the quantity, is not a retail transaction, and that persons engaged in such operations must have licenses. Also, the handling of seed wheat, no matter how small the quantity, cannot be considered a retail transaction, and such dealers must hold license. Dealers in damaged wheat, unfit for human consumption, who may purchase such damaged wheat direct from the farmer must have a license.

Retail dealers who purchase wheat entirely from licensed operators are not required to have license.

THE BEAN CROP OF LOWER CALIFORNIA

United States Consul Sydney Smith, Ensenada, reported under date of July 7:

"The commercial bean crop for export purposes in the northern section of Lower California consists principally of the Lady Washington white beans. Approximately 2000 acres have been planted to this crop this year, being about a 40 per cent reduction from the acreage for the year 1918. The reduction of acreage is due to the export duties and other restrictions imposed by the Mexican governmnet, which have made the raising of this crop unprofitable. This kind of beans is not consumed by the Mexican people and there is no market locally. The present price of beans in California is barely sufficient to pay the export duties here and deliver them to the warehouses at California points.

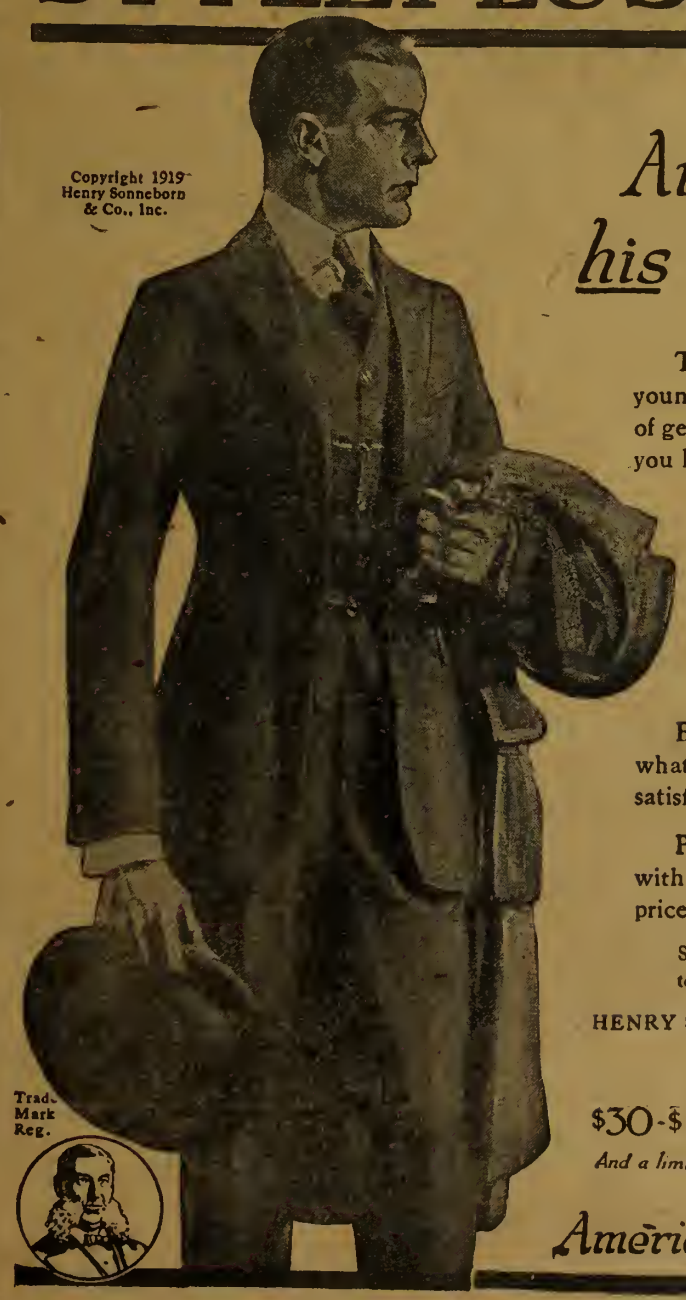
"The yield per acre for the 1919 crop promises to be very light—about two sacks of 110 pounds each to the acre. This is about 50 per cent of the average yield for last year.

"There are about 30 tons of last year's crop in the warehouses at Ensenada at the present time and no possible sale for them. The present crop will not exceed 150 tons, as against 300 tons last year. This entire crop will undoubtedly lie in storage for lack of a market. All beans raised in exportable quantities in this locality are produced by American citizens."

Grape picking time has brought great numbers of workers to the vineyards. Among them are several hundred Indians who come each year to work in the raisin grapes. For these excellent community quarters have been erected near Clovis, consisting of good tents, a six-room building, shower baths and other comforts.

Lodi took first prize on Tokay grapes at the State Fair.

STYLEPLUS CLOTHES



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Styleplus Clothes

America's known-priced clothes

- 100 -
Registered Holsteins
at Public Auction
C. A. Miller Ranch, Ripon, Calif.
Thursday, October 30, 1919

This sale will include a complete dispersal of the C. A. Miller herd, and consignments of choice cattle from Gotshall & Magruder, and H. A. DeWolf.

Splendid A. R. O. cows and daughters of such cows by some of the most highly esteemed sires in California will be found in plenty in this offering, embracing a group of cattle that should command the attention of every prospective buyer at this time.

Catalog in preparation. Write for one.

Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, President. C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneers—Col. Ben A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare.

45 Registered Shorthorns
AT PUBLIC SALE

Roselawn Stock Farm
Henry M. Elberg, Proprietor
Woodland, California
Thursday, October 16, 1919

This will be an offering of some of the most desirable Shorthorns ever offered to the public in the West, including a considerable number of Scotch cows and bulls, and an extra choice lot of Scotch topped females and bulls.

This herd has been established for over a quarter of a century, and has a splendid record as to show winnings, health, and general dependability and character. This sale is a rare opportunity for the purchase of foundation breeding animals.

Catalog on request. Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, President. C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneers—Col. Ben A. Rhoades, Los Angeles; Col. H. C. Cranke, Nezperce, Idaho.

Educating Breeders

in the best methods of caring for and producing high grade Live Stock will be the chief feature of the

LOS ANGELES
LIVESTOCK SHOW
Exposition Park
October 18 to 26

Mammoth Livestock Exhibit—Horse Show—Dog Show—Display of Agricultural Products—Livestock Sales

$55,000 in Premiums

THE POLAND-CHINA FUTURITY

The Poland-China futurity judged at the state fair this year, was, according to a number of breeders present, not only the largest in number of animals shown but showed a decided improvement in quality. The classes shown were junior yearling boar, junior yearling sow, senior boar pig and senior sow, junior boar pig and sow and litter. The State Poland-China Breeders' Association offered a silver cup for the breeder winning the largest number of points, a point representing a dollar in prize money. J. F. Lehman was the winner of the cup. Following are the awards:

Junior yearling boar—1, W. A. Young; 2, McCarty & Starkweather; 3, M. Bassett; 4, J. F. Lehman; 5, W. A. Young; 6, J. W. Wakefield.

Junior yearling sow—1, W. A. Young; 2, W. A. Young; 3, McCarty & Starkweather; 4, W. T. Dice; 5, McCarty & Starkweather.

Senior boar pig—1, Fred Gatewood; 2, M. Bassett; 3, Geo. V. Beckman & Sons; 4, Hale I. Marsh; 5, McCarty and Starkweather; 6, McCarty & Starkweather.

Senior sow pig—1, McCarty & Starkweather; 2, McCarty & Starkweather; 3, M. Bassett; 4, Fred D. Ross; 5, McCarty & Starkweather; 6. M. Bassett.

Junior boar pig—1, J. F. Lehman; 2, J. F. Lehman; 3, J. F. Lehman; 4, A. L. Bassett; 5, W. A. Young; 6, J. F. Lehman; 7, McCarty & Starkweather; 8, A. L. Bassett.

Junior sow pig—1, J. F. Lehman; 2, J. F. Lehman; 3, W. A. Young; 4, A. L. Bassett; 5, A. L. Bassett; 6, Chas. Gatewood; 7, Geo. V. Beckman & Sons; 8, McCarty & Starkweather.

Litter—1, J. F. Lehman; 2, J. F. Lehman; 3, W. A. Young; 4, A. L. Bassett; 5, A. L. Bassett; 6, Chas. Gatewood; 7, Geo. V. Beckman & Sons; 8, McCarty & Starkweather.

THE DUROC-JERSEY FUTURITY

The Duroc-Jersey breeders made a strong show in the futurity classes at the state fair this year, J. E. Thorp capturing premier honors on the get of Freddy You'll Do. It was reported that the futurity next year would have a larger classification. This year only junior boar and son pigs and litters were shown.

The awards were as follows:

Grand Champions at State Fair. Photos by McCurry.

Upper:—Giant Bob, grand champion Poland-China boar, 1919 California State Fair, owned by Chas. Gatewood, Fresno. 2. Sensation Wonder 1st, grand champion Duroc Jersey boar, owned by H. P. Slocum & Son, Willows. 3. Model Defender Lady, grand champion Duroc-Jersey sow, owned by Winsor Ranch, Bonita. 4. Big Mary 3d, grand champion Poland-China sow, owned by McCarty & Starkweather, Modesto.

Junior boar pig—1, J. E. Thorp; 2, W. J. Fulgham & Sons; 3, J. E. Thorp; 4, Greenwood Farm; 5, Greenwood Farm; 6, J. E. Thorp; 7, W. J. Fulgham & Sons; 8, W. V. Bennett.

Junior sow pig—1, J. E. Thorp; 2, J. E. Thorp; 3, W. J. Fulgham & Sons; 4, J. E. Thorp; 5, W. V. Bennett; 6, W. J. Fulgham & Sons; 7, J. E. Thorp; 8, W. V. Bennett.

Litter—1, J. E. Thorp; 2, J. E. Thorp; 3, W. J. Fulgham & Sons; 4, W. V. Bennett; 5, H. P. Slocum & Son; 6, E. J. Weldon; 7, H. M. Berglund; 8, E. J. Weldon.

HUGH NISBET DISPERSES HERDS

One of the choicest western herds of registered Holsteins will go under the auctioneer's hammer on Monday, October 6, at the Jefferson County Fair Grounds, Port Townsend, Washington, when Hugh Nisbet, owner of Netherhall Farm, Chimacum Washington will disperse his entire herd. From a small number of very select females, mated with outstanding bulls, Mr. Nisbet has developed an unusually fine herd. His herd sire Segis Pontiac De Kol Burke 2d, is by the famous Morris bull Segis Pontiac De Kol Burke, whose daughters are making such wonderful records as heifers, and out of Miss Dutch a 30 pound cow that made 1025 pounds butter in one year, she in turn out of Miss Blaney with 1008 pounds butter in one year. The three nearest dams of Segis Pontiac De Kol Burke 2d are all 1000 pound cows with an average of 1039.5 pounds butter in one year. He will be included in the sale along with 20 of his daughters out of good dams. These heifers are rated among the top show stuff of the Northwest and could very well be added to the highest class herd on the Coast. There will also be daughters of and heifers bred to Sir Chimacum Wayne De Kol Paul, who is by Sir Chimacum Wayne, son of the famous daughter of Sir Veeman Hengerveld, Chimacum Wayne Boon, 1067.48 pounds butter in one year. His dam is Sena J 2d Paul De Kol, 1016.23 pounds butter in one year.

Mr. Nisbet will also disperse his choice herd of 25 registered Berkshires that is of a quality in keeping with the Holstein herd. The great boar Birch Baron will go, also the noted sow Princess Beauty 17th and many of her daughters, and many other choice individuals of the breed strongly bred in the blood of Laurel Champion and Masterpiece.

Photos by McCurry.

High Priced Bacon and Worth the Money

Natomas Baron Duke, grand champion Berkshire boar 1919 California State Fair, bred and shown by W. F. Sandercock, Sacramento, sold after the show to Anchorage Farm, Orland, for $1000.

Netherhall Farm

Owned by Hugh Nisbet, Chimacum, Washington

Will Make a Complete Dispersal Sale

50 Registered Holsteins——25 Registered Berkshires

Monday, October 6, 1919, Jefferson County Fair Grounds Port Townsend, Washington

The Holsteins

These cattle are mostly young and include TWENTY DAUGHTERS OF SEGIS PONTIAC DE KOL BURKE 2ND, whose three nearest dams average 1095.5 lbs. butter in one year. Some of these are from 23 lb. 3 year olds, and nearly all are from select A. R. O. dams. Among them are some of the best show heifers in the Northwest.

The females also include daughters of and heifers bred to SIR CHIMACUM WAYNE DE KOL PAUL, whose three nearest dams average over 1000 lbs. butter in one year, and

Granddaughters of Margie Newman
Granddaughters of King Korndyke Sadie Vale

This is one of the most profitable herds of well bred, high class herds in this famous Holstein valley.

The Herd Is Under Test State and Free From Tuberculosis

SEGIS PONTIAC DE KOL BURKE 2ND will be sold. He is a high class individual, and his breeding ranks him among the leading young sires of the breed. He is by Segis Pontiac De Kol Burke, son of the former world's record cow Riverside Sadie De Kol Burke, whose daughters hold the California records for butter production in one year in both the junior and senior two year old classes, one of them being the dam of the bull that sold for $11,000 at Philadelphia, while he himself sired the heifer that sold for $11,200 in the same sale. The dam of SEGIS PONTIAC DE KOL BURKE 2ND is Miss Dutch, with over 30 lbs. butter in 7 days and over 1000 lbs. in one year, she out of Miss Blaney, 1008 lbs. butter in one year.

The Berkshires

are of the very best breeding, including Birch Baron 247923, a boar of great scale and show type. The herd is rich in Laurel Champion and Masterpiece breeding, among the females being such sows as Princess Beauty 2nd and many of her daughters.

A Real Herd of Quality Berkshires

Boats leave Seattle Union Wharf daily for Port Townsend at 12 Midnight and 8 A. M.

Auctioneer:
Col. Geo. A. Gue, North Yakima, Wash.

Owner:
Hugh Nisbet, Chimacum, Wash.

East, West, North, South---Wherever Good Berkshires Are Known

"STAR LEADER"

holds the commanding position of Premier Berkshire sire. This answers the question as to why his get are in such demand everywhere. To meet the demand for daughters of Star Leader bred, we purchased for $1,000

Natomas Baron Duke

the grand champion boar at the state fair. He was sired by the national grand champion of 1917, Baron Duke 201st.

NATOMAS BARON DUKE is one of those long, deep, smooth boars, so universally admired, with a large, deep set ham, four good feet and plenty of bone to carry his weight. Judge Wyman M. Lovejoy, a national authority on swine, said of him, "As he stands today he is a wonderful boar and bids fair to mature into one of the greatest boars the breed has produced."

And yet another great boar was recently added,

Champion Value 10th

by Duke's Champion 12th, from the Barker herd.

With three such outstanding sires, with as good a herd of sows as can be found, ANCHORAGE FARM is in a better position than ever to maintain its position as a breeder of profitable Berkshires.

We can offer bred sows and gilts and pigs of both sexes.

Anchorage Farm is always pleased to answer all inquiries in full. Anchorage Farm guarantee goes with every animal sold.

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A fine straight one, bred right, priced right
S. F. Williams
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Offering four daughters of the great bull Altama Interest, 7 to 10 months old. All from Register of Merit dams.
Guy. H. Miller
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All My Records
Are made under ordinary dairy conditions
The Farmers Cow Is
The Jersey
Young Bulls For Sale
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For Sale
One at the head of your herd will pay big dividends on his cost. Write to
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Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

10 Jersey Bulls
We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.
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El Monte, Cal.

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Sheep on the Ranch

By A. L. Dahl

IN THE days of our grandfathers sheep were found on every farm but in our generation we have come to look upon sheep raising as a specialized industry suitable only for the wide prairies and high mountains. Until the stimulated demand for wool and meat brought on by the war, the raising of sheep in the United States gradually declined, but in 1917 there was a slight increase over the previous year, and this increase is still continuing as the returns from wool are so large that many farmers have started small flocks on their land and the large sheep ranchers have increased their flocks as much as possible.

There is no reason why every farm or ranch of sufficient size to have pasturage should not maintain a band of sheep for they will prove a good investment. Sheep require little attention; they utilize food otherwise wasted and they are very destructive of weeds and other pests. In England, where sheep growing is almost universally practiced, more than 30,000,000 sheep are annually raised on an area less than four-fifths the size of California, and most of these are grazed on arable lands. In California, where unusually good open ranges are found and where climatic conditions are favorable, less than 2,000,000 sheep are grazed, practically all of these finding forage in the high mountains.

Sheep may be kept very economically as they graze over the fields most of the year, and when feeding becomes necessary hay is the chief diet. They yield two crops a year, wool and mutton, and in keeping down weeds in fence corners, along roadsides, irrigating ditches or on summer fallow, have a high economic value. A flock of sheep may be started with little capital, and where there are young boys in the family the presentation of a few head will often start their interest and develop their managing ability.

The wool clip will in a large measure pay for the cost of keeping the ewe. Average farm sheep shear about eight pounds of wool annually, which under pre-war conditions sold for about 25 cents a pound. Before the war early spring lambs would bring about $5 each. Even though the wool would not pay entirely for the keep of the ewe the profit on the lambs would still leave a good margin. As twins are commonly born the increase in lambs should be over 100 per cent. At present war prices for wool, and with large increases in the price of lambs for food, the profits in sheep raising are big.

Due to abnormally high prices for wool the big sheep raisers of the West have during recent years devoted their entire attention to fleece growing, selling only such animals for meat as were found to be poor wool providers. This tendency has been the main cause for increasing the number of sheep in 1917 as in previous years the decrease had been steadily growing.

Students of world wool trade conditions are convinced that future wool supplies must come from farm flocks, as in spite of increasing demands the commercial flocks of the world are not being maintained. At present the bulk of the world's wool supply comes from sheep kept on the agricultural frontiers. In California little housing of any sort is needed, but where winters are longer and more severe some protection from storms is required. Sheep buildings should be dry, well ventilated and free from drafts, but no special provisions for warmth are required.

Lambs kept for breeding stock should be weaned when from four to five months of age. The lambs intended for market, on the other hand, should attain marketable weights before they are five months of age and should be weaned at the time they are sold.

Lambs at weaning time should be kept for four or five days on the old pasture, as they do not fret as much as in a strange place. The ewes should be removed to another pasture as far away as possible from the lambs. If the feed on this pasture is a little scant, so much the better, for this will help check the milk flow. The ewes and lambs should not be turned in together again, for a large amount of milk from a ewe that has not been sucked for two or three days is liable to cause digestive disturbances in the lamb.

At weaning time the ability of a ewe to produce a good lamb is often ruined because the necessary care is not taken to see that she is dried off properly. A little care at this time will be well repaid. Two or three days after the separation the ewes should be milked out. All of the milk need not be drawn from the udder, but enough should be taken to leave the udder soft and pliable. Mark with colored chalk ewes needing no further attention. In about three days the ewes should be milked out again and the drys marked. Further attention should be given four or five days later to those not dry. No effort should be spared to maintain every breeding animal in a sound and useful condition.

The greatest freedom should be allowed sheep in ranging consistent with protecting growing fields or gardens. Sheep are very fond of certain kinds of weeds not touched by cattle or horses, and if allowed to range freely in out of the way corners of the farm or ranch the sheep will consume a large quantity of weeds and waste vegetation, thus turning them into mutton and at the same time destroying bugs, insects and the seeds of noxious weeds that would otherwise scatter to growing fields. Entomologists claim that even if sheep return no direct profit on a farm their presence there is justified by reason of their function in destroying weeds and keeping down insects.

Some interesting experiments were conducted by the United States department of agriculture at the bureau of animal industry's Morgan Horse Farm at Middlebury, Vermont, to determine the cost of raising sheep on a farm. The experimental flock consisted of 51 ewes and two rams, and accurate records were kept of the cost of feeding, rate of growth, etc. At the end of a year it was found that an average of $10.47 per ewe was the gross income, and after charging off all feed costs at market prices there remained a net profit of $1.60 per ewe, and this did not take into consideration the enhanced value of wool. Of the 51 ewes bred, 49 dropped lambs, some giving twins. The wool obtained from the 51 ewes and two rams sheared 325.5 pounds and sold for 38 cents a pound. The government experts reported that in addition to the actual profit derived from each sheep, their economic value was great because of their proclivity to devour weeds and the quantity of manure which they dropped.

California, with its open climate, its wide expanses of unused lands, and the nearby markets afforded for wool and mutton, provides unusual opportunities for sheep raising on ranch or farm, and the industry should be developed in the Golden State.

THE SHEEP SHOW

By W. S. Guilford

The sheep show at the 1919 state fair was a quality show but in numbers it did not adequately represent the industry in the state. Breeders of registered sheep should see to it that many more flocks are represented in 1920. Some remarkably fine sheep, however, were shown.

There are no better Rambouillets anywhere than those of Bullard Bros. This firm won all prizes on this breed.

Ellenwood & Ramsey of Red Bluff showed Corriedales—one ram recently imported from Australia—where this breed originated. Corriedales show splendid mutton and wool making capacity and sell for long prices.

In the Hampshire classes three flocks were represented: Calla Grove Farm, Manteca; Harvey S. Van Lear, Lodi; and the Spencer Ranch Company, Cranmore. This breed is very popular in California and all over the West, and there is room for many more registered flocks of them. The Spencer Ranch Company showed two rams imported from England and

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Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price $1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
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My services are available to all who plan to sell live stock, farm equipment or real estate, and who want the high dollar. Pure bred live stock sales a specialty. Terms reasonable. Write or wire for dates.

When Writing Advertisers, Mention The Cultivator

bought by Mr. Spencer at the Salt Lake sheep sale recently. One of these rams is reported to have cost $1000. Spencer has grand champion ram, Calla Grove, grand champion ewe. Calla Grove had grand champion wether of the show on a grade Hampshire.

I. A. Burrows of Newvilie showed Cotswolds without competition; and the Spencer Ranch Co. showed Romneys.

There was considerable interest in the show of cross-bred sheep made by I. A. Burrows and the Spencer Ranch Company. The former has Merino-Cotswoid; the latter Merino-Romney crosses. Both produce splendid big heavily wooled sheep that are very popular. These sheep are bred aiong similar lines to the Corriedales and are much the same kind of sheep.

Sheep men will demand from the next legislature the million dollar appropriation for new buildings and equipment for the state fair.

"The sheep industry in California is valued at a great many millions of dollars," said Prof. R. F. Miller of Texas, who judged the sheep to the entire satisfaction of all. "You need iots more buildings and a much bigger state fair show."

The California state fair is a big institution and none have a keener realization of this than the newspapermen who report the different parts of the show. Every year the fair is bigger and every year it is better. It is not so many years ago that one man could pretty well "cover" the greater part of the fair, the beef and dairy cattle, horses, hogs and sheep, but now it keeps a person busy with one or two breeds of hogs or with any one or two of the other features of the show. All of which brings up the ever present question of housing, grounds and equipment, all of which is woefully inadequate. The million dollars being asked for by the farmres and stockmen for state fair improvements must be provided.

THE DRAFT HORSES AT STATE FAIR

The show of draft horses was a pleasant surprise. Not only were more horses on the grounds than for a number of years but the quality showed a decided improvement. Professor E. A. Trowbridge of Columbia, Missouri, one of the best known judges in the United States, tied the classes in each breed.

The Shires

Easton and Ward had out a very strong exhibit of Shires and swept the platter clean. Anwick Arthur was returned in fine fettle and went through to the championship over a number of very high class younger horses. The same firm had the champion mare with Blackhawk Chessie, one of the rarest types seen in a Western show ring in years. She is a beautifuliy turned mare with a way of going that is caiculated to down competition. She was given a run for the money in class, however, by her stable mate, Hawton Bounce, a mare with more substance but lacking the flash of the champion. A half-sister of the champion, the yearling, Blackhawk Choice, is a sweet filly that promises much. The Blackhawk horses were sent into the ring in top condition and made a very finished show in each class.

The Percherons

For the fifth time Mr. Bassett of Hanford returned the grey Ithos to be made champion, a record scarce equalled at any show by any exhibitor. The 11 year old stallion retains the same degree of quality in underpinning that has sent him to the top in the past and time has not affected his straight and true way of moving. N. Thompson of Patterson showed a particularly attractive lot of young stuff remarkable for their quality and cleanness of joints. His three year old, Sensation, a growthy colt with a pleasing top and a trot that will attract in any company was chief contender for the championship, but the judge preferred the older horse on account of greater substance.

James Marwick of Santa Barbara had the champion mare, Fredora, a daughter of Superior. H. S. Learned of Stockton also exhibited.

The Belgians

N. Thompson and the Merritt-Bowers Company of Tulare made the Belgian show. The latter firm had the first prize aged stallion with the big, bold going, Stevenot. Thompson was first and second in the three year old class and his winner, Labaurer was made champion. Merritt and Bowers had the champion mare, Raby.

The Clydesdales

O. H. Brandt, Sheliville, was the only exhibitor of Clydesdales.

THE MILKING SHORTHORNS

What was declared to be the best show of Milking Shorthorns ever held in this state was provided by five exhibitors. Classes were better filled than usual and the quality was a surprise to all who have not watched the development of this breed in California.

There is much interest in Milking Shorthorns and the show was a credit to the promoters of the breed. Thos. Harrison of Santa Rosa had things his own way for the bull champion and divided the female championships with Alexander & Keliogg of Suisuin. John C. Burns of Texas, who judged the classes, spoke very highly of the exhibits.

Awards on this class were by mistake placed in first column of Page 355 of last week's issue just after the comment on Beef Shorthorns and before Beef Shorthorn awards.

CHOLERA KILLS FEWER HOGS

According to records of the United States department of agriculture for the 13 months from April 1, 1918, to April 30, 1919, hog cholera killed 2,815,004 hogs valued at $62,042,688.16, in the United States. This is the lowest loss by numbers for a similar period in the live stock history of the United States, but on account of the high price of hogs the monetary loss was heavy. For example, during the year ending March 31, 1913, hogs numbering 6,064,470 and worth $58,833,653 died from cholera, while the next year the disease took 6,304,320 hogs worth $67,697,461.

Department experiments show that timeliness in vaccinating hogs against cholera is all important. When exposed hogs were vaccinated while still apparently healthy, losses amounted to only four per cent, but when vaccination was deferred until the animals showed external signs of sickness, losses averaged nearly 29 per cent. This shows that the man who puts off the preventive treatment until his hogs are sick with cholera stands only about one chance in seven of preventing fatal results. It is important, also, to maintain hog yards and barns in clean and sanitary condition.

KLAMATH RIVER COW TESTING

The July report of the Klamath River Cow Testing Association shows 23 cows giving above 50 pounds butter fat for the month. The highest record was held by a grade Jersey belonging to U. M. Del Ponte, which produced 71.1 pounds butter fat from 1271 pounds milk testing 5.6 per cent. Two other cows came about the 60 pound mark; another in the herd of Mr. Del Ponte giving 61.9 pounds fat, the second a grade Jersey belonging to A. W. Green, which produced 61.4 pounds.

AUGUST RECORDS IN ALAMEDA COW TESTING ASSOCIATION

The Alameda Cow Testing Association reports 15 cows which have produced during August more than 45 pounds butter fat or 1200 pounds milk. Bernetta, a registered Holstein of the Koopman Dairy Company, carries away the honors with 69.62 pounds fat to her credit. The next highest record is held by a grade Holstein belonging to the Innis Dairy Company, which gave 59.94 pounds. Third in the list is a registered Holstein, the property of Mrs. F. Stenzel, which gave 58.91 pounds fat.

CULL POTATOES PRESSED FOR SWINE

Dried pressed potatoes, when fed in combination with such materials as oil-meal, fish-meal and tankage, rich in protein, produce rapid gains and excellent finishing properties. Why not utilize unsalable, cull vegetables this way, instead of permitting them to rot? Every pound fed to swine is profit.

50 Registered Holsteins 50
at Public Auction

Having leased their ranch, Agee Bros., owners of Paragon Herd, Brawley, California, will sell at public auction 50 registered Holstein cows, heifers and bulls, from their highly bred herd. The sale will be held on the

Harold Bell Wright Ranch
Meloland, Imperial County, California
Wednesday, October 8, 1919

All of the bred females in this sale are in calf to TOYON FAYNE VALDESSA, who is by the 41 pound bull King Valdessa and out of a 30 pound 4 year old daughter of King Hengerveld Aaggie Fayne, sire of some of the greatest short and long time heifers of the breed.

A Great Offering of Bulls

There will be a good selection of highly bred young bulls in this sale, many of them sired by TOYON FAYNE VALDESSA and out of some of the best cows in the herd. Seldom have dairymen and breeders been offered such a range of selection in good young bulls in a Southern California sale.

Every Animal Guaranteed to be a Breeder

Catalog free on request.

Note:—The sale will start promptly at 10 A. M. Parties going in by train get off at El Centro, where conveyance will be found to sale.

Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, President. C. L. Hughes, Sales Manager, Sacramento, California.
Auctioneers—Col. Ben A. Rhoades and Harold B. Rhoades, Los Angeles.

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam: ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—	
Milk 338 days	18,849.40
Butter	866.28
At six years—	
Butter seven days	34.13
Milk	532.40
At five years—	
Butter seven days	28.85

She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.

Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho
Anoakia Breeding Farm
Santa Anita, California
Anita M. Baldwin, Owner W. H. Taylor, Supt.

WHERE TO BUY YOUR
herd bull. We can be of material assistance to you in solving this question.

Sir Veeman Korndyke Pontiac

Our senior herd sire is a son of Sir Veeman Hengerveld, the sire of more 30 pound cows than any living sire. Five other sires bred for production. A good sire will increase your milk production. We have increased ours 100 per cent the past two years. We can sell you a young bull at a very reasonable price.

BURR FARM, Los Angeles, Calif.
Breeders of Registered Holsteins
Farm at E. 26th St. and Downey Road
Business Address, 8th St. and Towne Ave.

GOING FAST, SO ACT QUICKLY

Five young Holstein bulls have left Sunnyside Farm past month to head other herds. We have for sale a few select sons of Sir Veeman Korndyke Pontiac by Sir Veeman Hengerveld, the sire of more 30 pound cows than any other living sire. Full description and price on request.

R. F. Guerin Breeder of Holsteins Visalia, Calif.

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

California Cultivator
Costs $1 per Year

Kings County's Best

Hanford

Saturday, October 11th

Kings County Poland-China Breeders

Have won an enviable reputation. Each sale adds lustre to the preceeding. In this sale will be sold 80 head of sows, gilts and boars.

The bred sows and gilts will be bred to the outstanding boars of Kings County. No one can afford to overlook such an opportunity as this presents.

Come to this sale for your money making Poland-Chinas.

Write to Fred D. Ross, Hanford, for your catalog.

Ben. A Rhoades, Los Angeles, Auctioneer

Top Sale of the Season

Bassett, Crawshaw and Ross

Will Sell

Tuesday, October 4th, at Hanford, Calif.

75 Poland-China Bred Sows and Herd Boars

The sows will be bred to King's Timm, Model Fellow Jr., King's Gerstdale Jones, Big Timm, King's County Buster and Some Price.

The sows are by California Gerstdale, Rossmeade Bob, Model Fellow and Model Chief.

Animals in this sale represent the greatest combination of proven blood lines ever assembled in one sale.

You will find in this sale real pork makers as well as foundation breeding herds.

Address Fred D. Ross, Hanford, for catalog.

Ord L. Leachman, Auctioneer

—— EVERY ANIMAL IMMUNIZED ——

We Breed Champions

We won at state fair, 3rd and 4th junior yearling boar; junior yearling sow, 1st and 4th; aged herd 1st; herd bred by exhibitor, 3rd; get of sire, 3rd; produce of dam, 2nd; reserve senior champion sow and reserve grand champion sow. In futurity, junior yearling boar, 1st and 5th; junior boar pig, 5th; junior yearling sow, 1st, 2nd and 6th; junior sow pig, 6th and 7th; litter, 3rd.

All bred by us except one.

J. F. Lehman won in junior boar pigs, 1st, 2nd, 3rd and 4th, junior sow pig, 1st and 2nd; young herd, 1st; herd bred by exhibitor, 1st; get of sire, 1st; produce of dam, 1st; junior champion boar, junior champion sow. In futurity junior boar pig, 1st, 2nd, 3rd, 6th; junior sow pig, 1st, 2nd, 5th; litter, 1st, 2nd. His foundation animals bred by us, 90 per cent of his winnings on get of GOLDEN STATE KING.

N. K. Horan won 2nd, 3rd, aged boars on animals we sold him.

This is practically the same as we won last year. We are breeding the type of Poland-Chinas the judge pronounced the correct type. Young stock and foundation herds for sale. We will be pleased to write you full particulars.

W. A. YOUNG Lodi, Calif.

Let's Go

We will offer at Public Sale our complete herds of

Poland-Chinas

Tuesday, Sept. 30, 1919

Hanford, Calif.

The animals in this sale represent the greatest blood lines of both East and West. Included is a daughter of the famous boar, THE YANKEE, and four of her litter.

16 Bred sows, 16 gilts, 26 spring pigs, herd boars and young boars just ready for service.

All sired by boars with a national reputation.

Remember the Date, Sept. 30th.

Dimmick Bros. and C. G. DeRaad

Lemoore

Catalog now ready.

Geo. W. Bell, Tulare, Auctioneer.

Sale at 10:30 A. M.—Lunch at Noon.

The Best Investment For The Farm

Buy a Bred Sow at the Poland-China Sale of

Marsh and McCracken

Saturday, Oct. 4th, 1919

Modesto, Calif.

A better investment cannot be found—one of these sows will return in profit several times her cost. For the past eight months we have been selecting the animals for this sale and have paid particular attention to size, bone and blood lines. They will be bred to boars unexcelled on the Pacific Coast, such as Kings Big Bone Leader, the most popular boar on the coast; Major Hadley Wonder 2d, a sire of prize winners: Blue Valley Big Bone and others.

If you want to make money in the hog business here is your greatest opportunity. All animals cholera immunized.

For catalog address

Hale I. Marsh Modesto or **Les McCracken** Ripon

Geo. W. Bell, Tulare, Auctioneer

LIVE STOCK MEN PLAN CENTRAL ORGANIZATION

A plan for organizing the purebred live stock interests of California into one big organization for the mutual welfare of the industry was launched at a meeting held at the close of the state fair. The organization will be perfected with a gathering to be held during the California International Live Stock Show at San Francisco during the first week in November.

Many matters vitally affecting the entire purebred business arise quite frequently in this state without any central body to take care of them, so it was decided by a hundred or more stockmen showing at the state fair that they had better get together. Legislation in which all have a kindred interest can best be handled in this way, and many arrangements at the live stock shows and fairs can be adjusted to meet the requirements of the breeders providing they can make their wants known in proper shape.

It is not the purpose of the contemplated organization to in any way assume any of the functions of the already established breed bodies or associations of different branches of the live stock industry, but to act upon such matters where the interests of all are equally concerned.

Each live stock and poultry asosciation will be invited to send two delegates with credentials to the San Francisco meeting, at which time a constitution and by-laws will be adopted.

Prof. J. I. Thompson of the University of California presided over the meeting.

PURE BRED SALE

The Southern California Fair Association will hold its fair at Riverside, October 7-11, and is featuring one event which will prove of lasting benefit to the live stock industry of the state. It has secured consignments of pure bred dairy and other animals which will be sold at public auction on Friday and Saturday of fair week. Secretary Van Pelt writes:

In this sale will be some 20 bred heifers from Geo. A Smith & Sons' ranch at Corcoran. There will be about 18 Guernsey cows and heifers from the Palo Alto ranch and a fine string of Jerseys from some of the best herds in California, and Shorthorns from the Hall Ranch at Perris and from recently received Eastern stock. Goats will also be included in this sale and some of the best bred animals in the state are listed.

In the swine sale some splendid animals will be offered. There will be bred Duroc, Poland-China, Hampshire and Berkshire gilts.

Elliott-Brant is consigning some very fine stuff. Frampton Brothers of the Arden Dairy, at El Monte, will give us a half a dozen fresh Jersey heifers, and the other stock comes from the best ranches.

Col. W. C. Lookingbill, who will cry the sale and knows this class of stock, has personally inspected nearly all and reports "absolutely all right stock."

QUALITIES THAT MAKE FOR SUCCESS

No great success can be hoped for without courage, persistence, enthusiasm and resourcefulness. In addition to these, there is such a thing as the habit of success. A man possessed of these attributes can undertake and carry forward to success an enterprise that would fail in the hands of one less favorably equipped. Some men don't recognize such a thing as failure. They have such a masterful way of meeting and overcoming obstacles, as to compel success under almost any conditions. The man who "wonders if he will succeed," who will "try it and see how it goes," is quite likely to fail. His mental attitude favors failure. Not so with the man who knows he will succeed. Study the situation carefully and thoughtfully; let the decision be a wise one; but, once it is made, never court failure by doubting.

Fortunately, these success-attributes are capable of cultivation.

GLOBE "A1" FEEDS

-Judge them on Business Principles!

FEED FOR SWINE, STOCK AND POULTRY

ASK YOUR DEALER

Auction Sale

OF

PURE BRED LIVESTOCK

AT

Southern California Fair, Riverside

To Be Held on Friday and Saturday of the Fair—October 10 and 11.
Sale to Commence Promptly at 9 O'clock.

This presents a wonderful opportunity for ranchers and stockmen in Southern California to secure high bred leaders and put the very best blood lines in their herds.

30 head of Guernseys
40 head of Jerseys
50 head of Holstein
20 head of Shorthorn

From the best herds on the Western Coast. Wonderful milk and butter producing records in the lines of this stock. An imported Guernsey Bull and Heifer from the Palo Alto Farm.

50 head of Durocs
50 head of Poland-China
20 head of Hampshire
15 head of Berkshire

In this list are bred sows, and gilts from some of the best herds in the state.

Many purebred Toggenburgs, Saanans, and Nubian Goats will be sold at this auction. None but choice animals will be offered.

Thoroughbred Horses of both draft and driving breeds will be sold at this auction.

Don't miss this sale, whether you expect to buy or not. Come and see class of stock offered. Get your name on the mailing list for catalogue.

W. C. Lookingbill, Sales Manager
or
W. W. Van Pelt, Secretary
Southern California Fair, Riverside

Raising the Standard of California Bacon

MONTELENA HERD

Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

A. L. TUBBS CO.
Calistoga - California

BIG MODEL FELLOW

The boar without a fault. Last year he was first in senior pig class. This year at State Fair he was first senior yearling and Reserve Grand Champion boar. His picture shows his quality. He is high, long, deep and as smooth as a young pig. Notice how he stands on four good feet set squarely on the four corners.

J. F. McSwain, Merced, Calif.

Wakeen Herd

The home of the Grand Champion Poland-China boar of California. Young stock by King's Big Bone Leader is limited—get your order in early.

Les McCracken Ripon, Calif.

Bred Sow Sale in October

CAUTION

Do Not Be Deceived

There is only one GENUINE O. M. FRANKLIN Blackleg Aggressin (commonly called Vaccine).

Beware of imitations. You cannot afford to have anyone experiment on your animals.

Accurate use of the GENUINE O. M. FRANKLIN Blackleg Vaccine positively protects against Blackleg.

Be absolutely safe in using the ORIGINAL and GENUINE manufactured by THE KANSAS BLACKLEG SERUM CO., under the direct supervision of Dr. O. M. Franklin the ORIGINATOR.

This Seal on Every Bottle

The Kansas Blackleg Serum Company

Amarillo, Texas; Denver, Colo.; El Paso, Texas; Ft. Worth, Texas; Kansas City, Missouri; Oklahoma City, Oklahoma; Phoenix, Arizona; Pierre, South Dakota; Salt Lake City, Utah.

125 E. Main St., SANTA MARIA, CAL.

GUERNSEYS

196 — 368

The first figure represents the average production of a grade herd in Minnesota before Guernsey bulls were used. The second figure represents the average production of the same herd after Guernsey bulls had been used for twelve years. The improved herd is making him prosperous. Which kind is your choice?

The American Guernsey Cattle Club
Box C 35, Peterboro, N. H.

QUALITY & ECONOMY & QUANTITY

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

Brighton Farm Herds

Registered Shorthorns
and
Berkshires---Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

California Breeders

have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

CALIFORNIA BREEDERS SALES & PEDIGREE CO.,
C. L. HUGHES, Sales Mgr. Sacramento, Cal.

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

MACHINERY
OF EVERY DESCRIPTION
Bought, Sold and Rented
BUTTRESS & McCLELLAN
205-7 N. Los Angeles St., Los Angeles

Farmers-Write for this FREE BOOK

It tells you of the most up-to-date methods of building a Farm Power House. It is full of illustrations; shows many machines and Line Shaft arrangement--cooling devices, etc. Blue Prints of any plan you want FREE--if selected from this book. Write for it.

Cedar Rapids Foundry & Machine Co.
Dept. 751 Cedar Rapids, Iowa.

California Wonder

KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets

Jacks and Jennets for sale at all times. Come and see them.

John Burrell

R. F. D. B. Box 74
Hanford, Kings County, Cal.

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

IT IS HARD

to find two greater sires than

Matchless Big Bob and Lakeside Defender

in any herd of Big Poland-Chinas. From our herd of large sows we are developing a fine lot of spring pigs, some of which we will sell reasonable and guarantee satisfaction. Write for particulars.

Geo. V. Beckman & Sons, Lodi, Calif.

The Yankee, Jr.

Represents years of successful breeding big type Poland-Chinas. The Yankee Jr. is typical of his eminent sire. Several of his sons have gone to the leading eastern herds. California breeders can secure this blood in my big type bred sow sale September 17th.

JOHN BERNSTEIN Hanford, Calif.

Largest Winner at State Fair

Poland-China Futurity

In junior boar pig class I was 1st, 2nd, 3rd, 6th. In junior sow pigs 1st, 2nd, 5th. On litter 1st and 2nd. These, together with my winnings in the open classes, places the stamp of approval on the kind of Poland-Chinas I breed.

I have some young boars, real prospects, the kind you want to head your herd, that I will sell. Worth the money. Write for particulars.

J. F. Lehman **Lodi, Calif.**

Blue Valley Model

Our junior herd boar comes from a long line of strictly big type breeding. Individually he is all we could ask. We sell big type Poland-Chinas that give satisfaction. Write

Poland China Ranch H. B. Peake, Mgr.
San Bernardino, Calif.

Big Type Poland-Chinas

that are strictly big type. Big type sires—big type dams produce for me real big type animals. Usually sold down close but frequently have an exceptionally good one for sale. It will pay to keep in touch with me.

Eugene Miner Lodi, Calif

The Pacific Herd of Big Type Polands.

Herd sire, King Hadley and A Wonder blood lines.
A few classy 5 months' old boars for sale.
Satisfaction or money refunded. Prices reasonable.

Mrs. C. H. Andrews

Route 1, Box 46. Modesto, Calif.

BERKSHIRE BREEDERS HOLD BANQUET AND MEETING

The Berkshire hreeders and their guests banqueted at the Sacramento Hotel, Sacramento, the evening of the second of Septemher. President Humphrey presided and spoke on the results accomplished in the holding of the community sales the pats year. Wyman N. Lovejoy of Illinois gave a short talk complimenting the hreeders on the class of Berkshires they were hreeding here in California. Other speakers were J. Francis O'Connor, Senator Leavitt, W. F. Sandercock, James Mills, J. I. Thatcher, Prof. J. I. Thompson, H. C. Muddux, Ruland Hardy, A. H. Keane, George Upham, Ord Leachman, T. F. McConnell and B. S. Bennett. A resolution was passed requesting the legislature to suhmit to the people a hond issue of $1,000,000 for improvements on the state fair grounds. The organization also passed a resolution thanking Judge Lovejoy for his efficient judging at the state fair. Following the banquet a meeting of the hoard of directors was held and it was decided to hold a bred sow sale in the southern part of the state some time this winter.

POLAND-CHINA BREEDERS HOLD ANNUAL MEETING

The Poland-China hreeders held their annual business meeting at the Travelers Hotel, Sacramento, Wednesday evening, September 3. General promotion plans were discussed and it was decided to hold a bred sow sale at University Farm, Davis, during stockman's week next winter. Subscriptions were taken for a general publicity fund and $1000 raised for this work. A resolution was adopted requesting the legislature to permit the people to vote upon the issuing of $1,000,000 in honds, the money to be used in huilding new buildings and making needed improvements on the state fair grounds. A meeting of the association will he held in Modesto the evening of Octoher 4, just prior to the Marsh and McCracken sale, that they may meet the farmers of the community and try and interest them in Poland-Chinas.

Three cups will he offered next year, one for the state futurity, one for fat barrow under one year and one for fat harrow under six months. The following officers were elected for the ensuing year: President, Wm. Bernstein; vice president, Geo. V. Beckman; secretary-treasurer, A. D. McCarty. Directors, M. Bassett, A. J. Elliott, Fred Gatewood, E. Miner and R. J. Yates.

ESTIMATING SILO CAPACITIES AND SILAGE WEIGHTS

The extensive use of silos is responsible for numerous calls for information regarding the capacity of silos and for an estimate of the weight of silage under a variety of conditions. The common method of making such estimates is by the use of tahles of silo capacities puhlished hy silo manufacturers and hy experiment stations. These tables are hased directly or indirectly upon a tahle puhlished by King of Wisconsin in 1893. Recent investigations show that even when these tables are used according to the directions of the originator, the results are too high, hut as generally applied the tonnage is often estimated 25 per cent too high. The Missouri and Kansas agricultural experiment stations have taken the weights of silage in 32 silos, representing four seasons. From these figures it is learned:

That the tonnage of silage is usually estimated too high hy tables in common use.

That the weight of a cubic foot of silage at the time filling is completed varies widely, according to depth of the silo, percentage of water present, proportion of grain, thoroughness of packing, rate of filling, and diameter of the silo. In silage that has had time to settle, the method of filling will be of minor importance as influencing the weight, hut all the other causes for variation still exist.

That a tahle used to estimate the capacity of a silo or the weight of silage at the time filling is completed is not adapted to estimating the weight of settled silage.

That on account of the many complications influencing the weights of silage it is impossihle to give any estimate of weight that is more than an approximation. When silage is bought or sold it is recommended that it be weighed whenever possihle rather than to estimate its weight.

CREAM SEPARATOR EXHIBITION AT UNIVERSITY FARM

A cream separator exhihition and demonstration on the afternoon of October 6 in connection with the creamerymen's short course at the University of California Farm from Septemher 29 to November 8 is announced hy the dairy industry division of the University Farm.

Manufacturers of the various cream separators to he on exhibition in the dairy huilding at the state fair have heen invited to send representatives to point out the desirahle features of their respective machines and to demonstrate the use of the equipment in actual cream separation. Persons interested in dairying whether attending the cream short course or not are invited hy the University of California to be present for the exhihition.

MARKETS LAMB BY PARCEL POST

A sheep raiser who sends his meat to market through parcel post tells the Arizona college of agriculture how he does it:

"In the first place the lambs should be fat, and the fat should he put on quickly, through the use of the widest variety of feeds. They should he butchered right, that is case skinned and neither the hands nor the wool should touch the carcass while it is still warm. The kidneys should he removed, in warm weather.

"I split the carcass down the middle with a saw and divide the halves into quarters, leaving two short ribs on the hind quarters; wrap the meat in white cloth, then in paper and then in burlap. I use a return shipping tag and the customers may return the wrapping in good condition. If they do not, I charge them up with it at the end of the month.

"I send meat 85 miles hy auto stage, but cannot as a rule supply the local demand so keep close to home. Our trade has developed out of our custom of taking a roast leg of mutton to picnics or to celehrations on the Fourth of July or other holidays. I know how to dress the meat and my wife knows how to cook it."

SELECT SORGHUM SEED IN FIELD

A great improvement may he made in the sorghum crop if careful seed selection is practiced. Increased yields and improved quality of grain and forage are hoth possible. In most sorghum fields today one can find great variations in the plants. Some are very short; others are very tall; some have many suckers; others have none; some have large, compact, well-filled heads; others have loose heads containing but very little seed. The only way to secure uniformity in the crop is to pick seed from those plants which have the desired qualities.

Before the main crop is harvested the field should be gone through and the seed gathered. Choose large, compact, well-filled heads from thrifty plants of uniform height. Many sorghum plants have large heads, which if examined closely, are found to he very loose, poorly-filled, and consequently yield little grain. Such heads should never be saved for seed.

After picking spread the heads out to dry on clean ground, on the barn floor, or some similar place. Stir the heads frequently with a fork to insure thorough drying. Heating will always occur if moist heads are piled together and left untouched. When thoroughly dry, the heads may be thrashed and the shelled grain stored, or the dried heads may be placed loosely in grain sacks and hung in a dry place.—G. S. Ray, Colorado Agricultural College.

ANTHRAX WELL UNDER CONTROL NORTH OF SACRAMENTO

The state department of agriculture has had two men investigating anthrax conditions in Glenn, Colusa, Butte and Sutter Counties. Dr. Iverson, chief of the hureau of animal industry, has referred to Director Hecke a detailed report which shows that the disease in these counties is now well under control and does not appear to have made as serious inroads as occurred last year.

Herd Building is Dairyman's Problem

Dairy farming consists in more than producing milk; it includes the raising of heifers to replace animals in the herd that must be discarded because of failure to breed, old age, sickness or death, says W. W. Swett of the University of Missouri college of agriculture. The dairy farmer who pays the greatest attention to the raising of calves is usually the most successful.

According to recent reports there are more than twenty-three million dairy cows in the United States. The average productive life of the dairy cow is not more than six years, which means that the farmer with 12 cows must have two heifers coming into milk every year to maintain the number of animals in his herd. It means also that the whole number of cows in the United States must be replaced every six years and that approximately four million must come into maturity each year in order to maintain the number of cows in the United States. This number does not provide for increasing the total to meet the demands of the ever growing population of the country. Not only is this population increasing, but a knowledge of the value of dairy products has brought about a greater consumption, the demands for which must be met in some way. The cow does not usually become productive until she is at least two years old. The number of unproductive dairy heifers to be maintained in an immature condition is approximately eight millions. It costs about $70 for feed to raise a dairy heifer to the age of two years. This means that the farmer with 12 cows must of necessity raise two heifers each year, or, that he must at all times have on hand four unproductive heifers. At $70 a head for cost of feed alone, this represents an investment of $280, simply to insure maintenance of the number of animals in the herd. The dairy industry in the United States has approximately $560,000,000 invested in these unproductive animals. Regardless of the cost, the dairy business must be maintained and these heifers must be raised.

There are two methods of replacing animals discarded from the herd; one is to buy heifers or mature cows on the open market, and the other is to raise the heifer calves which are dropped in the herd. The former method requires perhaps less effort and less time and attention on the part of the dairyman, but it has serious drawbacks.

First, it is expensive; particularly because the good cows, which are the desirable ones, are not for sale except at very high prices, while the undesirable ones, or "culls," are on the market at a much lower figure. It is readily understood that the man who goes to the trouble of raising his heifers to sell, does so only when he can realize a profit. The buyer pays, therefore, the actual expense of raising the heifer, plus some profit. Even after going to all the expense of searching out the heifers, transporting them to his farm and paying a good price for the privilege, the farmer is almost sure to find that some of them are unprofitable and must be disposed of. In addition, when cows are purchased there is always serious danger of introducing diseases such as tuberculosis or contagious abortion. A fact even more important is that the dairy farmer should be interested in his work with the idea of making improvement and progress, and he should consider dairy farming as a breeding proposition with great possibilities for improving his herd. Also he should realize that whenever the practice of buying rather than raising heifers is followed, the production of the herd is low and there is never much tendency for it to increase.

What is Breeding?

The following definitions have been adopted by the United States Department of Agriculture for use in the "Better Sires—Better Stock" campaign which it will conduct in cooperation with the various states, beginning October 1:

Purebred

A purebred animal is one of pure breeding representing a definite, recognized breed and both of whose parents were purebred animals of the same breed. To be considered purebred, live stock must be either registered, eligible to registration, or (in the absence of public registry for that class) have such lineage that its pure breeding can be definitely proved. To be of good type and quality, the animal must be healthy, vigorous, and a creditable specimen of its breed.

Thoroughbred

The term "thoroughbred" applies accurately only to the breed of running horses eligible to registration in the General Stud Book of England, the American Stud Book, or affiliated Stud Books for thoroughbred horses in other countries.

Standardbred

Applied to horses, this term refers to a distinct breed of American light horses, which includes both trotters and pacers which are eligible to registration in the American Trotting Register. Applied to poultry, the term includes all birds bred to conform to the standards of form, color, markings, weight, etc., for the various breeds under the standard of perfection of the American Poultry Association.

Scrub

A scrub is an animal of mixed or unknown breeding without definite type or markings. Such terms as native, mongrel, razorback, dunghill, piney woods, cayuse, broncho, and mustang are somewhat synonymous with "scrub," although many of the animals described by these terms have a certain fixity of type even though they present no evidence of systematic improved breeding.

Crossbred

This term applies to the progeny of purebred parents of different breeds, but of same species.

Grade

A grade is the offspring resulting from mating a purebred with a scrub, or from mating animals not purebred, but having close purebred ancestors. The offspring of a purebred and a grade is also a grade, but through progressive improvement becomes a high grade.

Thanks to an overruling power, the products of the dairy do not need to be camouflaged or compared or likened to any other product. They contain sufficient merit and have been given a prominent enough place in the dietary of man to justify the best advertising that the mind of man can put together in their behalf. But advertising costs money and there is the rub. One cent on every hundred pounds of milk or one-tenth of one cent on every pound of butter fat would not be much for each individual, but it would create a fund of considerable size if every hundred pounds of milk handled as such or every pound of butter fat marketed as such were thus taxed.—Kimball's Dairy Farmer.

TRUTH WILL OUT

As an illustration of great devotion to truth, a would-be M. P. told his auditors that he "underwent a severe thrashing when a boy for telling the truth." Imagine the sickly feeling which came over him when a gruff voice called out from the center of the audience: "I guess it's cured yer, guv'nor!"—Christian Life.

AN IDEALIST

"Do you love me, darling?" she coaxed.

"Sweetheart, I love every hair on your bureau!" he fervently answered. —Gargoyle.

Eldorado County farmers are forming a cow testing association to raise their dairy cow standard.

Pork Production

By Actual Test Pure Hawaiian Cane

MOLASSES

will increase pork production approximately five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price. Do you know of any other feed at any price that will do this?

Why not get all the profits out of your hogs?

Write us immediately for a copy of above test.

W. H. Young Company

58 Sutter Street San Francisco

Again! Again! Again!

Uneeda Glenn County Herd of Duroc-Jersey Win Grand Champion Boar on

SENSATION WONDER 1st

Also senior champion boar and junior champion boar. Come to the

The Key Herd of the Pacific Coast

for your foundation stock. We have on hand a number of high-class bred sows and gilts and spring pigs. Our business has grown through our ability to sell at reasonable prices. Write us.

H. P. Slocum and Son

Willows, California

WHAT DO YOU WANT?

We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.

George Junior Republic Chino, Calif.

also Breeders of Holsteins

As Evidence

that we are breeding popular Duroc-Jerseys, we made the highest average in the July sale of the Tulare County Duroc-Jersey Breeders' Association. We topped the sale at $300.

Herd Boars: Lord's Orion Cherry King and Joe's Orion Cherry King 5th.

Joe N. Chinowth Visalia, Calif.

GRAND CHAMPION HAMPSHIRES

Herd Sires...

Goldmine,
Prince
and
Honest Lad

Blood Lines of
Gen. Tipton
Again,
Director,
Pat Maloy,
Sioux Queen
and
Hawkeye Lad

200 Pigs for season's trade. Bred sows and sows with litters for sale. Write or call.

Llano Vista Rancho, F. A. Langdon, Mgr; Perris, Calif.

Hampshire Headquarters

The big boar, The Harvester, again at head of herd. Home of Wavelet, the noted senior yearling, 1918; also Leading Wave 3d, Mary Pickford—both prize winners. See our show herd at Riverside and Los Angeles. Young stock for sale.

C. J. Gilbert Lancaster, Calif.

SURFACE IRRIGATION

14 FOOT 6 INCHES LONG — DOUBLE LOCK SEAM — ONE PIECE BODY

MANUFACTURERS OF

Well Casing, Tanks, Riveted Water Pipe and Supplies

AMERICAN STEEL PIPE & TANK CO.

P.E. Building, Los Angeles, Cal. Branch at Fresno

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The direct selling method from producer to consumer, and a clearing house for over 33,000 readers, weekly.
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FARM LANDS FOR SALE

DO YOU WANT A NICE ORCHARD HOME WITH INCOME AT A REASONABLE PRICE IN SANTA CLARA VALLEY? IF YOU DO WE HAVE THAT HOME.
READ AND BE CONVINCED
$9000—13 acres in prunes. 10 acres in full bearing, 3 acres in 3-year-old trees; good 5-room house with bath, windmill, tank house, barn, chicken houses and farming implements, situated on state highway, about 1 mile from High and Grammar school.
$8,500—10 acres in bearing prunes, 2 acres in 2-year-old trees, 2 acres in dry ground; 5-room house, windmill, tank, barn and trays.
$10,500—10 acres in 4-year-old prune trees; nice 4-room house, electric lighted, bath and toilet, 2-story tank house, tank, engine, barn, chicken houses, brooder, 300 pullets just beginning to lay, 400 laying hens, farming implements, also one steel range. This young orchard and chicken ranch is strictly first class property; will have to be seen to be appreciated.
We have listed orchards from 3 acres to 250 acres, ranging from $600 to $1000 per acre, according to location and improvements. If you will give us an idea of what you want we can get it for you.
LEWIS & STEVENS,
Morgan Hill, California.

Washington "The Evergreen State" has splendid openings for more farmers. Fruit growing, dairying and live stock raising, as well as grain growing show great results. Here is a mild climate, ample rainfall or irrigation and many valleys of fertile soil. Land prices range from $25 an acre upward, depending on location and development. Good roads, schools and churches. Full information in new book by State Agricultural College and United States Railroad Administration, just off press. Ask for Washington book and give your name and address plainly. J. L. Edwards, Manager Agricultural Section, Room 677, United States Railroad Administration, Washington, D. C.

$1200 Down Secures
60 Acres, Pair Horses and
4 cows, heifer, poultry, turkeys, wagons, separator, mowing machine, full line tools, crops, etc., 2½ miles High School town, near RR. city, trolley. Machine-worked fields, 10-cow pasture, wood, timber, orchards. 7-room furnace-heated house, large barn, hog, poultry houses. Aged owner sacrifices all for quick sale, $2750, easy terms. Details page 23 Fall Catalog, just out. Write for your free copy; this big 100 page book of farm bargains from Maine to Florida and west to Nebraska. STROUT FARM AGENCY, 831 A. G., N. Y. Life Bldg., Kansas City.

For Sale—140 Acres on proposed highway in Anderson Valley, Mendocino County. Nice open land, no rocks or stumps, all but 30 acres can be cultivated, 7 acres bearing orchard mostly prunes, 60 acres hay land, large garden, balance good pasture, fenced and cross fenced, hog tight, plenty of soft water, 20 buildings including fine 10-room house and large store. Price for ranch, goods and fixtures in store $18,000. Will sell hay, grain and stock cheap. Am sick, must sell. Terms. R. F. Smith, Philo, California.

For Sale—341 Acres A-1 Land; 125 in alfalfa, 75 ready for alfalfa, 85 in corn (soon ready for alfalfa), 15 in pumpkins, 20 in pasture. 6-room dwelling—old, and a small dwelling. Good horse barn, new dairy barn for 60 cows, six horses, 100 hogs and pigs. Water piped to six fields. Plenty irrigating water from Kern River. All necessary implements. Price $50,000, $12,500 cash will handle it. J. B. McCutchen, R. F. D. No. 3, Bakersfield, California.

Mountain Ranch For Sale 196 Acres—60 acres high grade fruit land, 50 acres suitable for grain, balance good grazing land, $3000 worth of uncut wood on the place. About 20 acres cleared, 12 acres fenced and partly planted to fruit trees. Plenty of water. Four-room board house, small barn, storehouse and pig pen. Price $3700. No agents or exchanges. Address Frank Mason, Badger, Tulare Co., California.

For Sale—Fruit and Poultrymen—It will be to your advantage to write today for information about the Paradise district—deep rich soil—ideal mountain climate. (Above frost and fog.) Electricity and an abundance of pure water.
Choice tracts $100 per acre.
PARADISE LUMBER CO.
Paradise, Butte County, California.

For Sale—Twenty Acres Alfalfa, 26 fine Holstein cows, 1 fine Holstein bull; good pumping plant; good 7-room house; two good cow barns. Fifty tons of alfalfa in the barn. Will sell reasonable. Address S. Stokes, Artesia, California. Phone 7105.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

For Sale—Relinquishments and deeded land, $5.00 to $35.00 per acre. Pumping 18 to 45 ft. lift. Good farming land. Further information write O. H. Bolt, Gila Bend, Arizona.

For Sale—80 Acres good vine land, 15 miles from Fresno. Fenced, level and under water, buildings. If sold within 30 days owner will plow same. Price $12,000. Terms. Rt. "F," Box 348, Fresno.

For Sale — $1200 Relinquishment — 160 acres with well 114 ft. Water stands 28 ft. of surface. Deeper drilling would doubtless get flowing well. A. C. Vestal, Wagner, California.

For Sale—30 Acres Alfalfa. Write me for descriptions, price, terms. L. E. Williams, R. D. No. 1, Box 10-B, Imperial, California.

CATTLE

Dispersal Sale—Brookhollow Farm, Hollister, San Benito County, Calif., will sell at public auction their entire herd of high grade Holsteins numbering 135 cows and heifers in order to make room for the expansion and development of their herd of registered Holsteins. This is the well known herd developed and formerly owned by J. Lansing Lane, and is the product of carefully selected high producing cows mated with richly bred registered Holstein bulls for many generations. Every cow in herd has an accurately kept private milk record, some going above 16,000 lbs. in one lactation period. All records will be announced at sale. Among the four registered bulls to be sold is Juliana King Pride, a son of the famous sire Juliana King of Riverside, who has three daughters above 1000 lbs. butter in one year, and is the sire of King Mead of Riverside, the breed's leading sire of high testing daughters on yearly test. The farm is six miles northwest of Hollister, eleven miles south of Gilroy on Bolsa Road. Parties going by train change at Gilroy to the Hollister train and get off at Hudner Station where conveyance to sale will be found. Sale begins 10 A. M., Thursday, September 25. Auctioneer—Col. Ben A. Rhoades, Los Angeles; Sale Manager, C. L. Hughes, Sacramento.

Complete Closing Out Sale—San Mateo Dairy Ranch Co. will sell at public auction, on their ranch near San Mateo, Saturday, September 27, beginning promptly at 9 A. M.: 225 Holstein dairy cows, all young and in fine condition. Herd has been carefully culled for eight years, and present herd is exceptionally high grade throughout; dairy equipment consisting of one Cyclops ice machine and ammonia cooler complete with engine, etc., in excellent condition, aerators, sterilizers, pails, cans, etc.; implements consisting of milk wagons, grain wagons, swill wagons, plows, manure scraper, wheelbarrows, cars and one-half mile of track, silo, windmill, furniture, etc.; feed, consisting of 60 tons baled alfalfa, 100 sacks mill run, 125 sacks beet pulp, etc.; a blacksmith shop complete; seven good all purpose horses. Terms on cattle $100 and under cash, over $100 one-third cash, balance 3-6-9 months with note and approved security and 8 per cent interest. Liberal discount for cash. Everything except cattle sells for cash. Autos from San Mateo go 1½ miles south on main road and turn off to left toward Bay near the salt works. Buyers coming on train will be met by auto at San Mateo and conveyed to sale. Auctioneers: Rhoades & Rhoades, Los Angeles; Sales Manager, C. L. Hughes, Sacramento.

Auction Sale — Coast Dairies and Land Company, will sell at public auction, on Yellow Bank Ranch, two miles south of Davenport, Santa Cruz County, on Monday, September 29, 1919, beginning promptly at 9 A. M.: 100 Holstein dairy cows, all nicely marked, all first, second and third calf heifers, all raised on the ranch from the biggest producing dams and high class sires. This is a top herd in every respect; cheese making outfit complete; cream separators, milk cans and pails, all other dairy equipment and outfit of general farm implements. Terms on cattle: $100 and under cash; over $100 one-third cash, balance 3-6-9 months with note and approved security with 8 per cent interest. Liberal discount for cash. Buyers coming by S. P. train will be met at Davenport. Auctioneers, Rhoades & Rhoades, Los Angeles; Sales Manager, C. L. Hughes, Sacramento.

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Gulliford, Box C, Butte City, Glenn County, California.

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

For Sale—Registered Holstein cows, grade Holstein heifers. Also horses and mules. G. U. Clark, Hanford, Cal.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

AUTOMOBILE SCHOOLS

Pacific Auto and Engineering School offers a practical course in auto and tractor tuition; day and night classes. 337 Golden Gate Avenue, San Francisco. Phone Market 1799

MUSICAL INSTRUMENTS

PIANOS—PLAYER PIANOS
Paige Piano Co., 1600 Clay Street, Oakland, California.

HOGS

CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

BOAR
Sired by Baron Duke 201st
Weight 780 pounds
Grand National Champion
Damed by Rookwood Lady 100th
Weight 712 pounds
Grand National Champion
one and one-half years old. Big boned, vigorous boar. Half-brother to 1919 Grand Champion that sold for $1000. I do not need this great breeder and he is being offered at a very low price. Sandercock Land Co., 23 Montgomery Street, San Francisco. In Charge of Natomas Land Sales.

ORION MODEL
Sired by
ORION CHERRY KING, JR.
the $3,500 Boar.
is making his mark as a great breeder. He heads our herd of up-to-date Durocs. The most popular blood lines are represented in his pedigree—the kind that have laid the foundation for many prize winning herds. Choice spring boars for sale. If you are in the market for some outstanding boars, we have them. F. D. BURR Co., ORLAND, CALIFORNIA.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

BERKSHIRES

are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. High class stock for sale at all times.
GEO. A. STINGLE El Monte, Calif.

Durocs—A few very fine gilts and boars five months old, about 175 pounds, Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

Chester Whites—Billiken Type. Big winners at the State Fair. 15 extra spring boars sired by the Grand Champion and out of Billiken sired sows. A few spring sow pigs, same breeding. Three bred sows—two bred gilts. Billiken blood. Write for special catalogue and price list. C. B. Cunningham, Mills, California.

Rancho Del Sur Durocs — A few good growthy fall boars sired by Orion's King Gano and California Orion Cherry King. Satisfaction guaranteed. Donald H. Graham, Box 569, Lancaster, California.

I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

A Few Poland-China Boars ready for light service by King's Big Bone Leader and President. Priced right. Full particulars on request. John M. Bernsteln, Hanford, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited. Prices reasonable. Harvey M. Berglund, Dixon, California.

Ireland Ranch Durocs—the big 1918 grand champion Cherry Volunteer II heads herd. Spring pig and bred sow prospects coming fine. Owensmouth, or 1219 Brockman Building, Los Angeles, California.

We Have 100 Young Gilts and Boars, bred in the purple, which we are selling for about half their value. Money back if not satisfied. Derryfield Farm, Capital National Bank Bldg., Sacramento.

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Our Fairfadale Farm big-type Durocs, for 1919 are the best ever. Great Orion Sensation, Jr., at head of herd—a $2000 boar, with sows in same class. Write: B. H. Wilkinson, Mgr., Perris, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Strictly Big Type Poland-Chinas; El Profito heads herd at 900 lbs.—a line bred Big Timm. Viola L. Renwick, Santa Barbara, California.

For Real Good Berkshires, cholera immune, write for my catalog that gives complete information. Frank B. Anderson, Box 724, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

A. R. Bardrick, breeder of Duroc-Jersey hogs. Stock for sale. Oceano, California.

REGISTERED BERKSHIRES FAIR OAKS RANCH, WILLITS, CALIF.

HOGS

The Pacific Herd of Big Type Polands, King Hadley & Chief. Price breeding. Mrs. C. H. Andrews, Modesto.

Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet, California.

Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carhart, Fullerton, California.

POULTRY

Fall Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heavylest laying (Hoganized) stock. Price during August: 25, $4.00; 50, $8.00; 100, $14.00. Price during September: 25, $4.50; 50, $8.50; 100, $15.00. Special prices 500 and 1000 lots. Safe delivery guaranteed; you pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks, and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

For Sale—Early April Hatched Northern bred husky cockerels, dollar fifty to five. McFarlane (direct) big white Leghorns—also settings dollar fifty, fall hatching. Pendelton Poultry Ranch, 58 Pennsylvania Avenue, Santa Cruz, Calif.

Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67, Palo Alto, California.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

Petaluma Hatchery — Established 1902 Can ship day old chicks to points reached in three days. Four varieties. Why not have the best? Free fall circular. L. W. Clark, Petaluma, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

For Sale—S. C. White Leghorn chicks $12.00 per hundred. Book now for September. We ship by express C. O. D. Welty's Hatchery, Petaluma, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

Baby Chicks—Order fall chicks now from our large heavy laying S. C. White Leghorns. Tupman Poultry Farm, Ceres California Box 7 "C."

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

For Sale — Silver Campine Cockerels — also eggs for setting. Roy Ward, Lindsay, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, Reservoir, Pomona, California.

Send Your Order for Rock Red or Leghorn chicks to MADERA HATCHERY, Madera, California.

SEEDS AND PLANTS

For Sale—500,000 Early Winningstadt Cabbage plants, 40c per 100, $3.00 per 1000; by mail, 60c per 100. Take Vernon Avenue car and get off on corner of Vernon Avenue and Hawthorne Street and walk one block south. Mail address J. M. CHACON, corner Hawthorne and Audrey Streets, Los Angeles, California.

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand picked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Cory's Thornless Mammoth Blackberry plants for January delivery. Dealers order early, supply limited. G. S. Wood, Mountain Pass Ranch, Jamestown, California.

Write for Circular and Prices of Seeds Wanted Sudan, Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

For Sale—Everbearing Strawberry Plants—Progressive, $1.50 per hundred; Superb, $2.50 per hundred, postpaid. G. S. Hawley, La Mesa, California.

Wanted Seed Beans for fall planting. Address K. W., Seedsman, Cultivator.

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees. 000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Select stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY
P. O. Box 585, Pasadena, California

GOATS

Registered Angora Bucks from kids to 3 years of age. As good as the best. Thorne Ranch, Uno, El Dorado County, California.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. 2 floors. Large stock. Liberal credit. 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.,
The Yellow Front. Established
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WANTED

Want Responsible and Experienced fruit, alfalfa or grain irrigation farmers to work on crop share basis. Land is river bottom tule land, plenty of water, good living conditions and good markets. Will enter into one or two years contract with right men and might extend same into option of purchase. Party should have some implements, live stock or money with which to buy them. Please state age, farming experience, from whom you have rented, amount of livestock and implements you own, financial condition, and size and age of family. State when your services will be available and amount of land you can handle. Address Herman Janss, San Joaquin, Fresno County, California.

An Experienced Dairy Herdsman, now employed in one of the leading Holstein herds of this state desires to make a change where a greater opportunity is afforded. Lifetime with Holsteins. Wisconsin agricultural college training. Capable of managing a first class herd where official records are made and where show herds are fitted. Best of references from several of the leading breeders of this state. Single. Address Wellington H. Nees, Box 238, Sacramento, California.

Wanted — Management of farm by Californian, thoroughly familiar with fruit, alfalfa, grain and stock growing. An expert in irrigation. Address Lock Box 944, Fontana, San Bernardino County, California.

Wanted—A thoroughly efficient man to take charge of curing and packing of lemons and oranges in Northern California. Apply to James Mills Orchards Corporation, Hamilton City.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Wanted to Buy Second Hand hog wire, 34 or 36 in. high in good shape for to fence 20 acres. W. J. McCardla, Blythe, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted to hear from owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Bees Wanted—In boxes or patent hives, also equipment. Address E. C. Rothhild, Rutherford, California.

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Sheep For Sale—Young Merino and Rambouillet ewes; North California Stock. Copy, write or wire ANDREW H. McINNES, wool and sheep broker, 408 Bank of Italy Bldg., 550 Mont. St., San Francisco.

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Sampson Tractor No. 25, 10 H. P. at drawbar, has 16-in. extension wheels on it. disk plow 4 disk 10 inch cut, 1 10-ft. seed drill double disk type, one iron wheel wagon, all in A-1 shape plowed 200 acres last year, complete outfit, price $2150. Some terms, address: J. L. Lingerfeldt, Burson, California.

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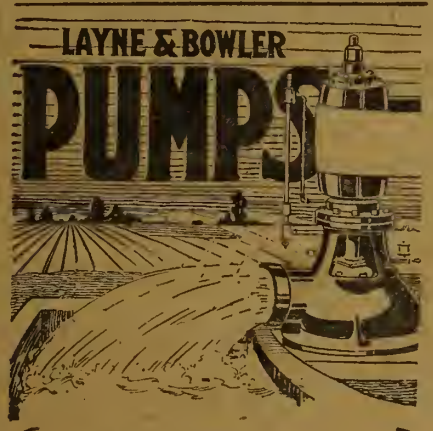

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My prices will convince all interested.
Lemuel Black

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Stifle Out

I have a very valuable two year old mare colt that has been bothered for the last month with the stifle joint slipping out of position. Two or three times both sides were out at the same time. What can be done for it?—Subscriber, McKittrick.

Some horses are so loosely built that the ligaments about the joints are too flabby to hold the parts in place. Proper feeding will help. Oats is the best feed to build up the soft tissues. Give the colt some lime in the drinking water and a teaspoon of the tincture of iron in the feed once a day for three or four weeks. Some use blisters on the joints but that does little good unless the system is built up to supply the lacking material. A spray of cold water on the joints for half an hour once a day is also beneficial.

Lame Pigs

I have a sow that began to limp on left front foot. At first could see nothing wrong but it soon began to swell and is now quite large. Also the left hind foot is becoming affected in the same way. I lost a pig about two months ago that was affected the same way and now I have two pigs weighing about fifty pounds each that are each lame in one foot.—Subscriber, Coalinga.

We would advise examining the feet. Think you will find them injured in some way. Someone may have dropped some tacks where the pigs could step on them or some broken glass may be scattered about the yard. Examine the feet and examine the ground where the pigs are kept.

Wash the lame feet and if a wound is found enlarge it so you can cleanse it out to the bottom and wrap it with cotton soaked in turpentine. Then keep them on a dry clean place until healed.

ASSISTANT SECRETARY OF AGRICULTURE

The new assistant secretary of agriculture, James R. Riggs, whose nomination has just been confirmed by the Senate, is a farmer—not merely by way of interest in the subject but by life-long, practical application. Farming has been his primary occupation all his life. More than that, he is a farmer by heredity.

FAIR DATES

Kings County, Hanford, September 22-27, Secretary Frank C. Russell.

Oregon State, Salem, September 22-27, Secretary A. H. Lea.

Glenn County, Orland, September 22-27, Secretary E. A. Kirk.

San Diego County, Balboa Park, San Diego, September 24-27, Secretary Mellinger.

Ventura County, Ventura, September 25-27.

Fresno District, Fresno, September 30-October 4, Secretary C. G. Eberhart.

Napa County, Napa, October 2-5, Secretary Nathan F. Coombs.

Tulare County Live Stock Show, Tulare, October 6-11, Secretary R. C. Sturgeon.

Southern California, Riverside, October 7-11, Secretary W. W. Van Pelt.

Monterey County, Salinas, October 10-11.

California Industries and Land Show, San Francisco, October 14-19, Secretary E. H. Brown.

Los Angeles Live Stock Show, Los Angeles, October 18-26, Secretary C. R. Thomas.

California International Live Stock, San Francisco, November 1-8, Secretary Gordon H. True.

Arizona State, Phoenix, November 3-8, Secretary Chas. F. Price.

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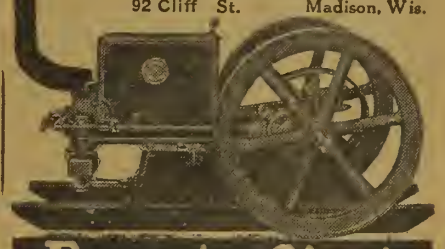

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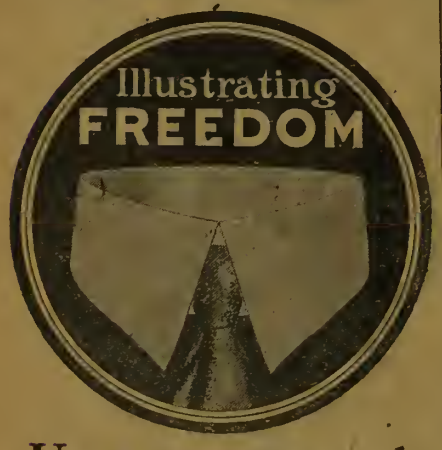

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Household Department

WE THANK THEE

For days of health,
For nights of quiet sleep,
For seasons of bounty and of beauty,
For all earth's contributions to our need,
Good Lord, we thank Thee.

For our country's shelter,
For our homes,
For the joy of faces, and the joy of hearts that love,
Good Lord, we thank Thee.

For the power of great examples,
For holy ones who lead us in the ways of life and love,
Good Lord, we thank Thee.

For our powers of growth,
For longings to be better and do more,
For ideals that ever rise above our zeal,
Good Lord, we thank Thee.
For opportunities well used,
Good Lord, we thank Thee.

For opportunities unused and even those misused,
For our temptations and for any victory over sins that close beset us,
For the gladness that abides with loyalty and the peace of the return,
Good Lord, we humbly thank Thee.

For the blessedness of service,
For the power to fit ourselves to other's needs,
Good Lord, we thank Thee.

For our necessities of work,
For burdens, pains and disappointments, means of growth,
For sorrow,
For death,
Father, we thank Thee.

For all that brings us nearer to each other, nearer to ourselves, nearer to Thee,
For life,
We thank Thee, O our Father.

—The Associated Monthly.

RALPH MASON PLAYS THE GAME

By David Wallace in Successful Farming

RALPH MASON had just delivered the last of his 25 barrels of Bliss Triumphs, slinging it up on the landing with the ease and agility of an athlete taking his morning exercise. As he seized the reins and turned to the big overalled potato handler, who was adding up a column of figures in chalk on the side of the 500 barrel bin he looked more like a warrior on the verge of a struggle to the death, than a farmer getting ready to play the market.

"That makes 800, Charlie, doesn't it?" he said. "Yes—let me see—yes, just it," he answered. "Eight hundred at a dollar twenty-five a thousand dollars even. I will telephone the office and you can get the receipt on your way uptown." As Mason jumped into his jigger and cracked his whip over the heads of the big iron greys, the clerk shouted after him: "How about selling us 500, Ralph? Give you one thirty."

"Guess not, now," he answered as he started the horses on the run over the railroad crossing, just ahead of a puffing freight train. The 800 barrels settled his fertilizer bill at a price agreed upon last spring. Now he was going to wait and play the game, and how much depended on the final score this time, only he and Kate knew. Kate? Maybe she did not care at all!

A little over two years before he had struck the bustling town gaunt and ghostly, the red flag of the white plague already planted on his flushed cheek, determined to try nature's great sanitarium, the big woods to the west of Aroostook's garden patch, a hundred miles by a hundred and fifty and the ozone four miles high.

Three months of the glorious treatment had wrought such wonders that when he returned to the big town and found it tingling with the bustle and excitement of November shipments quoted at two dollars already, and everybody watching the ticker, he had jumped into the first position that opened up and in the months which followed had caught the Aroostook fever and was buying and selling potatoes like a veteran.

By the last of March he had made up his mind to take a hand at producing as well as speculating, and had hired 30 acres for the season at 20 dollars an acre.

It was a fool enough undertaking as he had learned at bitter cost, a case of the raw recruit charging with bare hands where the veteran crawls on all fours pushing his Mauser ahead of him; but he had made the plucky fight which always wins admiration, nowhere so generously as among the lion hearts of Aroostook, and now burdened by debt and handicapped by shaky credit he was facing the real crisis of the adventure.

As the iron greys stepped briskly along, Mason was startled by an explosive greeting from a big, rosy-cheeked, sharp-eyed fellow, riding on the top of his 40 barrel load.

"Hullo, Ralph!" he shouted, driving over along side. "How are they comin'? What are you getting?"

"O, I was just finishing my contract with the Packards," he answered. "Dollar twenty-five it called for. Not so bad I guess; just about the going price, isn't it?"

"Yes, I reckon so," responded the first speaker with a grin and a wink, and giving his whip a crack that set the bays prancing and rearing, "but I am going to make a big bluff for ten more. My 25 years' experience, boy, has learned me that you can't take the 'apsy-dicket' of every cut throat buyer for the gospel truth."

And then drawing a little closer and dropping into a confidential tone, he gave the young man a knowing wink adding, "And let me give you a pointer, Ralph, as a man who knows a little something about this and one that would dance with Sally Delancy, the homeliest old maid in these diggings, to see you come out a winner this time. I'd advise you to get right back to the hill and hustle your Irish Cobbler seeds into the cyclone cellar, and then get out and unload your 'Mountains' just as fast as you can make 'em bite. This is one of the earliest seasons Aroostook has ever known. The vines look pretty fair and the diggin' ain't bad so far, but the heavy rains have made mudholes of the valley farms and the cobwebs are getting thicker than ants in molasses. If you play your cards right, Ralph, this is the time you will get your pay for working that side hill patch. Mark my words! Within 20 days there will be the greatest hullabaloo over the rot that Aroostook has ever heard." Puffing away at his clay pipe for fear of betraying unseemly excitement Mason listened with the intensest interest and under pretense of using his handkerchief, spat the piece of broken stem that he had shattered between his teeth, into it.

"I have a lot of reasons, Hackett, for regarding you as a friend, and I have the greatest respect for your judgment, but I had been reading up everything I could find on crop prospects throughout the country and I had made up my mind that the waiting game was the thing for this year. I don't mind telling you, Hackett, that I am up against it for fair this time. It is either hunt tiger or tiger hunt."

"The waiting game?" the big fellow broke in with a convulsive laugh. "I'll give you a chance to play it all right, to play it till every nerve of your body squeals like a trapped mink, but before you begin I want you to try the hit and run trick—and listen!" he added giving a sharp sweeping glance up and down the street, "do you believe that my word is as good as paper and that my paper is as good as any man's on the street, up to six figures split in two? You do? Then you know where to come to if you want a little accommodation."

So saying, he gave his whip a crack that set the big bays dancing and tugging, and started every dog on the street on the rampage.

As Mason started slowly along, the cold sweat broke in beads all over him. In less than 30 seconds, every wheel in the delicate machinery of his thinking box was whirling around at high speed. He was not the man to let another dictate to him, or override his judgment, friend or foe, but the ice was a little too thin and brittle under his feet to make it sensible to despise any outstretched hand, and especially the big nervous fist of such a powerful ally!

As he approached the business center the uproar and excitement of the annual twin festivals, digging time and the big fair, were in evidence everywhere, jiggers loaded and empty, moving in every direction, all kinds of carriages from ox carts to next year's autos plodding and whizzing along

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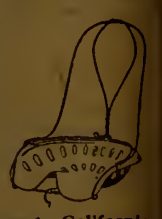

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LOS ANGELES

The Southwest Washington Fair reports 25 per cent greater attendance than in 1918.

or lining the curbs, and the sidewalks, stores and street corners crowded with every specimen of picturesque humanity; tramps, buyers, hunters, drummers, fakirs, lumberjacks, Mormon missionaries and all the rest. Here and there he recognized a face and returned a greeting, but he moved on half unconsciously, passing the office which had been his immediate objective point and heading for the open country beyond, the iron greys setting their own pace and making their own trail. A little beyond the last business block an imposing Packard whizzed by and he started as if struck in the face, the reins tightening in his hands and the horses starting on the run. O, yes, it was Kate all right on the front seat, as handsome as a queen, and Gibson himself at the wheel. Gibson! the man he feared the most and with mighty good reason, the plunger of the street who had dropped a thousand dollars a day for 30 consecutive days the year before and laughed at it, the man who was the most respected and the most hated of all the operators of this little Wall Street of the Aroostook!

Laughing a bitter laugh he suddenly started and seizing the whip swung it with savage force across the horses' backs, an act so bewildering that the petted animals balked and reared and brought the jigger to a dead stop.

Was it possible that Gibson was responsible for that scaly transaction that cost him fifteen hundred? He was the very man that advised him to ship to those New York skins? And that other break selling long and buying short which accounted for another thousand dollars of his millstone! There was something about the deal that he could never quite comprehend. Now he recalled how Hackett had touched him on the shoulder about that time remarking;

"It's a long way to the Bowery. Ralph, but look out for the loaded dice."

(Continued next week.)

HOUSEHOLD QUERIES

Good Loaf Cake

Please give me a recipe for plain loaf cake that will keep fresh several days, some suitable for lunch boxes.—Subscriber, Sierra Madre.

Here is a good economical loaf cake: Two eggs beaten together, one cup sugar, one cup flour (rounded before sifting), one teaspoon baking powder. Sift flour and baking powder together twice. One-half cup hot milk, one tablespoon butter in milk, a little salt, flavoring. Bake 45 minutes in moderate oven.

For a good keeping cake, that is one that will stay moist, there is of course nothing to compare with apple sauce or prune cake or a cake of that nature that incorporates fruit jam as its make-up. A good cake is the following: Two cups sugar, one-half cup butter, two cups apple sauce, two teaspoons cinnamon, one teaspoon cloves, one-half teaspoon salt, two teaspoons chocolate, two teaspoons soda stirred in apple sauce, two and one-half cups flour (measured before sifting), one cup nuts cut coarsely, one cup seedless raisins. Bake one hour.

The Cultivator will be glad to publish some good cake recipes, preferably simple ones. For these six months to one year's extension of subscription will be credited to sender. With recipe please send name and address of one to whom you wish subscription credited.

Smoked and Cured Salmon

Please give directions for smoking sugar cured salmon.—Subscriber.

In the issue of July 13, 1918, the Cultivator gave extended directions for home smoking of fish previously cured in brine. This has been mailed to our inquirer. As to sugar curing we are not informed. Can our readers help us out? We recall that some years ago a subscriber in the northern part of the state gave directions for curing salmon but we do not have the recipe at hand and do not remember that the salmon was sugar cured. But we have never yet failed to receive response to calls for help of this kind, so we think that in a week or two our inquirer will find on this page the directions she asks for. Subscription credit will be given for recipes published.

FIG AND GRAPE PRESERVES

By Mrs. J. J. Dean

To Preserve Grapes Whole

Select grapes that are ripe but not too mellow. Strip from the stems and wash thoroughly; then place in fruit jars, filling the jars quite full. Pour into these jars all the boiling water they will hold and let stand for five minutes. At the end of five minutes pour off water and again fill with boiling water. Repeat the third time. Fill the jars with a boiling syrup made of one pound of sugar to one quart of water, and seal jars.

To Preserve Figs

Take ripe but firm figs. White figs are preferable as they need not have skins removed. Wash thoroughly and let stand over night in a weak brine. Next day put them in fresh water for an hour. Pour off water and drain, then pour over them a hot syrup and boil 10 minutes. Let them remain in this syrup over night. Pour off syrup next day and boil 10 minutes and again pour over the fruit. The third day boil the figs in the syrup until the fruit is of a transparent color. Place in jars and seal. For those who do not care for a rich preserve, a syrup made of one pound of sugar to one quart of water is sufficient. A lemon sliced in the syrup is an improvement.

PICKLING BITS

Grape leaves give a green color to pickles, and produce a pleasing, characteristic flavor. The color is heightened by pouring the vinegar cold over the pickles and gradually bringing to the boiling point.

Alum water makes pickles crisp, one teaspoon for one quart of water is enough.

The receptacle, holding pickles during their making, should be well protected from dust.

Always use a good grade of vinegar for pickling and fresh, crisp, perfect vegetables.

Twenty-four hours is long enough for the pickles to soak in the brine solution; if left in longer, they will shrivel.

One to one and one-half cups of salt for each gallon of water makes a good brine for pickles.

A little bit of horseradish added to the vinegar will prevent scum from forming.

Tie spices in a bag, when adding to pickles; otherwise they will cause a dull appearance.

Vinegar boiled too long will become lacking in strength. Pickles heated too long in the vinegar become soft.

Spices not tied in bags, and boiled in the vinegar give a strong, undesirable taste.—L. B.

MUSTARD PICKLES

Four quarts green tomatoes, one cauliflower, one quart small onions, one quart small cucumbers, six green peppers, six red peppers (sweet), or one can pimientos; one pint green beans, one pint white wax beans, one head celery, two tablespoons mustard, one-half teaspoon turmeric, one and one-half cups brown sugar, three-quarters cup corn starch and flour mixed, two quarts vinegar, one pint water.

Cut vegetables into pieces and cover with a brine made of one cup of salt to one gallon of water. Let stand over night. Then boil in brine for ten minutes and drain thoroughly. Mix mustard, turmeric, sugar and flour and add water to make a paste. Cook until mixture is thick and creamy. It may be necessary to add a little more corn starch. Pour over pickles and seal in jars. Let stand a few weeks before using.—Subscriber, Los Olivos.

TOMMY'S COURTESY

Tommy's father had been giving him lessons in politeness, but hardly dared hope that the seeds of his teaching had taken root.

One day, hearing a noise coming from the nursery, he investigated, and found Tommy pounding his little brother.

"I'm surprised, Tommy," said his father sternly, "that you should hurt your little brother. Don't you know that it is very cowardly to strike one who is smaller than yourself?"

"Yes," replied the culprit meekly, "but when you spanked me yesterday I was too polite to mention it."

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There are hundreds of different Piano makes on the market today—many of these names are unknown to you. Even if you have seen them advertised you are unable to verify the statements made about them, as you have no expert knowledge on the manufacture of Pianos.

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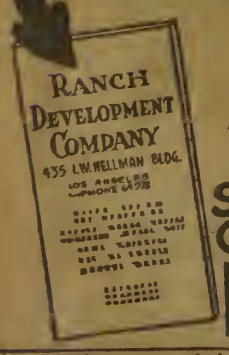

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LOS ANGELES

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Los Angeles Markets

Los Angeles, September 17, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 63 lb.; prices to retail merchants in 1-lb. squares, 62@63.

Dairy Exchange prices last week on extras:

Sept.	10	11	12	13	15	16
'19	62	62	62	62	62	63

CHEESE

Brokers' prices:

California, fresh, lb., 35; price to retail merchants, 35@36.

EGGS

Fresh extras, Produce Exchange closing price, 58 dozen, price to retail merchants 65 dozen; case count, Produce Exchange closing price, 56 dozen; price to retail merchants, 61 dozen; pullets, Produce Exchange closing price, 49 dozen; price to retail merchants 49; pewee pullets, 35.

Dairy Exchange prices last week on extras:

Sept.	10	11	12	13	15	16
'19	61	58	58	58	58	

POULTRY

Prices to producers: Hens, lt., 27, heavy, 33; colored over 4 lbs., 36; broilers, 34; fryers, 31; roasters, 32; old roosters, 19; capons, 42; ducks, old, 23; ducklings, 24; ducklings Pekins, 3½ up, 26; geese, 25; turkeys, 34@40; squabs, 45.

Belgian hares, live, 15.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 16.00; 150 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.50; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 16, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market unsettled. New stock, Stockton Burbanks, resorted, 3.10@3.25; others, best, 2.75@3.00; poorer, 2.25@2.50.

Sweets, lb., 3@4.

Onions: Demand and movement moderate. Homegrown and Stockton White Globes, 90@1.00 per lug box; 2.50@3.00 per cwt. Yellow varieties, 2.50@3.00 cwt.; lug boxes 85@1.00; Australian Brown, 2.75@3.00.

Garlic: Local, per sack lots, 30@35; bulk, 35@40 lb.

VEGETABLES

These are the actual prices obtained September 16, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 7½@8; Limas, 6½@7½.

Carrots, doz., 30@35.

Cucumbers: Local lug, 65@85; pickles, 1.25@2.00.

Celery: Local, best, 1.15@1.50 dozen bunches; poorer, 75@1.00; crates, best, 4.25@4.50; poorer, 3.00@3.50.

Corn: Roasting ears, 60@75 per lug of 3 dozen.

Eggplant, best, lb., 2@3.

Peppers: Bell, lug, 30@45; Chili, 30@35; Pimientos, 6@7.

Lettuce, local, cr., 1.50.

Peas, local, lb., 11@13.

Tomatoes: Lug, ripe, 40@75; shipping 65@75.

Turnips, doz., 25@30.

FRUITS

These are the actual prices obtained September 16, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California Gravensteins, packed, 2.00@2.40; Skinner Seedlings, packed, 2.25@2.75; crab apples, per lug box, 2.25@2.50; Jonathans, packed, 2.50@3.00; Bellefleurs, packed, 1.50@1.75; King Davids, packed, 2.75@3.00.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews, 65@75. Paul Rose, best pack standard, 1.50@1.75.

Grapes: Demand and movement moderate. Local and northern Tokays 5½@7 lb. Muscats 4@6. Malagas 5@6, Hamburgs 3½@4½.

Nectarines, lb., best, 6@8; poorer 5@6.

Peaches: Demand and movement moderate. Local, various varieties, 5@8 lb.; Utahs 6 lb; lug boxes, Clings, best 1.85@2.15; others $1.35@1.75.

Pears: Northern Bartletts, No. 1, 7@9 lb.; No. 2, 5@6 lb.; lug boxes, 1.75@2.00; packed, 3.25@3.50.

Pineapples, lb., 12@13.

Plums: Demand and movement slow. Hungarians, best 8@10; Grand Dukes, 6@7 lb.; others 5@6.

Watermelons. Demand and movement slow, quality and condition generally good. Local Chileans and Klondikes, large 1½ lb., medium 1, small ½ lb.

Lemons: Fancy packed, 5.75@6.25; local pack, 4.00@4.50; loose, some tree ripe, 3.00@3.75.

Oranges: Valencias, medium fancy, 4.75@5.50; local pack, 2.50@8.50.

Grapefruit: Local fancy, 4.00@5.00 bx.; poorer, 2.50 up.

HONEY

Demand and movement good, good inquiry, market firm. Carloads f. o. b. usual terms: White Orange Blossom, mostly 20; White Sage 20; Extra Light Amber Sage 18½@19; Light Amber Sage 17½; Light Amber Alfalfa, 15@16 lb. Beeswax: l. c. l. sales, mostly 40 lb.

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	19.00@21.00
Barley	16.00@21.00
Alfalfa	18.00@22.00
Wheat or Barley straw	9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, August 26:

Egyptian Corn, 3.00.

Eastern Kafir, 2.80.

Oats Red, 2.70; Yellow, 3.50.

Feterita, 3.00.

Wheat, 4.55@4.65.

San Francisco Markets

San Francisco, September 16, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	62½
Firsts	Nominal

Prices extras last week and year ago:

Sept.	9	10	11	12	13	15
'19	..	64	64	62	63	62½
'18	..	55½	55½	..	56	..

Rcts. wk. ending September 15, 2203 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	36½
Cal. Y. A. fy.	38
Ore. Triplets	33
Jack, full cream	27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	67½
Firsts	Nominal
Extra Pullets	58½

Prices extras last week and year ago:

Sept.	9	10	11	12	13	15
'19	..	68	68	67	66½	67½
'18	..	64	63½	..	62	..

Rcts. wk. ending September 15, 252,940 dozen.

POULTRY

Hens, W. Leghorns, 27@31; colored, 35@36; roosters, young 35@36; old, 19@21; broilers, 30@34; fryers, 33@34; squabs, 2.50@4.00 dozen; ducks, 20@26; geese, 24@26; broiler turkeys, 40@47.

Belgian hares, live, 16@17; Jackrabbits, 1.50@3.00 doz.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7½; common to thin, 4@5½.

Calves: Light weight, 12½@13½; medium, 12@12½; heavy, 10½@11½.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 8½@9, ewes, 6½@7.

Hogs—Hard, grain-fed, 100 to 250 lbs., 16½, do, 250 to 300 lbs., 16; do, 300 to 400, 15.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle—Good grass steers, 1000 to 1200 lbs., 10@12; medium to good grass steers, 950 and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs—Top packer hogs, hard and well finished; 175 to 250 lbs., 16½; 150 to 175 lbs., 16; 250 to 300 lbs., 16; over 300 pounds, 16; under 150 lbs., 16. Usual dock and price discount for other weights and kinds.

POTATOES

Potatoes: Per 100 lbs.: River, choice 2.00@2.15; fancy 2.00@2.40; sweet, lb., 4¾@5.

ONIONS

Onions: Onions, fancy, 2.50; choice, 2.00@2.25; Reds, 2.25; Whites, 2.25; Garlic, 20@21.

VEGETABLES

Wholesale selling price:

Beans: String, 3@3½; Blue Lake, 4½@4¾; Wax, 3@3½; Pole, 2½@4; Limas, 4@6½; Italian, 3@4½.

Cabbage, doz., 40@55.

Celery, doz., 25@30.

Cucumbers: Large box, 75@1.00. Pickling, lb., No. 2 grade, 3 lb.; No. 3 grade 1½.

Corn, doz., 10@20; sack, 1.25@2.00.

Eggplant, southern, fy., 50@65.

Lettuce, doz., 25@35.

Peppers, Bell, lb., 75@1.00; Chili, 7@11, Wax, bx. 33.

Peas, lb., 6@7½.

Radish, 7@9 doz. bunches.

Rhubarb, Strawberry, lb., 6, Mammoth, bx., 1.25@1.50.

Spinach, 75@1.25.

Tomatoes: Sacramento River, 50@1.90; Bay, 50@90.

Squash: Summer, cr., 50@65; Italian 50@75 bx.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 6.50@7.00; choice, 5.50@6.00; standards, 4.00@4.50; lemonettes, 4.00@4.50, grapefruit, fancy, 3.00@5.00; choice, 3.00@4.00; oranges, 4.00@4.50.

FRESH FRUITS

Wholesale selling price:

Apples: New crab, 1.20@1.50 for 20-lb box; Gravensteins, 2.50@3.00 bx.; ch. 1.75@2.25; Alexanders, 1.75@2.25 bx.; Greenings, 1.75@2.25; Fall Pippins, 2.00@2.25.

Bananas, 7@8.

Blackberries: So. 8.00@9.00.

Cantaloupes: Per crate, 1.25@1.75; pony crate, 75@1.00; flats, 50@60; Honey Dew and Casabas, lb., 1½.

Figs, double layer: 1.25@2.00 bx.,

Brunswick, 75@1.00, single layer.
Grapes: Malagas, 1.25@2.00, Los Angeles lug; Fontainbleus, 75@1.00 per cr.; Rose Peru, 75@1.00; Muscat, 1.50@2.00; Tokays, 1.75@2.25.
Huckleberries, lb., 15@16½.
Loganberries, ch., 8.00@12.00.
Nectarines, red and white., cr., 1.00@1.25; bx., 1.25@1.50.
Peaches: Sacramento, 85@1.25 per crate; 1.25@2.00 per box; clings, 75@1.50 per box; Elberta, 1.00@2.00, according to quality.
Pears: No. 1, 3.00@3.50; No. 2, 1.00@2.00.
Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simon, 1.00@1.25; Santa Rosa, 1.00 @1.25.
Prunes: Fancy American blues, 2.50@3.00; choice, 1.00@1.80; according to size and weight.
Pineapples, doz., 2.00@5.00.
Quinces, bx., 1.00@1.50.
Raspberries: Ch., 16.00@18.00.
Strawberries: Ch., 11.00@13.00.
Watermelons, lb., 1@1¼.

HONEY

Demand improving slightly, market firm. Prices paid to producers: Extracted Light Amber Alfalfa, 14@15½; Light Amber Sage, 18½@19½.

BEANS, PEAS

Beans: Per cental: Small White, 8.25 @8.50; Large White, 7.50; Lima, 12.50@13.00; Pink, 7.00@7.25; Cranberry, 7.00@7.25; Blackeye, 6.00@6.50; California Bayos, 7.50@8.00; Mexican Red, 6.00@6.50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 6.25@6.50, in bond.
Dried Peas: Old crop, green, lb., 7½@7¾.

HOPS

1919 contracts per lb. around 55.

RICE

California: Fy., 12.00; ch., 11.75; flour, 4.75; Paddy, 5.00@5.25 per cwt.
These quotations are per 100 lbs. gross weight for double bags of either 100 lbs. or 224 lbs. gross.

GRAIN AND FEEDS

Oats: Red feed, 2.80@2.85; black, 3.00 @3.10 per cental.
Corn: California yellow, 3.65@3.75 cwt., Egyptian 3.40@3.50; Milo maize, 3.20@3.25.
Rye, 3.15@3.30.
Barley, Feed, 2.20@2.95.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 1-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00 @54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of September 13, Scott, Wagner & Miller says:

Receipts past week 2722 tons. The car situation has not improved any during the week. The market in this city has run along about the same as heretofore no changes to speak of with the exception that alfalfa hay has been more plentiful and if anything is a shade lower. Demands from country districts have slackened off considerably showing that many have already put in their winter's supply. This same condition applies to local consumers most of whom have already laid in their winter's stock. Fancy wheat or Red oat hay is in demand and very little of this grade has arrived. There is no inquiry for straw.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the Hay Market—for prices to consumer, charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay	
(light 5-wire bales)	17.50@19.00
No. 1 Wheat or Wheat and Oat Hay	15.00@18.00
No. 2 Wheat or Wheat and Oat Hay	12.00@15.00
Choice Tame Oat Hay	15.00@18.00
Other Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@14.00
Barley Hay	12.00@16.00
Alfalfa Hay	17.00@22.00
Stock Hay	8.00@12.00
No. 1 Barley Straw, bale	.50@80

Citrus Markets

Los Angeles, Sept. 17, 1919.

The supply of Valencias is being lowered every day, there being in the state around 3500 to 3600 cars yet to go. By the end of the month there will probably not be more than 3000 cars for October shipping. Prices are very satisfactory and in one or two auction sales rather spectacular prices have been secured. In the general market however, there are no exceptionally high prices.
There have been occasional long prices paid for lemons but in the main a very satisfactory condition prevails, prices ranging around $5.00 for good stock.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California: Oranges, 31,859 cars, lemons 8998, total 40,857. To same date last season; oranges, 13,586, lemons 5432, total 19,018. Central California this season: oranges, 4427, lemons 354, total 4781. To same date last season: oranges, 2539, lemons 115, total 2654. Northern California: oranges, 244, lemons 2, total 246. Last year same date: oranges, 203.

AT THE AUCTIONS

Sept. 11.
Philadelphia: 3 or., Val. 2.55-6.00.
Boston: 6 cars. Val. 3.75-5.05.
Cleveland: 2 or., 1 lem. Val. 2.90-5.55, lem. 4.70-6.40.
Pittsburg: 1 or., 1 lem. Val. 2.70-4.15, lem. 2.60.
St. Louis: 2 or. Val. 2.45-4.80.
Sept. 15.
New York: 30 or. Val. 2.30-7.60.
Boston: 6 or., 1 lem. Val. 3.00-5.20 lem. 8.10-8.50, grapefruit halves 1.50.
St. Louis: 2 or., 1 lem. Val. 2.05-4.25, lem. 5.05-5.85.
Philadelphia: 6 or., 1 grapefruit. Val 3.20-6.30.
Pittsburg: 5 or., 1 lem. Val. 2.30-5.30, lem. 5.05-6.40.
Cincinnati: 2 or., 1 lem. Val. 4.15-4.45, lem. 2.80-3.40.
Sept. 16.
New York: 20 or., 2 lem. Val. 2.70-7.45, lem. 5.00-6.35.
Pittsburg: 2 cars. Val. 4.00-4.80.

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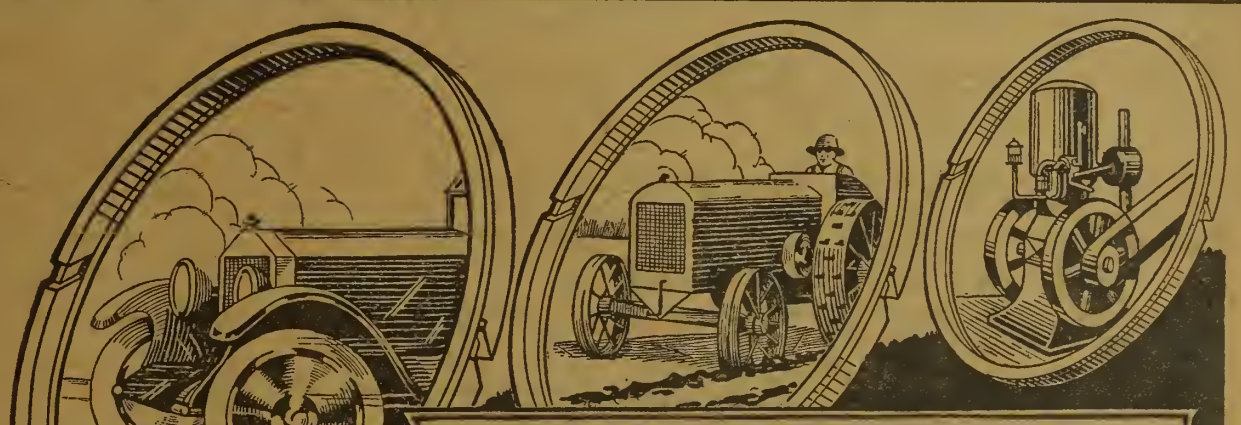

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Wherever you are and whatever your motor, you can get immediate service on these rings. Complete stocks of standard and over-size rings are carried by over 300 jobbers and supply houses throughout the country. Many thousands of dealers can extend to you our service, which enables them to specify your size requirements for practically every make or model of motor without delay. You don't have to wait.
Send for Free Booklet
"To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.
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RINGS
A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris LEAK-PROOF Rings in lower grooves to insure maximum compression and fuel economy.

One Cost for Light and Power

BRIEFLY—the Fairbanks-Morse 40-light "F" plant is an exceptional "buy" for these reasons—

Fairbanks Morse quality standards throughout. Engine is our famous "Z"—low speed—throttling governor. Construction of all parts is extremely simple and embodies the best possible workmanship and materials. Instrument board is mounted over the dynamo—dynamo is ball bearing. Push a button to start the plant and push another to stop it. Outfit comes complete, mounted on base. The engine can be used to driv a washing machine—churn—cream separator—etc., independent of the dynamo, either direct or throug' a line shaft.

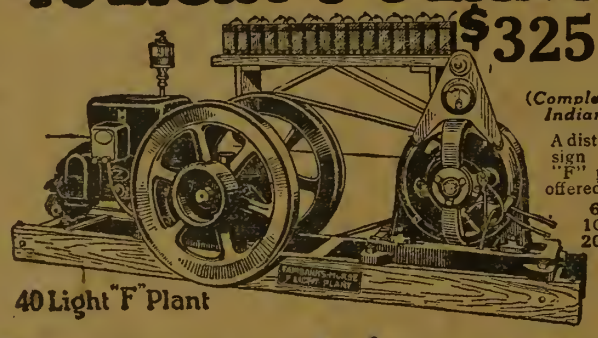
Your dealer will prove its reliability, point by point, so see the Fairbanks-Morse "F" light plant before you buy any.

40 LIGHT "F" PLANT $325

(Complete F. O. B. Indianapolis)

A distinctive design in larger "F" plants is offered as below:

65 Lights
100 Lights
200 Lights



40 Light "F" Plant

Fairbanks, Morse & Co.
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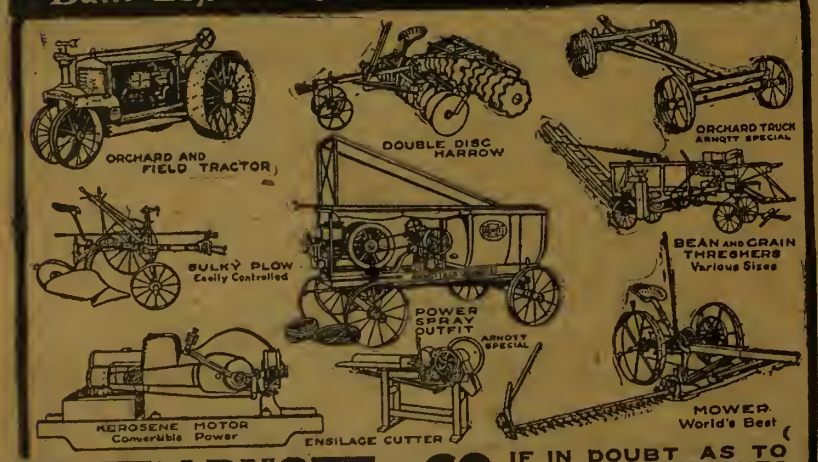
AGRICULTURAL IMPLEMENTS

Built Especially for California Conditions



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Was $100 Now $57

FREE TRIAL

Try the Oliver Typewriter 5 days free. Prove to yourself its value on the farm. See how quick you learn to operate it. If you decide not to keep it, send it back at our expense.

Save $43 on $100 Oliver

For $57 you now obtain the identical Oliver formerly priced at $100. A saving of $43. And you may pay for the Oliver at the easy rate of $3 a month while using the machine. Write for particulars of our new plan, and copy of our booklet, "The Oliver on the Farm."

The Oliver Typewriter Co.
376-O Oliver Typewriter Building, Chicago, Ill.

Health Hints for High Producers

By Jean A. Koethen

IF THE average bennery hen could read the pages of the average poultry publication she would be surprised, not to say dismayed, at the large amount of space which is devoted to the curing of poultry diseases and the very small amount which deals with the prevention of disease and the symptoms which indicate that her health is below par. Once a hen is really sick there is very little to be done for her. Doctoring is difficult and more often than not hopeless. If she could speak the little business hen that is doing her best every day in the year would surely say, "For pity's sake, keep me well. Don't neglect me till I begin to droop and then trust to dosing me back to health."

The ills that afflict the laying hen may be roughly classified as digestive, respiratory, contagious or infectious and accidental. Under the last class come such troubles as ovarian rupture, poisoning and other affections which cannot be foreseen or prevented. I should be inclined to put the condition known as cropbound in this class. It can be prevented to some extent by cutting up grass and grain but a hen that is on range will eat what she finds, and the occasional crowding of the crop with a mass that cannot be moved is almost unavoidable. Hennery hens, which are always confined, are not often troubled with bound crops.

Where does disease begin? More frequently than not, I believe, in filth. Heaps of manure on the dropping boards and in the yards not only furnish breeding places for mites, but they contaminate the air and pave the way for roup. Roup, scaly leg, intestinal worms, gape worms, are directly due to filthy surroundings. If filth is allowed to get in to the water basins and crocks—and we all know how easily this happens—diarrhoea and dysentery may result. But I believe California poultrymen generally are pretty careful of their water supply. It is in the cleaning of droppings boards and yards that they fail.

I am not scientist enough to explain just how it is that breathing the fumes from a heap of neglected manure all night makes a hen susceptible to roup, but I am satisfied that it does. Droppings boards should be cleaned so often that there is very little odor perceptible when you enter the house. How often this is depends on the number of hens in the house. I find that a house with room for 20 hens needs cleaning twice a week though only a half dozen hens are roosting in it. If the manure is left longer there is more odor than I like, and I can not believe the hens like it any better than I do. When a large flock is roosting in a house that is crowded to its capacity it would seem as if the droppings should be removed every day, but I know many successful poultrymen do not consider this necessary.

But removal of the droppings is only half. After they are removed the droppings board should be covered with dry dirt, sand, or some other dry material to absorb the odor and discourage the invasion of mites. In some up-to-date poultry houses a sand box near the roosts is part of the equipment, and the boards are covered with sand as soon as they have been cleaned. As we are not on sandy soil I have used dry oak leaves mixed with the dry granite soil underneath them, and find they absorb the odor perfectly. The use of lime on the droppings boards is not only unnecessary but is often harmful. One of my neighbors a few years ago lost half her flock from a liberal application of unslaked lime to boards and floors, and only last week I saw a little woman, who had put lime in her house because a neighbor said it was good for the chickens, lamenting the dropping off of hen after hen. Lime is all right in whitewash, but why put it under foot when sand or dry dirt is better and cheaper?

The only satisfactory method of cleaning yards is to remove the birds and plant a green crop in the yard. Many poultry plants now are arranged with double yards for each house so that the hens may occasionally be shifted from one yard to the other. Where there is no such arrangement, and hens are kept on year after year in yards that have only been scraped or spaded, the time comes sooner or later when the yards must be abandoned, at least for a time. A green crop is the only thing that purifies soil completely, and most experts advise the planting of such a crop once in six months. Just how frequently it is necessary depends largely on the character of the soil, but it must be done or the flock moved to new ground.

Symptoms of Disease

Every poultry keeper should familiarize himself or herself with the symptoms of disease, so that they may be detected as soon as there is the slightest departure from the normal. The best way to do this is to have at hand some reliable book or at least a bulletin on poultry diseases. The bulletin issued by the United States department of agriculture, entitled "Important Poultry Diseases" costs nothing but the postal card you use in ordering it, and is a recognized authority. A little book entitled "Poultry Diseases and their Treatment," issued by the Maine Station, Orono, Maine, costs 20 cents, I think, and goes into the cause and cure of all poultry diseases very fully. Then there is the Farm Poultry Doctor by Dr. N. W. Sanborn, published by the American Poultry Advocate, Syracuse, N. Y., which costs 50 cents, I believe, and another by Dr. Kaupp of the Missouri Station, which is perhaps a little more up-to-date. Our own experiment station at Berkeley has published several bulletins which may be had for the asking. There is one on the treatment of worms, another on chicken-pox, and very likely there are some still more recent. It is quite possible for the owner of the smallest flock to train his eye to recognize the first departure from normal in any of his birds and to change conditions or provide some simple remedy. Everyone knows that a hen that goes around singing and displaying a bright red comb is in normal health. It is just as easy to know that when the comb turns dark there is something wrong, probably a clogged liver due to heavy feeding, and that when instead of singing she mopes in a corner she is, to say the least, not in vigorous health and needs watching. It may be she is one of those slacker hens that are just too lazy to scratch, but there is a reasonable presumption that she lacks constitutional vigor. When I see a hen moping like that I kill her and eat her without inquiring farther, for I know she is not profitable.

Doctoring Digestive Troubles

Diarrhoea always means indgestion The hen may seem to be otherwise in perfect health, may be laying and singing, but if there is looseness of the bowels something is wrong in the feeding. Normal droppings are dry and hard. Droppings that are loose and brownish usually indicate a diet too rich in animal food, or it may be that the beef scrap is not as fresh as it should be. In such a case leave the beef scrap out of the mash for a few days and watch results. When the droppings are watery and yellowish or greenish the trouble is more serious, but it is still due to indigestion. It may be the ration is not balanced at all, that there has been excessive use of a single grain to the exclusion of others, or that spoiled food of some sort has been eaten. I doubt if we need in this climate to consider cholera as a possibility. It has been known in California, but is very, very rare. Serious bowel trouble is almost invariably due to improper feeding or a filthy water supply.

The first remedy in all digestive disorders is a dose of physic, preferably Epsom salts, because it is rather more easily given than castor oil Take care that the salts are fresh, for they lose strength if they stand uncovered. Half a teaspoon, or perhaps a little more, is the dose for an adult bird, and it is best given by dissolving in water and then moistening a

small quantity of the dry mash with the solution. Prepare only what the birds will eat up quickly, and if necessary keep other food from them till they have eaten this medicated mash. Some poultrymen put the salts in the drinking water but this is not to be recommended, for you never know how much the hens get, and it loses its strength standing for a day. One dose of salts, with the necessary change in the ration, should be sufficient in light cases of diarrhoea. If it is not the dose may be repeated.

When the crop is sour, a condition indicated by the running of a watery fluid from the mouth and a peculiar soft, inelastic feeling of the crop, soda is sometimes an effective remedy. Dr. Salmon recommends keeping the bird from 12 to 20 hours without food and giving two grains of subnitrate of bismuth and one-half grain of baking soda in a teaspoon of water to relieve the irritation and correct acidity.

The common practice of putting permanganate of potash or bluestone in the drinking water when anything is wrong with the chickens cannot be too strongly condemned. Permanganate of potash loses its strength when it stands in solution and is only useful when used as an antiseptic wash. Bluestone is another name for blue vitriol, a very powerful drug and of doubtful nature. Unless we know exactly what a drug is used for it is far better not to use it. The simple remedies we would use for the family are equally safe for chickens. Let us not be beguiled into using this or that drug just because somebody recommends it.

I had meant to speak of chicken-pox and roup, but this article is already too long, and they must wait for another issue.

POULTRY AT THE STATE FAIR

JUDGE Robert V Moore remarked: "This is one great show of poultry, which has been made in the face of adverse circumstances." Two full cars of high quality poultry were detained south of the Tehachapi, which made actual exhibits come materially under the entries. Notwithstanding that, it was one of California's best mid-summer shows of the pure bred. There was a great showing of bantams, 74 coming from one Oregon breeder.

Of rabbits, both fur and meat varieties, over 200 exhibits were made Of pigeons there were 300, which is much larger than the exhibit of last year. Barred Plymouth Rocks astonished everyone by their number and quality. Of these there were 141 as against ten total exhibits of last year. On the other hand, White Leghorns made the poorest exhibit of themselves they have made at a state fair for many years. White Wyandottes made a remarkable showing, but as a class not as large as that of the Barred Rocks.

AMERICAN CLASS

Barred Plymouth Rock

Ck.—1, P. A. Bryant; 2, G. H. Otterman; 3, Geo. D. Lubben.
Hen—1 and 2, Geo. Schmitt; 3, Rosecroft Plymouth Rock Yards.
Ckl.—1, Bryant; 2 and 3, Otterman.
Plt.—1 and 3, Otterman; 2, Schmitt.
Pen—1 and 3, Schmitt; 2, Otterman.
Ckl. Bred Pen—1, Bryant; 2, Schmitt; 3, R. P. Lutzi.
Plt. Bred Pen—1, Schmitt; 2, Bryant; 3, Poppy Hill Poultry Farm.

White Plymouth Rock

Hen—2 and 3, Edith N. Winslow.
Ckl.—2, Winslow.
Hen—1, Rosecroft.

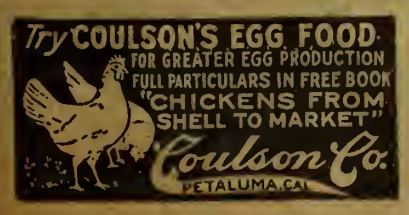
GERMOZONE The Best Pet Stock Remedy

For Poultry, Pigeons, Dogs, Cats, Rabbits, Parrots, Canary and other birds or pet animals, Germozone is a universal and safe remedy; for colds, snuffles, roup, sore throat, loss of voice or singing, influenza, bowel trouble, distemper, sore eyes or ears, canker, gleet, loss of fur or feathers, sores, wounds, skin disease,—or other affections of skin or mucous membrane.

"My hens have never done so well as this year and haven't lost a single chick"—Mrs. Flora Kapple, Walker, Ia. "Simply grand for rabbits"—L. W. Browning, Boone, Ia. "Cannot praise Germozone enough. I use it for chickens, stock and household"—Mrs. Wm. Hoeppel, Hugo, Okla. "My bird puppies don't know what distemper is and I never had such good success before with chicks"—Curly Smith, Kennett, Mo.

Germozone is sold by most drug, seed and poultry supply dealers, or mailed postpaid in 25c, 75c and $1.50 packages from Omaha. Book on treatment of diseases free with each package.

GEO. H. LEE CO. Dept. 418 OMAHA, NEB.



Golden Wyandotte

Hen—1, Manuel Roberts.

White Wyandotte

Ck.—1, H. C. Mather; 2, E. A. Corum
Hen—1, Geo. H. Burman; 2, Corum; 3, Jas. Y. Whyte.
Ckl.—1, Whyte; 2, A. C. Masteller.
Plt.—1, Burman; 2 and 3, Whyte.

Columbian Wyandotte

Hen—1, Reliable Poultry Yards.
Ckl.—1, Mrs. C. E. Ward; 2, Reliable.
Plt.—1 and 2, Ward.
Pen—1, Reliable.

Silver Laced Wyandotte

Ck.—1, Wm. A. French.
Hen—1, Roberts; 2, French.
Ckl.—1, Frank Blackwell.
Plt.—1, French.

Single-Comb Rhode Island Red

Ck.—1, Mrs. W. B. McCord; 2, Ward's Poultry Farm; 3, Wm. O'Connell.
Hen—1 and 3, Wards Farm; 2, Mrs. R. S. Spaulding.
Ckl.—1 and 3, Wards Farm; 2, Alta Poultry Yard.
Plt.—1 and 3, Wards Farm; 2, McCord.
Pen—1 and 2, Wm. Larm.

Rose-Comb Rhode Island Red

Ck.—1, Larm.

Light Brahma

Hen—1, 2 and 3, W. H. Lamb.
Pen—1, Bryant; 2, Lamb.

Dark Brahma

Pen—1, Lamb.

Partridge Cochin

Ck.—1, Bryant.

White Langshan

All awards to Geo. Lohr.

Black Langshan

All awards to Geo. Lohr.

Single-Comb White Leghorn

Hen—1, L. J. Amos; 2, A. C. and P. M. Forster.
Ckl.—1, Amos; 2, R. C. Galbraith; 3, Forster.
Plt.—1, Amos; 2 and 3, Forster.
Pen—1 and 2, Amos.

Rose-Comb White Leghorn

All awards to R. G. Baxter.

Single-Comb Brown Leghorn

All awards to M. C. Albrecht.

Single-Comb Buff Leghorn

All awards to Roberts.

Single-Comb Black Minorca

Ck.—1, French.
Hen—1 and 2, French; 3, Albrecht.

Single-Comb Buff Minorca

All awards to Wendell R. Mortimer.

Single-Comb Ancona

Ck.—1, A. C. Taggart.
Hen—1, Taggart.
Ckl.—1 and 3, Taggart; 2, W. L. Howell.
Plt.—1 and 2, Taggart; 3, Alta Yards.

ENGLISH CLASS

Single-Comb Buff Orpington

Ck.—1, Charlie Stewart; 2, Mrs. C. A. Carlson; 3, Blackwell.
Hen—1, Stewart.
Ckl.—1, Mrs. Chas. R. Ross; 2, Braemer Ranch; 3, Stewart.
Plt.—1, Ross; 2, Stewart; 3, Braemer.

Single-Comb White Orpington

Ck.—1, Carlson.
Hen—1, Lutzi; 2, Roberts.
Ckl.—1, Lutzi.
Plt.—1, Lutzi.
Pen—1, Lutzi.

Single-Comb Black Orpington

Ck.—1, Iveymoor Farm; 2 and 3, Sequoia Farm.
Hen—1 and 2, Sequoia; 3, Iveymoor.
Ckl.—1 and 2, Sequoia; 3, Iveymoor.
Plt.—1 and 3, Sequoia; 2, Iveymoor.
Pen—1, Sequoia.

Dark Cornish

Ck.—1, B. P. Lausten; 2 and 3, Geo. J. Bancherel.
Hen—1 and 3, Lausten; 2, Bancherel.
Ckl.—1 and 2, Lausten; 3, Bancherel.
Plt.—1 and 2, Lausten; 3, Bancherel.
Pen—1, Bryant.

CAPON

Single-Comb Rhode Island Red

Capon—3, Mrs. C. L. Woods.
Light Brahma—1 and 2, Henrietta W. McLagan.

TURKEYS

Bronze

Old Tom—2, D. T. Wieland.
Old Hen—1, 2 and 3, John G. Mee.
Yearling Tom—1, Mee.
Young Tom—1 and 2, Wieland.
Young Hen—1, 2 and 3, Wieland.

DUCKS

Fawn and White Indian Runner

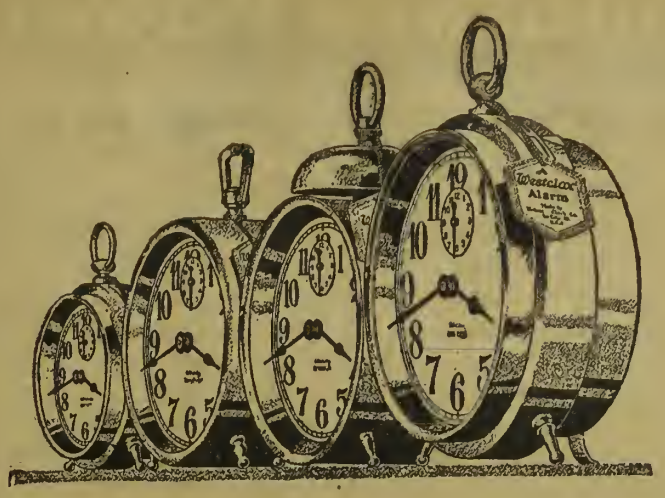
Old Drake—1, Wm. McGee; 2 and 3, Geo. D. Herbert.
Old Duck—1, 2 and 3, Herbert.
Young Drake—1 and 2, Wm. McGee; 3, Elwood McGee.
Young Duck—1, Herbert; 2 and 3, Wm. McGee.

Poultry Queries

Conducted by J. A. Koethen

I want to set a 400 egg incubator the first of the month with the intention of getting some fries on the Christmas market. What is the best breed?—Subscriber, San Marcos.

Both the Plymouth Rock and the Wyandotte make quick-growing fryers, but to my mind there is nothing quite so tender and juicy nor so rapid in growth as the Orpington. See poultry ads and liners in Cultivator for names of breeders.



Westclox

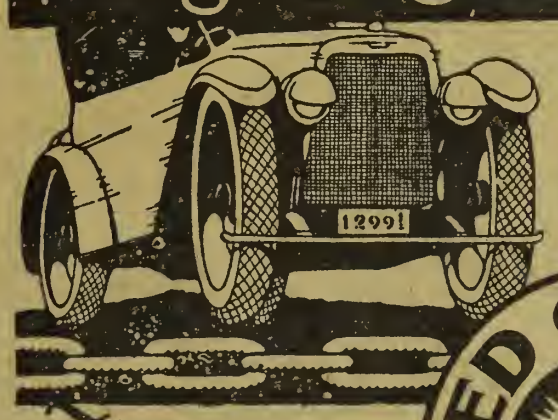
WESTCLOX is a short way of saying Western clocks. It means a line of good alarm clocks made by the Western Clock Co.

The trade-mark, Westclox, is printed on the dial of every one: also on the orange-colored, six-sided tag attached to each clock. These marks of quality make it easy to choose a Westclox alarm.

There is a strong demand for Westclox. The present increased capacity is not great enough to supply it. Big Ben, Baby Ben, Sleep-Meter and America have more friends than they can serve.

Western Clock Co.,—makers of Westclox
La Salle and Peru, Ill., U. S. A.

High Quality



"Red Crown" quality is proved by its performance. Look for the Red Crown sign before you fill.

STANDARD OIL COMPANY (California)

The Gasoline of Quality

RED CROWN GASOLINE

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency." Tells You Why.
Hauser Packing Company
Los Angeles, Cal.

When Time Counts

—when lost minutes mean lost dollars—many and many a man has learned to appreciate the real value of good tires.

An emergency—a quick trip to town and back!

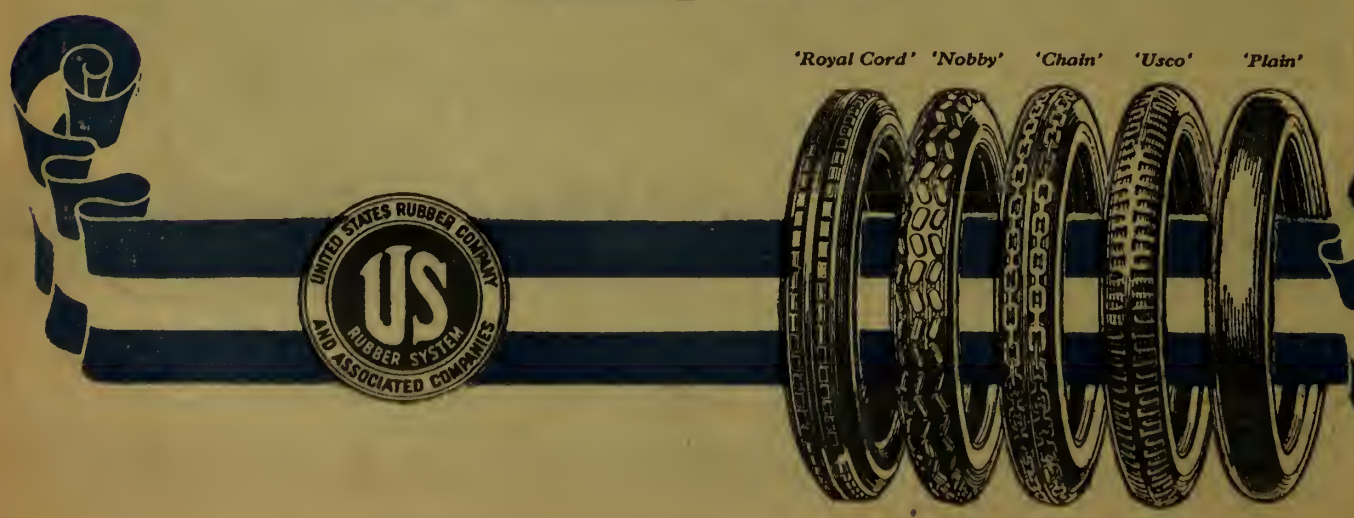
That's when you want to be *sure* of your tires—sure they'll carry you there and back without trouble or delay.

United States Tires are noted for their dependability—the hundreds of *extra* miles they give—their unusually low cost per mile.

And there are United States Tires for every need of price or use. *Five distinct types in all.*

No matter what car you drive or what roads you travel, the nearest United States Tire Sales and Service Depot Dealer can supply you with the tires you ought to have to meet your individual needs.

United States Tires are Good Tires



CA

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — September 27, 1919 — No. 13

THE SPIRIT OF THE 20TH CENTURY OVER LA BREA FIELD

Airplane photograph of the busiest spot in La Brea demonstration field. The aviation field and headquarters shown in upper left hand corner; below, on left of engraving, Arnold truck and auto display; circular tent in center foreground, A. F. George Company; the next, the eliptical shaped tent, Arnott; largest tent near center of engraving is general exhibition tent containing trucks, tractors, delivery trucks, pumps, oils and in fact the general exhibit of automotive power and accessories; small square tent at right of large tent, restaurant; next above it, National Automotive School; tent next above main exhibition tent, Hayman; circular tent adjoining, Bosbyshell; long tent, I. H. C.; circular tent, Fordson; other tents in upper right and autos indicate the main roadway along which tractor manufacturers maintained headquarters and demonstrated the use of almost every farm implement.

—the most remarkable reception ever accorded a new Tractor

The new California Orchard Model of the Allwork Kerosene Tractor, the

Allwork II

has performed so well that at this time

66 Allwork II Tractors Have Been Sold in California Since Its First Appearance, Sept. 9th

The Allwork II did all and more than was expected of it at the Tractor Demonstration. Its pulling power is phenomenal and while ordinarily the dynamometer pull for this size tractor can be found with an instrument registering up to 3,000 pounds—two such dynamometers were broken in testing the ALLwork II and the pull was registered with a dynamometer for registering up to 6,000 pounds. The ALLwork II pulled from 2,250 to 2,500 steadily on plowing speed and pulled over 3,500 pounds on low—enough to ordinarily handle a three-plow hitch. Nowhere can you find such a combination of good features for orchard work. The ALLwork II offers you the greatest pulling and operating value for the investment that can be found.

Some of the valuable features that made the Allwork II so adaptable to California conditions:

12 h. p. on drawbar
22 h. p. on belt
Individual rear wheel brakes
Rear axle differential

Only 4,000 lbs. weight
Only 55 inches high
Only 50 inches wide
Only 75-inch wheel base

Remarkably short turning
Burns kerosene or distillate
Three speeds forward and one reverse

Other Important Features:

The ALLwork II is equipped with special sand wheels haveing three rows of 6-inch pyramid lugs which give perfect traction in loose deep sandy soil.

Orchard models have the upper half of rear wheels entirely enclosed. It is all made to go under and around trees without breaking off limbs.

There are only 5 grease cups in the entire machine, three of which are on the motor.

The transmission, differential and worm drive are equipped with Timken bearings throughout. The jack shaft has Standard double thrust ball bearings and the rear axles are equipped with Hyatt roller bearings.

Differential in the jack shaft, and individual wheel brakes.

All gears are heat treated.

The ALLwork II has a five-bearing crankshaft.

It has three speeds forward and one reverse.

The same high grade material is used in this model that is used in the construction of the ALLwork 14-28 which has been so popular in the middle west the past six years.

ENGINE—Heavy duty, four-cylinder 4x6 kerosene motor. Develops 22 H. P. at the belt and 12 H. P. at the drawbar, running at 900 R. P. M.

FRAME—Is channel steel construction, reinforced with steel angles in all corners and hot riveted.

WHEELS—Rear wheels 42 inches in diameter, 10 inch face, equipped with 24 spade lugs 3 inches high. Optionals 36 inch wheels with lugs 6 inches high. Front wheels 28 inches in diameter, 4 inch tire with 1¼x⅝ inch steel band.

TRANSMISSION—Sliding gear, selective type.

GEARS—All gears, including bull gears and pinions, are of steel with cut teeth, and are hardened and heat treated for maximum service. Long life is assured by all gearing running in oil.

CLUTCH—Dry plate. Plates are lined with non-burning pressed asbestos fibre.

DIFFERENTIAL—Bevel gear type enclosed in dust proof case running in oil. Gears and pinions cut from forged blanks and case hardened.

CONTROL—Two levers, one operating the clutch, the other the speed changes.

STEERING—Tractor turns in eleven foot radius. Differential provided with double brakes to facilitate short turning.

It is Priced to be the Greatest of all Tractor Values

Dealers are finding the ALLwork II to be just the tractor the orchardists have long been wanting. It sells readily and is a service and satisfaction to the owners.

Orchardists who are looking for a tractor made especially for work in the citrus and deciduous districts of California will find in the ALLwork II many features not included in any tractor yet offered. Write for descriptive literature and any information desired.

Electric Wheel Co.,
914 Story Building, Los Angeles, Calif.

Please send descriptive folder concerning The California Orchard Model, The ALLWORK II tractor.

My Name .....

Address .....

Electric Wheel Co.

914 Story Bldg. **Los Angeles, Calif.**

L. M. RAILSBACK, Representative

Factories: Quincy, Ill.

M. K. Grant, Sacramento, Northern Calif. Dist.

California Cultivator

Vol. LIII, No. 13 Los Angeles, September 27, 1919 One Dollar Yearly

Tractors Demonstrate Their Ability as a Farm Power

THE spirit of the 20th century was certainly covered over the Ranch La Brea during the great demonstration. This in strange contrast with some of the activities on this ranch during the past years. These activities have consisted of excavations into the great beds of asphaltum, out of which have been brought the skeletons of great mastodons, saber tooth tigers and other prehistoric animals which were drowned in the mirey pitch in the long ages before man walked on the earth. The beds from which the excavations were made were only a stone's throw from these modern day activities, which were demonstrations of the help to mankind which is being given through the power brought up from the lower depths of the earth from wells in these same brea beds. The products of the oil wells were developing power to turn over the earth's surface, then to pulverize and prepare for seed beds for wheat and other foods of man; to cut and grind feeds for animals; to prepare the orchard for irrigation; to bring the water to the earth's surface to apply to the crops; to generate electricity for lights; to turn the churn, washing machine and lighten other strenuous work of the farm home; "Gas" was even made to lift those who desired into the air and show them the kingdoms of the earth lying below. Over the entire busy scene during the week of the demonstration airplanes were hovering constantly. Ten dollars for a 10-minute ride was an inducement which got many of those who wanted to get a view in large of modern day farming.

Manager O'Neill said, "Yes, this is our greatest demonstration. It has been a busy week for every member of the association. Many sales have been made, and these to discriminating buyers. California farming will be advanced by this week's work." Not a single attendant drove to the demonstration behind Old Dobbin but there were thousands of automobiles parked in all portions of the grounds every day of the demonstration. Car service to Los Angeles was fine and many came who did not drive. As a rule it was not a city crowd but busy inquirers after information and of buyers. The arrangements were by far the best which have ever been made for these demonstrations. Hot dog stands and restaurants both gave service which was satisfactory. Every exhibitor provided his guests with bottled water, and chairs and lounging places were in almost every tent. And every tractor dealer had his own tent for exhibit and for headquarters purposes.

There was dust aplenty but that is what a tractor demonstration is for. It raises the dust. One striking feature was a view given to those in the airplanes, on the first day or two at least, of the demonstration. A portion of the field was the stubble of barley field. The tractors with a gang of plows had been used to write their own names on these great fields. These names had been written in letters covering acres, and one might almost get lost wandering around in the letter O for instance.

* * *

DEMONSTRATION NOTES

The mammoth tent filled with tractor, truck, auto and implement accessories was one of the most instructive points in the demonstration. There were trucks, trailers, storage batteries, piston rings, greases, oils and fuels without stint; electric lighting systems; oil stove burners; mammoth pumping plants; magnetos; carburetors; seeds and plants; tire cement; self starters; many kinds of tires; wood sawing demonstration; fire extinguishers; even washing machines and other household labor savers.

A novelty was an automatic ridger and blocker. The ridger was very similar to the ordinary one which has been used for years in California or-

Continued on Page 407.

SOME TRACTOR DEMONSTRATION PHOTOS AND BIG TENT VIEWS.

Upper row of photos: At left, a group of the house of Arnott. From left to right: Willard Arnott, president; M. D. Schatzman, Los Angeles; A. H. Leimbrook, sales manager; A. S. Marlow, Western district manager; A. P. McKay, manager experiments with Towers & Sullivan Manufacturing Co., Rome, Georgia, manufacturers the McKay Power Lift Disk Plow with subsoiler attachment.—Center of top row of pictures shows scene in tent of B. Hayman and Company.—Upper right corner, some of the big ones of the International. Those standing, from left to right are: H. E. Daniels, branch manager, Los Angeles; W. G. Creswell, branch manager, San Francisco; Harry E. Price, assistant branch manager, Los Angeles; W. E. Price, blockman, San Francisco Branch; W. D. Zarley, blockman, Los Angeles Branch; Robert Stewart, district manager, motor truck department, Chicago; C. E. Creitz, blockman, Los Angeles Branch; Charles P. Hawkins, advertising manager, Los Angeles Branch.

Center Row:—Bosch magnetos spoke for themselves. Courteous attendants were there to make fullest explanation of their merits. The Coast manager of this big concern is Paul Furrier of San Francisco. The gentleman at the desk is H. B. Weaver.—Westrohack and Aggeler & Musser people, next door neighbors, demonstrated values secured by combining high quality seeds and legume inoculating cultures.— The next scene is that of the Germain Seed Company with exhibit of seeds, plants, nursery stock, spraying material, in fact everything of interest to gardener, orchardist or truck farmer.

Lower Row:—Left, shows one exhibit in Arnott tent. It is that of the McKay disk plow declared by one to be the sensation of the demonstration.—The next scene to the right is that of the Dreadnaught gas burner, exhibited by Scientific Specialties Company, Los Angeles. Albert E. Oiler in charge. Fuels of comparatively low grade are used for heating and lighting.—Look carefully at the big boulder suspended by big chains in the lower right hand picture. On it appears the characters 285. This indicates the number of pounds the boulder weighs. It is suspended by a narrow strip cut from the inner tube of a Norwalk tire. Must be rubber. Lichtenberger-Ferguson Co. of Los Angeles made this exhibit.

Agricultural News Notes of the Pacific Coast

Northern California

Glenn County had a fine exhibit of rice at the State Fair.

Yolo County had a State Fair exhibit of 92 kinds of grain.

Butte County is taking a census of fruit bearing trees in its territory.

The first Duroc-Jersey promotion sale will be held at Davis January 14.

One island near Stockton has 7000 acres in onions, 200 to 300 sacks per acre.

Some Chico cattlemen are vaccinating against blackleg, a few local cases being found.

Car shortage has resulted in but 25 cent cent grape shipments from several districts.

The El Dorado farm bureau will hold a picnic and fair at Placerville October 23-25.

The Indian Flat farm center of Nevada County has purchased a high class Durham bull.

Wyandotte farmers have made a live stock and seed survey and will exchange news of their needs.

Humboldt County made its chief horticultural exhibit at the State Fair in apples, a splendid display.

Esparto, in Yolo County, is a big tobacco growing center and had a big exhibit at the State Fair.

Cover crops was the subject at the last meeting of the Barry, Sutter County, farm bureau.

Harvesting of the Butte County fig crop started last week with an average price of 15 cents.

A large acreage of tomatoes around Oroville is commencing to move toward the city cannery.

Five agricultural clubs have been formed in Yuba County schools and more will be organized.

Gridley, Butte County, schools report a remarkable showing in cotton growing by a school club.

Northern California sheep men have sent big consignments of animals to the Salt Lake live stock sale.

Farm centers in the eastern part of Shasta County will hold a picnic and fair at McArthur, October 2-4.

State organizers are at work forming farm home improvement clubs in Sacramento County and others adjoining.

Professor Miller of Texas says the sheep exhibit at the State Fair showed the finest animals ever seen in California.

At Chico the supervisors will reconsider the truck ordinance and allow heavier loads on highways and bridges.

"Almond Fair, Arbuckle, October 3-4" was scattered all over the state fair grounds, the announcement printed on ribbons.

Two Woodland, Yolo County, farmers have just purchased $80,000 worth of sheep, 6000 being the number in the lot.

The potato tuber moth has been completely exterminated in the Colma district, so says District Inspector Rhodes.

The average potato yield of San Joaquin County is 80 sacks to the acre, some fields showing twice that amount.

Approximately 7,000 persons are engaged in picking hops in the Sacramento Valley, the wages being $5 and $6 a day.

Central California

Watsonville reports 50 cars of apples leave there each day.

The Lodi district sent out 93 cars of Tokay grapes on September 12.

Dos Palos reports loose alfalfa selling for $25 a ton and baled at $28.

At the Hanford fair 42 hogs brought $7,402.50, an average of $176.25 each.

The Pajaro Valley has shipped a total of 4,000,000 boxes of apples this season.

A sale of thoroughbred live stock will be held at the Riverside Fair, October 7-11.

The Lodi district reports this season's almond crop both large and of fine quality.

A merger has been completed of twelve cooperative creameries in the Fresno district.

Merced, San Joaquin and Stanislaus Counties have agreed on uniform rates for cow testing.

One grower at Los Banos has 800 acres of rice from which the expectancy is 30,000 bags.

The top price paid for hogs at the MacFarland, Kings County, sale last week was $16.50.

One vineyard of Sultanas near Orosi has yielded 70 tons of raisins from twenty-eight acres.

$17,500 in cash prizes will be awarded at the Fresno County fair which opens September 30.

A Lindsay grower reports eight tons of Manzanilla olives on three acres of eight year old trees.

The total amount paid to producers by the creameries of Kings County in 30 days was $325,000.

A government forecast of Tulare County's orange crop for 1919-20 season is 2,000,000 boxes.

The Sweet Potato Marketing Association has been organized in Stanislaus County with 200 members.

More than 6,000 persons attended the twelfth annual Escondido Grape Day Festival on September 12.

Nearly every car of Tokays from Lodi district has gone well over the $2000 mark in Eastern markets.

Two thousand acres of cotton will be harvested in Kern County this year and picking is now under way.

Because of a lack of cans the Visalia cannery was forced to close and ship all contracted fruit to Oakland.

The Karakul Sheep Company of Kerman has just shipped some thoroughbreds to Venezuela, South America.

Los Banos is "coming back" from the recent fire; two bank buildings, a hotel, and a garage will go up at once.

J. D. Norton of Mountain View says he will clean up $10,000 from ten acres of broom corn. The corn is now 14 feet high.

The Porterville cannery will be at once doubled in capacity, making it the largest of its kind in the San Joaquin Valley.

On October 2 the Madera Union High School district will vote on $100,000 bonds for improvement of buildings and equipment.

Kings County is to have a "Pork Day" at Hanford, October 15, when fat hogs will be received, judged, prizes awarded and the hogs then offered for sale.

Southern California

Anaheim will hold a carnival Oct. 4.

Baled bean hay at Oxnard is bringing $14 a ton.

Orange County claims one-half of the sugar output for 1919.

The peach growers about Pomona were paid a total of $275,000 this season.

Bishop is to have a new enterprise by the name of Virden Packing Company.

Bishop has no empty houses and the call for them is strong, almost daily.

Huntington Beach will hold a fair October 2-4, for Orange County officially.

A New York firm has purchased the thousand-acre Mission Vineyards at Ontario.

The 1919 cotton crop of Southern California is estimated at a value of $43,360,000.

More than 500 cotton pickers are in camp about Blythe, some all the way from Texas.

Imperial Valley carried its $2,500,000 water bonds last week by a three to one vote.

A rancher near Blythe was arrested last week for allowing Johnson grass to go to seed.

The Hemet Orange Growers' Association will hold their annual meeting September 27.

Mrs. Ethel Travis of Hement earned $10.08 working a 12 hour day in the local cannery.

Los Angeles will have a new oleo factory, built by Morris & Co., to employ 250 people.

One hundred and fifteen building permits were issued in Fullerton January to August.

A new bank has been started at Fullerton, known as the Standard Bank of Orange County.

It is said that undersized peaches are being shipped into Mexico for the manufacture of brandy.

Pomona reports five inch Phillips Cling peaches, the largest ever coming into the local packing houses.

A newly-patented date shredder which seeds and saves the cull dates has just been installed at Indio.

Brawley has completed a ten acre landing field for airplanes and the outlook for this season's crop is good.

California now leads the United States in seed protection, the bulk from central and southern counties.

The total receipts by the members of the San Dimas Fruit Exchange will be $1,250,000 over last year's figures.

The new date packing house at Coachella is completed and will open for the receiving of date on September 22.

Alamitos Bay is protesting against allowing the Alamitos sugar factory to have an outfall drain pipe to the sea.

Hemet announces that more packing space and additional canning facilities must be had for another year's crop.

The date harvest in Coachella Valley is in full swing except for the Deglet Noor which will not be ripe before October.

Oxnard reports lima beans coming in to the warehouses quite rapidly. Twelve cents is the price offered, with no sales as yet.

The Coast and General

The Pacific Coast is facing a sugar famine, especially of cane sugar.

Arizona reports a bad drop of prunes late in August.

When sold in Indiana apples must weigh 60 pounds to the bushel.

Texas is seeking to secure a permanent live stock building at the California state fair grounds.

The world's production of rice is nearly as great as the production of wheat.

There will be no lowering of meat prices in the near future, so say Chicago packers.

Washington potato growers will ship heavily of late table potatoes to California.

Central Oregon reports a 30 per cent increase in potato acreage over last year.

A cannery at Myrtle Point and one at Coquille, in Oregon, are being built to care for the berry crop alone.

Clarke County, Washington, is just starting to pick a 65 per cent maximum prune crop.

Tillamook, Oregon, has 25 cheese factories which last year produced 5,036,612 pounds of cheese.

Oregon reports that every dollar expended for sulphur on alfalfa lands has returned a profit of $20.

Twenty-five hundred dollars was offered for a ram at the Salt Lake sale, and refused.

Ninety-eight Australian farm students have arrived at Davis for a year's agricultural course.

The Western Berkshire Congress want a bond issue of $1,000,000 to improve the state fair grounds.

The State Fair's tractor exhibit was by far the largest ever seen in the state; many new machines were shown.

The Arizona 1919 state fair offers $20,000 in cash prizes. Floriculture and needlework made special departments this year.

The bureau of crop estimates give out the figures 23.072,000 barrels as the 1919 apple crop, compared with 24,724,000 for last year.

The Prince of Wales recently bought 50,000 bushels of wheat at the Winnipeg Board of Trade and sold at same price, just for experience.

Growers of prunes near Dallas, Oregon, are erecting their own drying plants. Heretofore they shipped to city dryers.

The Prescott, Arizona, fair will be held Oct. 16-18. Household economy will come in for more than its usual amount of attention and prize money.

The Whatcom County, Washington Dairyman's Association has decided to build a utility plant in Bellingham or Lynden, for it now has 922 members with 7804 cows.

Dr. Yelimir Stoykovitch, from department of agriculture of the Serbs, Croates and Slovenes, is investigating the methods of organization and operation of the new state department of agriculture.

Dr. R. H. Forbes, former dean of the Arizona college of agriculture, is now in Egypt studying agricultural conditions. He writes that he has introduced a number of varieties of wheat and legumes common to the Southwest, into Egypt, with quite satisfactory results for the first season

Bunk---An Editorial

By R. P. Royce

THERE seems to be no let up in the effort to disrupt the Milk Producers' Association. No sooner is one fight won by the producers than a new legal battle looms. Within the last ten days four complaints have been filed with attorney-general U. S. Webb by John W. Preston, former United States district attorney, acting for Mrs. M. M. Webster, charman of Northern division of the Federated Women's Clubs of California, Geo. N. Renner of Stockton, R. Holcomb of Fresno and S. M. Bailey, a former member of the Imperial Valley Milk Producers' Association, against the California Milk Producers' Association, the Northern California Milk Producers' Association, the Imperial Valley Milk Producers' Association and the San Joaquin Valley Milk Producers' Association. In the complaint it is asserted that the associations were organized as non-profit cooperative organizations but that in fact they operate as corporations organized for profit.

The press stories sent out last week by Preston claim that the California law permits the organization of non-profit cooperative corporations but specifically states that "No such non-profit corporation shall have capital stock nor shall it be carried on for profit."

Preston further says:

"The law excludes such corporations from the supervision of the State Corporation Commissioner, because it was never contemplated that any of them would attempt to unload bond issues on the public. The Milk Producers' Association has created one bond indebtedness of $180,000 and another of $90,000, which it is attempting to unload on the public through solicitors and agents."

According to the San Francisco Chronicle:

"The purpose of the suits now filed is to secure in the courts of San Joaquin, Alameda and Imperial counties a decision as to the right of promoters to control the output and sale of an essential food product by the organization of an association of such food producers as an ostensibly non-profit association, and then making large issues of stock for public sale.

"The suits now brought," said Preston, "go to the root of the question as to whether a crowd of bankers or others shall be permitted to organize corporations ostensibly not for profit but which are, in fact, organized strictly for profit."

If such be the case, it strikes us that every co-operative association in California is vitally interested in the outcome of the suits now filed. If, as stated, these suits are to determine the right of promoters (producers) to contract the output and sale of an essential food product by the organization of such food producers," it would appear that the result may be far reaching and affect the existing organizations. If the suits filed against the milk producers are in fact an effort to break down co-operative effort they should serve as a call to arms to all producers.

The Cultivator makes no pretense of being versed in the legal aspects of the case. But this we do know and believe: We believe in co-operative effort. We believe that all producers should have the fundamental right to organize to conduct their business and we know that if the present law does not permit such organization, then a law is needed that will.

The point raised in the suits filed, that the milk producers are organized for profit does not occur to us as startling. It has been our idea that each and every existing organization of similar nature was primarily organized for profit. Certainly we fail to see the need for organizing for any other reason. Increased profits through better marketing and stabilizing the industry is the backbone of all organizations.

The charge is made that the milk producers have built and are building plants throughout the state to manufacture and handle by-products. That it is the purpose of the organization to gain control of the dairy industry of California and thereby be in a position to set an arbitrary price—and usually the suggestion is made that the price will be exhorbitant to the consumer.

Apparently one of the favorite means for attracting the attention and sympathy of the public, and at the same time create dissatisfaction among the producers, is to not fail to omit the statement that the head of the state association is a banker—James Henderson, Jr., of Sacramento, and to refer to the association as "Henderson's Milk Trust." At times it is difficult to determine whether the real fight is directed against Henderson or the producers—but back of all, our readers can be assured, the fight is not on Henderson—any other man occupying the same position would come in for the same line of attack—and it is a real effort to break down co-operative enterprise. It makes no difference under what false colors the fight is waged. The instigators know the real issue involved.

Is there any real reason why milk producers should not own their own plants and manufacturing establishments for effectively handling their products, when other co-operative organizations own warehouses, shipping stations, grading machinery, etc.?

Is there any sound reason why dairymen should not attempt to control sufficient of their own product to be in a position to force a living price for their product, when nothing is more certain than if they were not in control of their product that they would be helpless at the hands of distributors?

Does the public suppose for a moment that the dairymen are not aware that the immutable law of supply and demand will always govern the prices for their products? And does the public not know that all the dairymen ask is a reasonable profit for their investment and labor?

Who would profit most if the milk producers' organizations were disrupted? The public? Hardly. The public would still buy milk and milk products and the distributors, who by no stretch of the imagination can be considered philanthropists, would exact from the public all that the traffic would bear.

Suppose that the organizations were put out of business and the producer placed at the mercy of the distributor—the prices paid producers would eventually get to a basis of cost plus a reasonable profit, else the dairymen would go out of business, thereby lessening the supply in the face of increased demand which would inevitably result in higher prices. Surely those "public spirited" persons who have lent their names and efforts to the fight against the producers are not looking far ahead. If neither the producer nor the consumer would profit by a disorganization of the association, who would? Only three parties are involved, the producer, the distributor and the consumer. Do not the above facts suggest the basis for the present fight?

Some factor will control the price of milk and milk products to the high point of supply and demand. Such being the fact, which would the public prefer—the producer or the distributor?

A series of circumstances surround any industry wherein the situation demands a change if the industry is to live, some sort of movement makes a start and, if sound in principle, grows. The various milk producers' associations were born of necessity and that necessity was the need of hinging about some sort of arrangement whereby the individual dairyman could be assured of a reasonable price for his product. In other words, the dairyman reached the point that the citrus grower, the prune, walnut and other growers reached and solved.

The public should be made to understand the real relation the associations bear to the consumer.

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Tractors and Tractor Boosters

At the top, an Ailwork tractor attached to Oliver. The crowd about are branch and district officers of the Electric Wheel Company and boosters for the tractor.

Twin City is capable of handling some remarkably rough and hard soil conditions. In the photograph are also shown district and state managers.

The Cleveland can handle a big bunch of disks or a disk plow. The third photo from the top shows two of them just off the field after some heavy work. In the background are shown Los Angeles and district managers.

A couple of Heiders. The rear one of the two shows three mold board plows raised as if for travel from field to field. The smaller type is just starting away with disk harrow.

The little Beeman, or should we say big Beeman when it comes to performance, was demonstrated every hour and every day of the exhibit. Its method of guiding is so simple that a little experience is sufficient that a boy in his teens may easily operate.

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and LIVESTOCK and DAIRY JOURNAL

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A birdseye view of a part of the ground of the Southern California Tractor Demonstration is given on the cover page. Such a view of such an event is an indication that we are living an age when things are different.

A GREAT DEMONSTRATION

The crowd was not as big as might be desired but the attendance of farmers with an eye to business was good. The buying was liberal and many sales were made of tractors to be taken direct from the demonstration to the barn. In other words, the demonstration of the Southern California Tractor and Implement Dealers' Association was a success. As to some of the scenes on the exhibition grounds, photos in this issue give quicker information than can be given on this page.

PORK OR GAS

Hogs are high. We recently heard of a man who apparently started out to help maintain their prices. He lived near Chicago where he was able to secure around $22 at that particular moment. It cost too much money to buy a truck to haul them in, so he drove them on foot. Result: 12 of the biggest and fattest died from heat and exercise. The 12 averaged 400 pounds. Net loss: over $1000.

It costs more than $1000 to buy a truck but at the same time it would have made a big start on one of the best make of trucks and be big interest for one year on the highest priced truck ever made.

FARM BEAUTY AN ASSET

A farm purchaser once remarked that he paid $5,000 more for his eighty acres because it had fine roadside trees on two sides. Asked why it was worth more he said it looked as though somebody owned it, and further stated that these trees, with those about the buildings made it the most beautiful place for many miles around. If this be true, how much the average rancher has to gain in land values! Consider bare ranch buildings compared with the same a year or two later, when blue gums have enclosed the area and a few vines clamber over buildings. One need not look twice to see that every dollar expended has added a hundred dollars in value to the ranch.

WHEN THE COWS COME HOME

We used to say when future prosperity was hoped for that comforts and luxuries might not be ours now, but when our ship comes in we will have all of comforts and give to our friends in abundance. For many of us the ship does not appear above the horizon as early in our life as we could wish. We are sure it is laden with gold and richest of fabrics which will increase our comforts. The ocean is wide and the little breezes seem hardly sufficient to fill the sails of the wonder ship. Many a Californian has tired of waiting for the ship and has established a dairy, and instead of "when our ship comes in" he now says "when our cows come home."

And the cows are coming home to California for dairying is increasing notwithstanding the bitter attacks which are intended to lessen dairy efficiency and fullest returns to the dairy owner.

THROWN CIGARETTES?

Southern California's sun is shining blood red through a layer of smoke and ashes fill the atmosphere. Pacoima and San Gabriel Canyons and even as we go to press, Arroyo Seco is a swirling mass of fire. The mountain sides and many a productive little valley have been changed from prosperous homes and beautiful summer resort home sites to desolation and ruin. Hundreds of square miles are being burned in spite of strenuous efforts of forest supervisors and rangers, aided by a small army of fire fighters. Housewives in Los Angeles, more than 25 miles away, find clothing on the lines smeared with ashes and soot from these fires. At street corners, where an eddy is formed around the curbing, little piles of ashes are made, and with it all suffocating heat is prevailing. The loss is appalling though not so immediately apparent as where merchandise filled buildings go up in smoke. But the loss is more real and will take a far greater number of years to restore. Irrigators of the San Fernando and San Gabriel Valleys will suffer for many years to come. As we go to press there is no promise of any early control of the fire.

This is the worst fire which has visited California forests for many years. But it is mentioned as an example of many a fire which, if not so disastrous, has been a cause of loss of California's productive power and even greater loss of beauty. And California beauty is a commercial asset. Only this week the great California Redwood Park near San Jose has been the scene of the disastrous conflagration and giant redwoods, thousands of years old, have been felled.

And all because of a bit of carelessness on the part of some one human.

STATE LANDS

Surveyor General W. S. Kingsbury will hold three public auction sales of state school lands unsuitable for cultivation during the month of October, 1919, in San Bernardino, Riverside and San Diego Counties.

The above item is mentioned in order to call attention to one word and that is "unsuitable." The Cultivator has been asked by farmers as to when these lands would be sold and we take it from the above announcement which is from the state surveyor's office, the lands are only suitable for mineral or oil development purposes. Any one who wishes fuller information should write W. S. Kingsbury, Surveyor, Sacramento.

GRAPHIC

We have been so busy up to the last moment of going to press that we haven't had time to count the number of illustrations which appear in this issue of the Cultivator. We are not even guessing at the number but we may be permitted to call attention to them as showing some of the work which confronts the modern day farm paper. Practically every illustration was taken with the Cultivator camera, and in fact those appearing in the paper are only those which have been left after discarding a far greater number which were taken by the Cultivator staff. In the rush and dust of such a demonstration it is very hard to get illustrations which will always answer for engraving. Hence a great number must be taken for selection. Some of the most interesting pictures are among those discards and we regret we have not room for them all. Really the greatness of a show is shown more by these illustrations than by any comment we may make.

(At the last moment the foreman says "Impossible to get in illustrations of seven of the tractor views. Will use them next week.")

NEW PROFESSION

Dr. Ford A. Carpenter was a pioneer in the service of the United States weather bureau. He has been with that service since its beginning and for several years has been in charge of the stations at San Diego and at Los Angeles. He has now retired from that service and is working with the Los Angeles branch of the service will be succeeded by Col. Hersey, who is also a man of long experience in weather bureau service who comes to Los Angeles from Milwaukee.

Dr. Carpenter will now begin pioneering in another service. He will enter the profession of consulting meteorologist and will make climatic investigations for intensive agricultural development. He will give attention to water resources and other matters pertaining to the application of weather science. He will be in charge of the department of meteorology and aeronautics of the Los Angeles Chamber of Commerce and has been elected lecturer in meteorology of the Southern branch of the University of California.

Naturally Dr. Carpenter's work is of that nature that it appeals to the larger landed estates or to counties or communities which wish information giving greatest control over labor operations which are influenced by meteorological conditions.

We believe there is a field for Dr. Carpenter's activities and will watch for developments in this the latest and newest in the agricultural world.

ANOTHER STRIKE

And now miners in Northern Ohio are striking for a six hour day, five days in the week, and 60 per cent advance in wages.

What's the use of working at all? Let's all strike and let the government support us.

BETTERING AGRICULTURE

Secretary Van Pelt writes regarding the Riverside Fair that a combination of public sale of pure bred stock and exhibition of pure bred and high quality products from Southern California farms is proving intensely interesting to the farmers of the South. More and more we are realizing the power for the good of agriculture for the farmer in the agricultural fair.

HEALTH IN CITRUS

The returns from the citrus industry have been increasing year by year, and at one time it was predicted that some day the citrus industry would become so great that fifty millions of dollars would be returned to the state because of it. But the past twelve months have given a crop which has brought prices that are above average, and this year alone it has been estimated, there will come to the state because of this crop in excess of seventy-five million dollars.

This crop has been grown on lands which at one time were in a class which would produce "nothing more profitable than horned toads and climate."

SELLING THE FARM

The Middlewest is having a land 'boom", especially the corn belt section. It has caused the formation of certain companies which were "buying" largely of real estate. Here is one instance given by the department of agriculture which is extending warning to farmers who may be inclined to be "easy".

"It is desirable to call attention to certain speculative practices now being employed which are entirely unfair in character. Certain corporations have been formed with limited liability for the purpose of enabling the promoters of those corporations to speculate in farm land in the name of the corporation without incurring personal liability for their purchases A still more reprehensible practice is being followed. Certain shrewd persons are purchasing land in the name of some "dummy" who is personally not good for the obligation The dummy subsequently resells the land to the actual speculator, though still retaining the liability. in case the speculator fails to resell. the dummy will be unable to fulfill the obligation. At best the farm will revert to the former seller, who may have lost the opportunity to make an advantageous bona fide sale.'

We have not heard of many operations along this line in California but knowing California characteristics it is entirely proper to pass the word along that we may be a bit careful as to who we "sell' to. We recently heard of the "sale' of a place for $9000, $25 down for a period of 30 days. The sale of course was never completed for the gamble on the $25 was called by financial conditions which would not permit a resale and a cleaning up of a few hundred dollars on the original investment of the $25.

DEMONSTRATE ABILITY

Continued from Page 403.

chards with an attachment, or rather two attachments, with two scrapers with trip dump or release. The release was connected with the tractor and operated by the toe of the tractor driver. It left the basin ready to be filled from the irrigation ditch.

One tractor, present only in model, is called a Hingeless tractor. This was placed on a pedestal and not in operation.

Kent Knowlton, formerly horticultural commissioner of Kern County, just back from the trenches, gave the demonsration the once over. He is to return to his former work.

Several of the tractors were equipped with gauges or measurers of draw bar power. By observing these the careful buyer could determine the exact draw bar power of each tractor. Figures determined by this means indicate actual performance rather than theoretical horse power.

the current in propelling sewing machine, washers, electric fans and other light household machinery.

"Demonstration" was not left entirely to tractors and farm implements. The preparation of the seed bed is important, the selection of the seed is equally so. The Germain Seed Company had a fine and attractive exhibit.

The R. M. Wade Company had the gasoline operated drag saw in operation. This is a light weight saw which will prove a labor saver on almost every ranch. It is comparatively inexpensive and beats hiring a husky at present day labor prices.

The Bosch Magnetos gave opportnity to many a tractor and truck owner to inform himself as to its methods of work and as to its efficiency. It was working in moisture saturated atmosphere; it was even working submerged—certainly a thoroughgoing test.

The great number of exhibits and

Sampson, strong as its name, General Motors Company, H. L. Marsh, Los Angeles manager standing with foot on draw bar.

For cotton, corn and other field crops, one of the newer Avery introductions, Manager Rainey of the Los Angeles office on the seat.

Yuba Ball Tread in various sizes demonstrated ability to handle varied problems. This is a 12-20 on a gang of disks.

The Moline Universal 9-18 hitched to Moline double disk and showing ease with which it demonstrates one man method.

Wallis tractor handled by Douglas Boswell Co., Los Angeles and San Francisco. Standing left to right, Douglas Boswell; Bruce Mitchell, Southern California manager; S. J. Clapper, president Toro Motor Cultivator Company, Minneapolis.

The big Killefer subsoiler with Mr. Hudson of the Los Angeles office standing on beam. The Killefers make tools which stand the gaff.

The LaCrosse, handied by Knapp Tractor and Implement Company, Los Angeles, Mr. Williamson on seat, Mr. Knapp standing.

The mowing machine was there. Tractor operated? Sure! And good for 20 acres per day.

Manager O'Neill is some tractor "fan" himself. He recently purchased a thoroughly dependable machine with full equipment for general farming and will soon be looking at the tractor game from the producer's standpoint. We regret exceedingly that the illustration, intended to show our readers the face of Manager O'Neill, proved defective.

The Delco Light folks make an exceptionally attractive exhibit showing the cleanliness, efficiency, and even economy of electricity in the farm home. The installation of their plant is now possible at a small expenditure and there is not only possibility for light and heat but for using the novel methods of calling attention to efficiency of the various greases and oils was educational and very valuable in proving the necessity of giving closest attention of lubrication of farm machinery.

Fire Extinguishers! Yes, they should be on every farm and every fair and exhibition these days gives opportunity to be informed as to their value.

Probably the most striking exhibit in the great exhibition tent was the monster 50 horse power semi-Diesel engine propelling the great centrifugal pump wih capacity of 150 inches on a 60 foot lift. It must have cost a great sum to make the installation of this pumping plant but it compelled attention on the part of every visitor.

Continued on Page 410.

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BARN PLANS

Going to build or remodel a barn? Then send for this book. 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Cost over $3,000 to compile. Yours free—for the asking.

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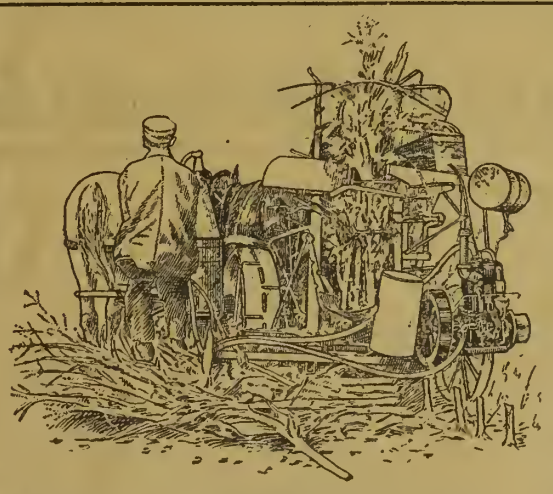

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Save Team
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CUSHMAN
Lightweight Engine
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Engine may be used for all farm chore-work after harvest.

Read and be shown how to cut out the hard work with profit.

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Humus and Nitrogen Bacteria
MELILOTUS INDICA Supplies Both
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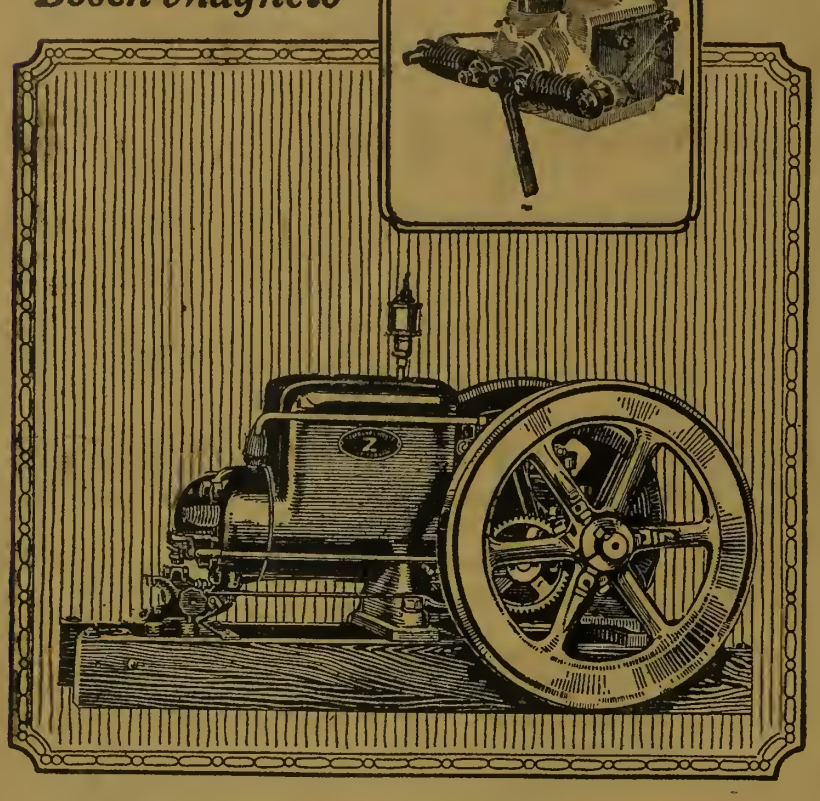
Buy only Melilotus seed that has a quality tag on each sack. It protects you against the low germination seed so general on the market this season. This seed is above 99 per cent pure and above 90 per cent germination.

The Greatest Combination

Fairbanks-Morse "Z" Engine with Bosch Magneto



WHEN the full meaning of this "Z" message is realized —mighty few farmers in America will fail to at once call on the nearest "Z" engine dealer. ¶ This example of master engine-building must be seen. ¶ Type and pictures can but suggest this value establishing achievement. ¶ By adding this one possible betterment—Bosch high tension, oscillating magneto—we complete a rare engine service, fully maintained by over 200 Bosch Service Stations in co-operation with every "Z" engine dealer—for all "Z" engine owners. ¶ Prices—1½ H. P. $75.00—3 H. P. $125.00—6 H. P. $200.00—All F.O.B. Factory.

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Sanguinetti's Quality Brand
(1919 Crop)
Alfalfa Seeds
Grown on Certified Fields
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VARIETIES:
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"THE HOME OF THE HAIRY PERUVIAN"

Hauser's Organic Fertilizers
Built for
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Send for Booklet, "Fertilizer Efficiency," Tells You Why.
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The California Cultivator
Weekly—24 to 48 Pages One Dollar per Year

Self-Sterile Plums

We recently submitted a question to Prof. J. C. Whitten of the University, as to pollenizing of various varieties of plums through planting of different kinds in one block. Prof. Whitten writes:

"In recent years this division has been carrying on experiments to determine what plums are self-fertile and therefore capable of bearing fruit when planted alone in solid blocks, and what plums are self-sterile or capable of bearing fruit only when another variety is planted adjacent to furnish the pollen for the fertilization of their flowers. Mr. Hendrickson of this division has now a bulletin in press giving the results of this work. The bulletin will soon be ready for distribution.

"All of the Japanese plums worked upon, except Climax were found to be self-sterile or nearly so. The Satsuma and Kelsey were found to be absolutely self-sterile every year. In no case have we found the Satsuma capable of setting fruit unless its flowers were pollenized with the flower of some other Japanese variety. The Kelsey was not capable of fertilizing it adequately. Any of the other Japanese varieties were capable of fertilizing it fairly well. Climax and Burbank gave the best results as cross-pollinators for the Satsumas.

"I would suggest that every fourth or fifth row of Satsumas in the orchard in question be top grafted next spring with either Climax or Burbank, the two varieties found to pollinate it most effectively. Climax is apparently slightly preferable. I think I should use it provided you find it otherwise a good plum suited to commercial uses in your district. If, however, the Burbank is a better commercial plum for the neighborhood, I would use it in place of the Climax.

"The Wickson plum fertilizes the Satsuma very well and should it happen to he the best commercial Jap ese plum, you could use it also to vantage to fertilize the Satsuma.

"We find that a row grafted in a pollinator can fertilize thoroughly least two rows of trees on either si so if every fifth row is top worked t intervening four rows should set fr well. This corresponds to the logi suggestion in your letter of top wo ing in order to furnish a good poll izer instead of driving nails in t tree.

"I understand that the Satsu plum is coming rapidly into favor a that not enough of them are produc in the state to fill the special dema for this variety. This is largely d to the fact, no doubt, that the Sat ma has proved self-sterile and the fore not a good bearer unless it ha pened to be grown adjacent to a v riety which will fertilize it. In vie of these facts, I would advise again uprooting the Satsuma plums, as feel sure the orchard could be ma profitable if a good pollinating varie is introduced into the orchard by t working.

"Where no pruning has been do for two years, the trees will no dou have a good many limbs which soo will begin to shade out the fruitin twigs below. I would advise prunin this winter by a judicious thinning o of the main limbs. They ought to t thinned out sufficiently that side fru ing branches can form and be mai tained all up and down these ma limbs in subsequent years. Growe who cease the heading back proce and adopt the long pruning syste often at first fail to thin out adequat ly. This often results in the tre setting an overload of fruit the fir year or two and in such an abunda branching system as to shade o fruiting wood low down on the ma limbs. This disadvantage can be pr vented by adequate winter thinnin out of branches."

Soil Blasting and Tile Draining

A great many of our California river valleys and coast sections which require underdraining have soil of the clay type, which drains slower than any other. The lines of tile must be placed deep and close together, for the height of standing water in the ground rises steeply away from each drain and comes to the surface but a short distance from it. In the stickiest soils it is not unusual to find a pipe line four feet under the surface drawing water from only about 25 feet to each side, while in more porous ground the filter level sometimes extends out 250 feet or more from the drain.

On all land which must be tile drained, it pays to assist this percolating of the water to the drain pipes by loosening the ground through proper blasting. By breaking up a heavy clay by means of explosives to a depth of four feet, drains can be laid every 200 feet, with entire success, where without the breaking they might have to be laid every 50 feet.

The depth of the level of standing water in the soil of course must govern the depth of the tile, yet if the ground is properly loosened, the tile may be placed considerably nearer the surface. For instance, if on a heavy clay the water table comes to the surface at a distance of 40 feet from a drain placed four feet down, the grade demanded by water in the soil is one foot fall in ten of distance.

Supposing it is necessary to kee the water table two feet below th surface for the crops grown, it the becomes necessary to have lines c dains no more than 40 feet apart. Bu if the same soil be loosened properl and given a due supply of organic ma ter in the form of roots of crops, th grade demanded will be more like tha required in open sandy soil, or on foot in 30 or 50, which would permi the drains to be 60 to 100 feet apar at least, while still keeping the wate table two feet below the surface.

The blasting serves other useful pur poses, besides assisting the drainag and to accomplish it not nearly s much labor is required as in placin the drains it displaces, which shoul he a big factor this year and for s v eral years to come.

The method of doing the work i that of ordinary subsoil blasting, us ing charges at the depth required, bu no heavier than will break the groun to the surface without blowing out cra ters. The distance between charg should be no greater than will insure the breaking up of all the ground There should be no harrier of unbrok en ground between them. For th ditches where the tile is to be laid it is not wise to excavate with ex plosives, because the dirt is sprea widely and beyond recovery. What can be done to advantage is the loo ening of hard ground to make the shoveling easier and quicker. This looscning requires blasting similar to subsoiling, though the charges ofto may be placed somewhat closer to gether on the line, and be slightly larger.

A Maxwell Truck you buy this Month will make you a present of its Total Cost in One Year.

More miles per gallon
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FIVE-thousand-dollar truck construction. Five-thousand-dollar truck guarantee. Worm Drive. 10-foot loading space. Electric lights and generator. 2400 pounds—we built it right to get it light—to save tires—to reduce gas consumption—to climb hills—to take bad roads—*and to keep repair bills down.*

For long hauls and short calls. Self-supporting. Amateur proof. Chassis $1185 f. o. b. Detroit.

If you like, take your time with the payments and let the Maxwell buy itself on the run.

Pays its way from day to day.

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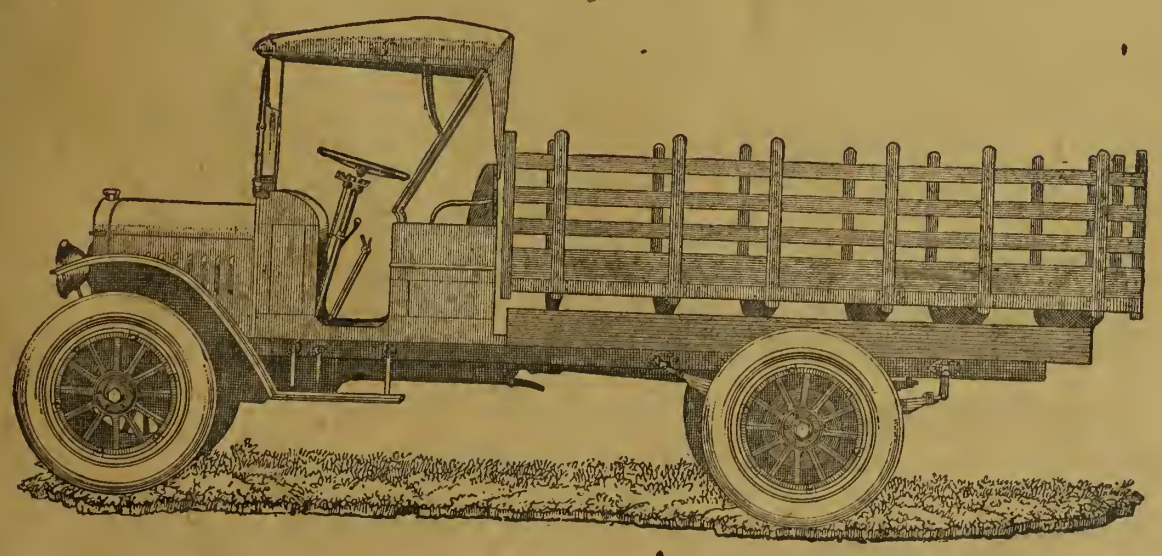

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Orchard Tractors

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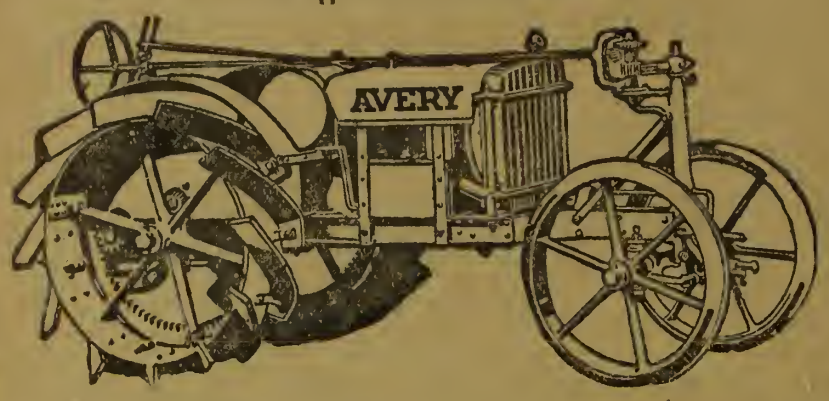

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The One that Delivers the Service under all California Soil Conditions.

The New Improved Davenport Doubleduty Disc is the last word in Disc construction for California Conditions.

The Davenport Doubleduty Disc rides through any soil condition like a battleship under full steam. It is built to work the soil the way you want it worked. Entire frame is of angle steel excepting braces. No sturdier construction was ever offered. Made for both horse or tractor in 6, 8 and 10 ft. sizes. A postcard inquiry will bring an illustrated circular.

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LA CROSSE TRACTORS---IMPLEMENTS

Knapp Tractor and Machinery Co.

416 Central Building . . . . Los Angeles, Calif.

Continued from Page 407.

The Westroback people came down from San Francisco with an exhibit which gave to many a cover crop specialist, and to every planter of seeds in fact, an inspiration as to help that may be had in farm operations from the tiny unseen, almost unknowable, bacteria. The Aggeler & Musser people are Southern California distributors.

The Bean tractor people had their little Trackpull zig-zagging orchard trees planted for the occasion. This is a regular operation which the Bean people have pulled off at many a tractor demonstration and it is a convincing one for many an orchardist.

The Wallis tractor handled by Douglas Boswell Company at San Francisco and Los Angeles, demonstrated the ease with which intractable soil may be handled where sufficient power is attached to modern day farm implements.

The 12-25 Union Sure-Grip tractor made at Torrance, made its first appearance at the tractor demonstration of 1918. It gave promise of being true to name but the present day model proves that its grip is sure.

The Holt exhibit was over the top on the other side of the trenches, but the majestic 75s handling 16 bottoms and other sizes making a most complete exhibit, succeeded in drawing a crowd. One of the newest exhibits of the concern this year was that of a monster land leveler with belt driven dumping device.

Robert Killefer of the Killefer Manufacturing Company was well pleased with the result of the demonstration. "We booked orders for twice or three times as many implements at this demonstration as at any other of the demonstrations," he said. "The people who attended were interested in the things that were offered."

Stanley W. Smith, president of the firm of Smith Bros., distributors for the Cletrac, couldn't stay away either. The Cletrac sign was one of the largest on the grounds and the exhibit of tractors included about everything a tractor could ever be used for. One patch of the Cletrac ground was staked off to represent an orchard and the ground was worked up as fine as anyone could possibly wish. Mr. B. S. Swearingen, sales and advertising manager for the Cletrac department of Smith Bros., was in charge of the Cletrac performance.

Harry R. Lamster, advertising manager for Wm. F. Hughson, distributors of the Fordson, was the man with the megaphone which he used with ability and not without effect. The Fordson exhibit was attractive and all patrons were given every attention. A luncheon was given the organization by Mr. Hughson Thursday noon.

C. L. Best small tractor throwing up big chunks of adobe with a Sanders 4-disk plow. E. I. Crook, manager Los Angeles.

Bean Trackpull circling tree with ease and handling big load effectively in cramped quarters. Bean spray pumps also exhibited.

Fageol 9 h. p. tractor handling an Oliver 3-gang 26 inch power lift disk.

Sandusky 10-20 tractor handled by Washburn Bros., Los Angeles. A. M. Babcock, local manager.

Allen 12-20 tractor pulling Oliver 3-gang 12 inch power lift plow. E. G. Judah, with white hat, president Community Mfg. Co., Los Angeles.

Trundaar tractor 20-35 handled by Wm. Gregory & Son, Los Angeles, drawing a 3-gang 28 inch McKay power lift disk with subsoiler attachment 14 inches deep.

Bates Steel Mule, Model 60, tearing up the hard adobe to a depth of 12 to 14 inches with a 3-gang 26 inch disk with subsoiler attachment.

L. M. Railsback, looking after the interests of the Electric Wheel Company of Quincy, Ill., showed the new orchard model of the Allwork II. attracted much attention and gave splendid demonstrations of its pulling ability. This tractor was first shown in California, September 9th, and since that time orders for more than six of the orchard model have been booked.

J. E. Williamson, district representative of the LaCrosse tractor in company with Mr. W. B. Knapp, demonstrated the LaCrosse tractor.

The Scientific Specialities Company kept the home fires burning. They had kitchen stoves, lighting appliances and cookers all in operation using distillate and low priced oil. Albert C. was in charge.

The new disk plow, the McKay, was exhibited for the first time on the Coast. One observer declared that this particular plow was "The sensation of the whole demonstration." It certainly had the faculty of cutting into the dobe and turning over the great clods. The plow is equipped with 2, 3 and 4 units, power lift subsoiler attachment and everything else strictly modern. To particularize on one other attachment, it is an automatic release, which in case the plow strikes a big boulder or a stump and causes extreme strain, the release works automatically. It is handled on the Coast by Arnott and Company.

The Pomona air cleaner was given a thorough tryout for the first time by some of the tractors. This cleaner is a combination of a former type of centrifugal cleaner and of oily fiber through which the air is drawn. In case the oily fiber becomes overcharged with dust or grit all that is necessary is to drop it into distillate, rinse out, apply a heavier oil and it is as good as new. This air cleaner is now used on Moreland trucks and several types of tractors. It is manufactured by H. H. Garner.

R. B. Wheeler, Western manager of the Roderick Lean Manufacturing Company, came from his headquarters in Salt Lake City to install an exceptional exhibit of harrows and disks. Every farmer may now find the tool to fit every duty. The distributor for the Southwest is the B. Hayman Company.

The Moline Universal 9-18 handled a big double disk with perfect ease.

Manager Babcock took pleasure in putting the old time favorite Sandusky through any kind of a job requested by inquirers.

President Judah of Community Manufacturing Company with a corps of efficient workers demonstrated the Allen 12-20 with Oliver three gang, 12 inch, power lift plows.

C. L. Best tractor 75s, also smaller orchard types, were demonstrated under direction of E. I. Crook, Los Angeles manager.

Wm. Gregory and Sons were demonstrating the Trundaars with McKay power lift, three gang disk plows, with subsoiler attachment.

The little 9 h. p. Fageol didn't look it but it really got away with three gang 26 inch disks through dry hard lobe.

The Bates Steel Mule, several of them in fact, gave field demonstrations Also connected with dynamo and furnished current for moving picture tent showing methods of work in factory and field work of the Steel Mule.

The Little Bear of the L. A. Auto and Tractor Company hugged up close to the collar and never wearied in showing its ability to do heavier work than looked possible. Manager Brush reports having secured agency with big order for the Little Bean from San Salvadore through an advertisement in the California Cultivator. The California Cultivator "Covers California," likewise some of the rest of the world.

H. H. Myers, sales manager of the Stockton Tractor, was a busy man in charge of the demonstration put on by his company.

W. H. Grove, in charge of the field demonstration work of the Rock Island Plow company, looked after the interests of that factory. Mr. Grove stated that the general layout of the grounds, the conveniences and arrangements were the best he had seen at any demonstrations anywhere.

Mr. Stansfield, traveling field representative of the Wilson-Wetterhold company of Wichita, attended the demonstration in the interests of the feed grinders manufactured and sold by his company through the E. P. Osbyshell Company.

Honore Griffin, the 12-year-old son of Mr. and Mrs. A. Griffin of La Canyada, was exhibit "A" at the Cletrac show. Honore is a Barney Oldfield when it comes to demonstrating the Cletrac, which he has run for his father for several months, doing all the work. His father states that the youngster has saved him a thousand dollars in wages in being able to take the place of a man in driving the tractor.

"Uncle Ben" Holt of the Holt Caterpillar attended the demonstration and avoided the cameras as much as possible.

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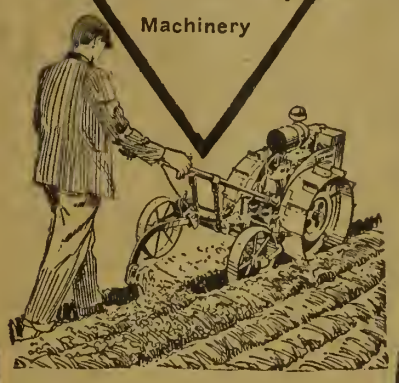
It Plows, Harrows, Cultivates, Runs any 4 H. P. Stationary Machinery



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Now Ready for Delivery

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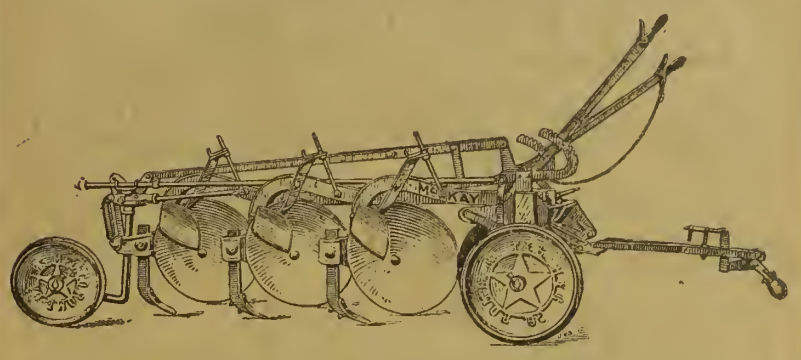
The McKay Disc Plow and Subsoiler

The Sensation of the 1919 Tractor Show



Especially adapted to hard ground and difficult plowing.

No shares to sharpen—no spring beams. If you want a real plow see our agents or write for full information.

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The Cultivator Costs Only $1.00 Per Year

PREFERRED and recommended by all tire dealers, Firestone Red Inner Tubes are best for most miles per dollar.

These Tubes are made by the antimony cure process. This gives them remarkable heat-resisting qualities, assures longer life to both tube and casing and gives the kind of service which is a real economy.

Look for the name on the Tube—indication of the best of rubber and workmanship.

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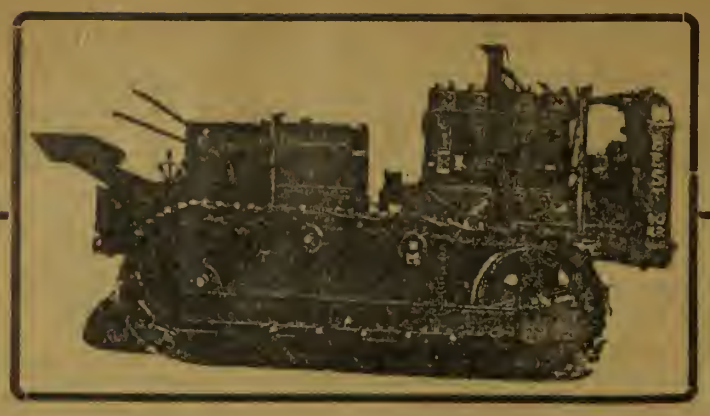


THE BEST EXHIBIT

AT THE TRACTOR SHOW

WAS TWO NEW TRACK LAYER MODELS

TRACKLAYER

C. L. Best "60" Track Layer

Best "60" Tracklayer like the "25," the ultimate in tractor construction. Thirty-seven anti-friction Hyatt and Timken bearings. Weighs 17,500 pounds. Does the work of 35 horses. Will stay on the job as long as it is given reasonable care and attention. This tractor is scientifically lubricated; easy of access. Built like a draft horse throughout. Requires minimum attention.

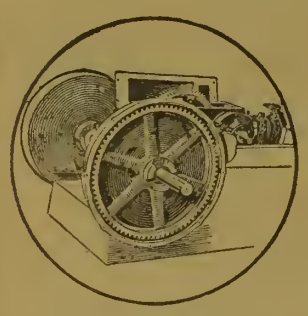
C. L. Best "25" Track Layer

Best "25" Tracklayer. An anti-friction tractor driven by a heavy duty slow speed Best motor. Designed to meet the conditions under which this tractor must work. Built to last a lifetime with proper care and attention. Pulls its width in plows—runs on the land, not in the furrow.

E. I. CROOK
Southern California Distributor
C. L. BEST GAS TRACTION CO.
256 South Los Angeles St.
Los Angeles - California

The LAUSON Wins Again

at Grand Forks, N. D.



All gears, including the final drive, are fully enclosed in a dust proof housing on the Lauson.

The city council at Grand Forks needed a tractor for road work. In order to determine the tractor best suited they had a competitive demonstration of the leading makes of tractors.

The LAUSON was selected as the tractor most perfectly qualified for the hard service entailed in the work of road-making. The important feature of the LAUSON in this connection is that all the working parts are completely enclosed. This keeps out the dust, dirt and grit which are ever present whether the tractor is working on the road or on the farm. By keeping the dust and dirt from the gears there is no loss of power through friction. There is no grinding of gears by emerylike dust and the possibility of breakdown and wear is thus minimized.

This is one of the features which has helped to make the LAUSON the "Pattern Tractor." If you would like to know the others we will be glad to send you full particulars on request.

Distributors for Oregon, California, Arizona and Nevada
DE LAVAL DAIRY SUPPLY CO., 59 Beale St., San Francisco, Cal.
THE JOHN LAUSON MFG. CO., New Holstein, Wis.
Write for interesting Tractor Bulletin No. 65

California Cultivator
Costs $1 per Year

The Evolution of the Tractor

By H. C. Heard, County Agricultural Agent, Maricopa County.

THE RAPID development and the great changes which have been made in the automobile industry are well known and interesting to all. In fact, automobiles, and of late aeroplanes, are thought of as the most sensational developments of modern mechanical genius. At the same time the tractor industry has been quietly and unostentatiously plugging on and really deserves more credit for the remarkable things it has done than it is given. On the big grain farms of the North and West steam power was early developed to run threshing machinery. It was a great step forward when some bold mind conceived the idea of coupling up a transmission, clutch and differential gear to enable the old engine to pull the separator from one job to another, for the large and heavy separators were quite a load to move and required so many horses that there were not enough left with an ordinary outfit to move the trap and bundle wagons without delay.

Another enterprising genius conceived the brilliant idea that if a steam engine could be made to pull a mammoth separator and a string of cars it might also be made to pull a plow.

The next enterprising genius conceived the idea of mounting a gasoline engine on about the same kind of running gear that the steam tractor had used. This labor saving device sometimes required most of the people in a community to start it, and once it got going it was by no means certain whether it would be stopped purposely or against protestations. It is even rumored that many operators hired men to sit up all night and keep the engine idling along to do away with the trouble that was expected from trying to start the machine cold. This type of tractor again developed the fact, which automobile makers already had found out, that no material was too good to put into a machine of such type and that a light piece of the very best of material was much better and more dependable than a big piece of cast iron. Operators also found out that the biggest expense incurred in a breakdown was not so apt to be in the cast of the new part or in putting it in but in the time lost. Furthermore, manufacturers had the habit of selling tractors to inexperienced operators, under untried conditions, for a small payment down and the balance by installments. In a few years the manufacturer owned most of the machines he had sold, and often was in difficult straits financially.

It looked to some as if the tractor game was a failure. Possibly some ideas borrowed from the automobile industry were the main saving features at this time. Small machines, modeled largely after their titanic predecessors, were put on the market and sold in many cases for cash. Since the vast number of farmers of the country operate fairly small tracts of land a bigger trade outlet was opened up. The farmer on the other hand was skeptical. He soon found out that the gas engine had been developed in the meantime and that it was possible to operate a tractor profitably. The remaining development was rapid, for the small farm tractor opened up the field in such a manner that a cash basis of trade could be used by the manufacturer and he was able to cheapen his costs of doing business.

The tractor has had a period of freak designs, from which it is just emerging. The war made labor-saving devices necessary and has put a good deal of money in circulation, times have been prosperous and in a very short space tractors have appeared in great numbers modeled after sensible designs, with moving parts completely protected from dust, the very best of materials have been used in the most delicate parts, the mechanism is fool proof to a large degree, but on the other hand, the operators have learned that just anybody can't run a tractor satisfactorily. The methods of doing business from the manufacturer to the retailer are sound, sufficient numbers of various makes are in use that repair parts and expert service are quickly available, and buying a tractor will soon be as safe and require as little investigating as buying an automobile.

SOW WHEAT PROMPTLY

A number of complaints were received last fall that wheat did not come up well after treating the seed with formaldehyde for smut prevention. In some cases this was due to failure to follow directions in giving the treatment, according to plant pathologists. In the majority of cases, however, the treated grain was kept several days or longer before sowing. Prompt sowing will prevent killing the germ.

It is recommended that wheat be treated in small lots only and sown as soon as it will go through the drill. It may be treated in the evening and sowing begun early the next morning. Some farmers treat in the evening what they can sow the following forenoon and in the morning what they can sow in the afternoon. Small lots are more easily and thoroughly treated and there is less danger of loss in case rainy weather should delay seeding.

Wheat may be treated by the sprinkling formaldehyde method or, if very smutty, by the soaking and skimming method. Directions may be obtained from the county agent or from the agricultural college extension service of the Ohio State University.

CELERY GROWING IN CALIFORNIA

By R. G. Risser

"Celery growers who have land in California should go very slow about moving to Florida to grow the crop." This was the statement made in the celery fields of El Monte by John E. Wade, manager of the Sanford Farmers Exchange, Sanford, Florida. After visiting all other important celery districts in the United States Mr. Wade was the guest of the crop production department of the California Vegetable Union on a brief trip through the celery fields of Southern California.

"In Florida we use from two to four tons of the highest grade fertilizer obtainable on each acre of celery land," said Mr. Wade. "We grow the plants in beds under canvas. We set them 3½ inches apart in the rows and 36 inches between rows. We spray regularly. We blanch with paper which comes in rolls and is held in place on each side of the row by wire wickets. We ship in crates about half as large as yours but only 16 inches high."

Before coming to Southern California Mr. Wade visited the Delta district on the Sacramento River. He was much impressed with this great district and declared that the island which he inspected was the finest celery land he had seen in the United States.

It was Mr. Wade's opinion that the crop in New York and Michigan would be marketed especially early this year and would therefore interfere less than it does sometimes with the marketing of the California crop. He said that New York celery men were not inclined to store and the late celery in Michigan had been seriously hurt by drought.

COMMERCIAL POTATO REPORT

The bureau of crop estimates issues the following quantitative report and comments on the late or winter commercial potato crop of the United States based on conditions September 1. This report deals with that portion of the crop shipped in carloads and represents the surplus or highly commercial movement.

The states in the following table include all those states producing late potatoes in considerable commercial quantity for other than local market. The carload movement of late potatoes from these states this year is now estimated at 123,518 cars or approximately 86,462,600 bushels, as compared to 146,048 last year, or 102,233,600 bushels or 85 per cent of last year's commercial crop. Indications are that the commercial crop of late potatoes is about 10 per cent less than the average. In general the crop is very good in the East, which indicates a production of 40,818 cars in Maine, New York and Pennsylvania, or 94 per cent of last year.

In the heavy producing states of Michigan, Wisconsin and Minnesota, the production promises to be 55,075 cars as compared to 63,510 cars last years, or 86.7 per cent of last year. The Rocky Mountain states have a comparatively light crop, and Colorado, one of the very important states in the country in late potato production, promises but 68 per cent of last year's crop.

The Northwestern states of Oregon, Idaho and Washington promise to ship about 11,500 cars as compared to 13,205 last year, or 87 per cent of last year's crop.

Among the states highest in production Maine promises to lead with 24,468 cars, 700 bushels to a car, of which 20,883 cars will come from Aroostook County. Minnesota second with an even 24,000; Wisconsin is third with 20,800, and Colorado and Michigan are nearly tied with a few more than 10,000 carloads. Blight and rains reduced New York's crop by one-fourth. Unfavorable conditions are reported from Colorado, Idaho, Oregon and Nebraska.

This report does not give figures for California and in explanation states that figures are for late and storage potatoes, "while the very large production of California and some other states is largely early or truck potatoes." The total production of California last year was over 18,000 carloads and we ate them all. We also grew about 1500 cars of sweet potatoes.

FIFTY-SECOND FRUIT GROWERS' CONVENTION

By Bronte A. Reynolds

At a meeting of the committee called at Chico, 1 p. m., September 16, it was decided to hold the Fifty-second State Fruit Growers' Convention the second week in November. The county horticultural commissioners will hold their meeting during the first two days, November 10 and 11. On the afternoon of the 11th a visit will be made to the United States plant introduction gardens located southeast of Chico on Butte Creek. The Convention proper will commence on Wednesday, November 12, and continue until Saturday afternoon, November 15.

Wednesday will be occupied with a consideration of cooperation and standardization. Thursday the meeting will be at Oroville and the subject will be citrus and olives. Friday the meeting will be at Chico again and the subject will be deciduous fruits. Saturday the convention will meet at Durham, the morning being devoted to an inspection of the state land settlement there, and the afternoon to a general farming discussion.

THE TRAILER LEADS

That may sound contradictory but when it comes to reducing expenses of light hauls to market the trailer heads the list. It has been estimated that it costs but an eighth as much to haul as it would to haul the same load with horses, so that now the trailer is looked upon as part of the equipment of every up-to-date rancher. The saving of time is of course the value of the change from horses. In purchase of a trailer get one that is hung low and does not wabble or side lash. Some are so unstable in the latter respect that good speed cannot be made.

SOUTH AMERICAN MARKETS

During the last month W. W. Ewing, trade commissioner of the department of commerce, has been covering California and telling us of the fine chances for marketing our wares in South America. In his recent trip he covered every part of the continent except Paraguary and the Guianas. As the west coast is the side of the land that most interests us, it is of interest to know that good markets are to be found there for lumber, cement, food products and flour.

FACTS FOR FARMERS

The Los Angeles public library is doing good work for those interested in agriculture, and especially so for the practical farmer, in gathering a fund of information which touches upon the science and practice of farming. To the end that this information is available the library has issued "Facts for Farmers" giving a selected list of books on agriculture, horticulture and animal husbandry. This booklet is free to every patron of the library and every producer who happens in Los Angeles with a spare moment on his hands will find it to his benefit to visit the library.

ENFORCING GRAIN REGULATIONS

The United States Grain Corporation is enforcing its regulations with dealers who are lax in observing the rules laid down as to profits, etc. A big Texas concern has just been deprived of its license to handle grains because of its violation of the food control act.

Motion picture films have been issued by the department of agriculture showing fruit growing activities in California.

Melons ripen more evenly if placed on boards or tile.

The Tractor to Buy

ARE you one of the many farmers who need more power to handle the farm work properly? Do you have to work with less help than you need?

If so, you need an International kerosene tractor. The size that gives you power for your heaviest load will handle all the work. Internationals use only as much fuel as the load requires. They are made to work with farm machines—the kind you are now using—and special hitches are provided for all kinds of field and road work. Their belt pulleys are large enough to prevent slippage, run at correct speed, and are set high enough to keep the belt off the ground. They all use kerosene or other low-grade fuels which means a big saving in operating expense.

The Company to Buy From

You know that we have supplied farmers with high-grade machines for nearly 88 years. You know that our tractors have furnished satisfactory farm power for more than 12 years. We have far too much at stake to market machines of any but the highest standards of quality. We expect to come back some day and sell you some other machines in the long list you see in this advertisement. In every sale we try to build for the future.

Tractor Service Whenever Needed

In line with this policy, we have developed a service organization which now consists of 89 branch houses and many thousands of loyal local dealers, wide awake and attentive to the needs of their customers. Service is a very essential part of any tractor sale. When you buy an International kerosene tractor you buy with it the assistance of an organization that brings a well stocked branch house or a live, local dealer within telephone call, fully equipped to keep your tractor working steadily.

International Tractor Sizes

International tractors, all using kerosene for fuel, are made in 8-16, 10-20, and 15-30 H. P. sizes. A line to the address below will bring you full information about all our tractors and about any other machines you mention in the list shown in this advertisement.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders, Push Binders, Headers, Rice Binders, Harvester-Threshers, Reapers, Shockers, Threshers

Tillage Implements
Disk Harrows, Cultivators, Tractor Harrows, Spring-Tooth Harrows, Peg-Tooth Harrows, Orchard Harrows

Planting & Seeding Machines
Corn Planters, Corn Drills, Grain Drills, Broadcast Seeders, Alfalfa & Grass Seed Drills, Fertilizer & Lime Sowers

Haying Machines
Mowers, Tedders, Side Delivery Rakes, Loaders (All Types), Rakes, Combination Side Rakes and Tedders, Sweep Rakes, Stackers, Combination Sweep Rakes and Stackers, Baling Presses, Bunchers

Belt Machines
Ensilage Cutters, Huskers and Shredders, Corn Shellers, Threshers, Hay Presses, Stone Burr Mills

Belt Machines—Cont.
Cream Separators, Feed Grinders

Power Machines
Kerosene Engines, Gasoline Engines, Kerosene Tractors, Motor Trucks, Motor Cultivators

Corn Machines
Planters, Drills, Cultivators, Motor Cultivators, Binders, Pickers, Ensilage Cutters, Shellers, Huskers and Shredders

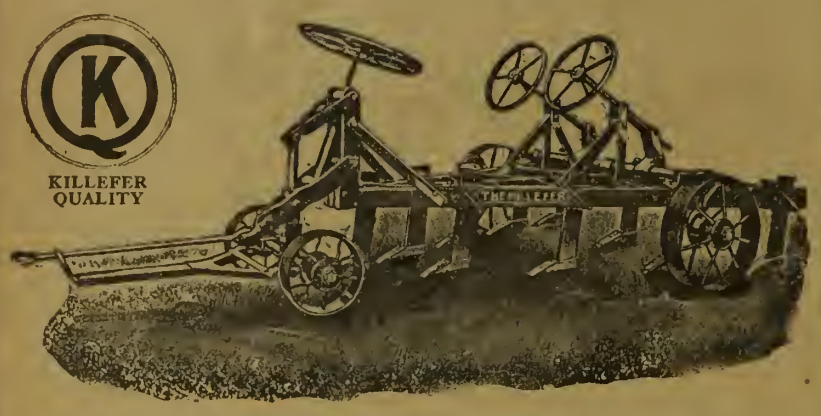
Dairy Equipment
Cream Separators (Hand), Cream Separators (Belted), Kerosene Engines, Gasoline Engines, Motor Trucks

Other Farm Equipment
Manure Spreaders, Straw Spreading Attach., Farm Wagons, Farm Trucks, Stalk Cutters, Knife Grinders, Tractor Hitches, Binder Twine

International Harvester Company of America
(Incorporated)
CHICAGO U S A

8 Ft. Extra Heavy

TRACTOR CHISEL



Now is the time to commence deep chiseling and subsoiling. Do it in time to prepare the ground thoroughly to receive the benefit of the winter rains. Break away from the old habit or mistaken idea of scratching the ground and expecting to harvest a crop.

Plow pan, although frequently referred to as mechanical hardpan, should not be confused with natural hardpan. However, so far as crop production is concerned, the effects of plow sole and hardpan are the same. Both must be destroyed before proper cultivation can be had, and the only difference in the two that will be considered here is in the method required for their destruction.

Plow sole offers less resistance to the available methods of breaking it up than hardpan, and, with the tractor and tool of sufficient strength now available for tractor use, it can be broken up and subdued, bringing the land back to the point where a full yield may be expected.

Plow sole offers less resistance to tillage implements than does hardpan; both are in many cases impervious to horse teams and ordinary plows and in some instances are difficult of handling with tractors and modern implements. Yet before a full yield may be expected this condition must be subdued, and to date the only satisfactory means is by use of the chisel or subsoiler.

We Manufacture

Deep Tillage and Other Agricultural Implements
Extra Heavy Tractor Plows — Automatic Double Tractor Discs
Automatic Cover Crop Discs
Tractor Chisels — Orchard Cultivators
Monarch Cultivators — Automatic Beet Plows
Cross Kills or Clod Crushers
Gopher or Drainage Plows — Subsoil Plows
(One, Two, Three and Five Standards)

Send for Catalog and Prices

The KILLEFER MANUFACTURING CO.

2209-21 Santa Fe Avenue, Los Angeles, Calif.

B. Hayman Co. Inc.
Since 1876

WAGONS AND AGRICULTURAL IMPLEMENTS

118-120 N. LOS ANGELES ST.
LOS ANGELES, CAL.

Oliver Plows. Roderick Lean Disc Harrows
Forkner Tillers — Planet Jr. Cultivators
Studebaker Wagons

Perfect Farm Machinery

Have You Seen the
INTERNATIONAL
DEHYDRATOR?

You are invited to inspect a Real Working Dehydrating Machine.

GET YOUR ORDER IN

We are now booking orders for next season's deliveries. Save all of your fruits and vegetables and get Dehydrated prices for them.

MAKE MORE DOLLARS.
Write for demonstration appointment.

The International Dehydrator
506 Chamber of Commerce Bldg., Los Angeles, Cal.

Tizit Spray

The premier insecticide and fungicide
Since 1914

Tizit Spray Mfg. Co.
1344 Willow Street
Los Angeles

Exchange members may be supplied through the Fruit Growers Supply Co.

THE 1919 RAISIN CROP

The prices of raisins having been agreed upon by the board of directors of the California Associated Raisin Company, the grower may know that if the entire crop is utilized the prices to him will be 10 cents for Muscats, 11 cents for Sultanas, and 11½ cents for Thompson Seedless. There never has been a time when prices were so hard to fix with equity to all concerned, owing to disturbed commercial conditions throughout the country. The crop will be the heaviest yet grown, so far as present estimates go. The Sun-Maid Herald gives the following figures and statements:

"The present estimates indicate that the crop this year will be 200,000 tons. This will constitute a record as the highest tonnage previously grown was the 1918 crop, which amounted to 165,000 tons. This is an increase of 130,000 tons over the average of previous Association years. Our share of this crop should amount to 175,000 tons, and of this amount we have sold 150,000 tons that should be manufactured and shipped before January 1.

In the past two years we have spent over a million and a half dollars in new plants and equipment, and are now better prepared than ever before to handle the crop with promptness, but in spite of this great expenditure there are a number of points at which we do not have the necessary equipment, and it is possible that there may still be some annoying delays this year. If we are able to do so approximately a half million dollars more should be spent in these points next year, and this should complete our building program with the exception of what is necessary to keep up with the annual increase from year to year, and from that time on—barring shortages of cars and shook, which are things that are entirely beyond our control—the annoying delays at the packing houses of the past few years should be entirely eliminated. We are constantly striving to improve our methods so that a large share of the work can be done by machinery and are getting better organized from year to year, and we do not feel that for much longer we will need to be ashamed of our treatment of the growers. It is not our purpose to shuffle the blame for conditions in the past from our own shoulders as we realize that much of the fault has been with us, but we cannot refrain from suggesting to the growers a few things that have made our work difficult that we think can be remedied. In the first place many of the crops that are delivered to us are not dry enough to manufacture. They may not be wet enough to cause a rejection, but they cannot be run through the machinery, therefore, it is necessary to store them away which results in a congestion in the packing houses and makes it impossible to promptly return the boxes for which the growers are clamoring. With the high prices that we are receiving this year we believe that every grower should make it a special point to see that his crop is in as near perfect condition for manufacturing at the time of delivery as is possible.

Another suggestion is that, during the height of the delivery, no grower should deliver over one load a day. In the past growers who have lived close to the packing houses have delivered five or six loads a day, making it entirely unfair to the growers who live further away and causing a great loss of time to all who are delivering. In these days of high wages and shortage of labor it seems a pity that so much time should be wasted waiting at the packing houses—time that might be saved if the growers would exercise a little more patience.

Another point that we wish to emphasize at this time is one that has been learned by the experience of last year. Regardless of weather conditions no releases for the purpose of selling to the outside packers will be made this year. Our experience was last year that when only a few releases were made it was an advantage to the individual that got the release, but when they were made to apply to all, the system broke down and raisins that were worth from four cents to five cents were selling within a week at less than two cents because the drying facilities of the outside packers do not amount to anything compared with the great number of raisins that were offered and they at once took advantage of this condition. We realize that it may seem unreasonable on our part to the grower whose crop is suffer-

Why Not
MAKE 1½, 2 or 3 TON
Truck
out of your old car
and save at least
$1,000
on a truck?

Cash or Easy Terms

Woodward Garage & Truck Attachment Co., Inc.
Corner Pico and Alvarado Streets
Los Angeles, Cal.
Telephones: 50939; West 416

Save $300
New Cleveland Tractors
$1395
While They Last
F. H. Stow Tractor Co.
Berkeley, Calif.

Pomona Air Cleaner

Keeps dust out of tractor, truck and auto motors

Endorsed by motor manufacturers. Hundreds in use. Every Cleaner guaranteed.

H. H. GARNER
Pomona Air Cleaner
Pomona, Calif.

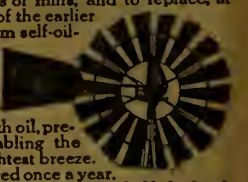
It's Puncture Proof
GUARANTEED 6000 MILES
Without a Puncture
OR A NEW TUBE FREE

Public Puncture Proof Tubes are just as cheap as ordinary tubes and are positive proof against deflation by NAILS, SPIKES, WIRE, TACKS, etc. Used by over a million satisfied customers who drive at any speed without fear of punctures. Cut down your tire cost; send for price list today.

Big opportunity for Live Agents. Exclusive Territory
PUBLIC TUBE MFG. CO., DEPT. 31
101 E. 31st St., Chicago, Ill.

THE SELF-OILING WINDMILL

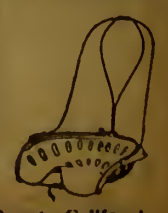
has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.



We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
Write AERMOTOR CO., 2500 Twelfth St., Chicago

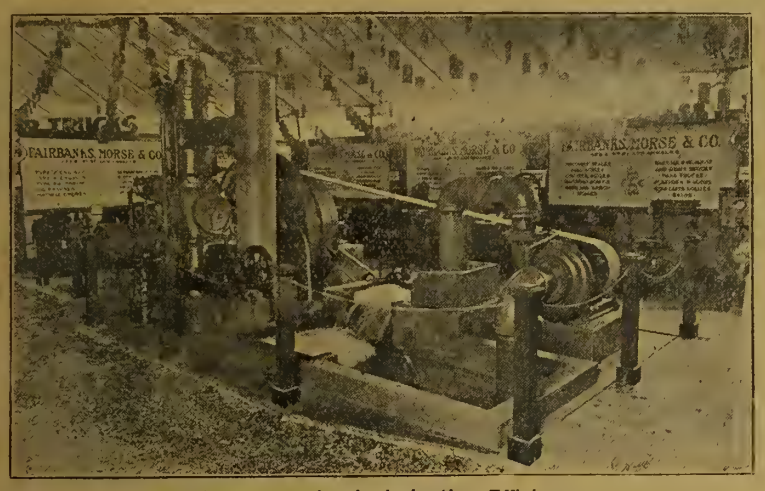
Preserve Your Strength by Attaching a
NATIONAL BACK REST

To the seat of your tractor or farm machinery. It saves your back and you ride in comfort. The National Back Rest fits on nearly any seat no matter what style or shape, it can be quickly and easily attached without the use of tools. No screws or bolts. Will not slip off. Three dollars delivered. Some agency territory still open. Satisfaction guaranteed or money refunded.



CARL G. JORN
Jorn Bldg., 57 Plaza Square, Orange, California

ing to refuse to make a release when some one else offers facilities that we cannot furnish, but in the signing of these contracts the burden of drying the crop and delivering it to the packing house in a merchantable condition rests with the grower and when we once start making releases there seems to be no place to draw the line between those that actually would be lost and those that could easily be saved without going to the dryer. We have spent a great deal of time and money to get these contracts, and as we see it ,the very life of our organization depends upon the control that we have through these contracts and though it may seem unreasonable to



A Demonstration in Irrigation Efficiency

The Fairbanks-Morse people made demonstration most convincing to many an irrigation farmer. Fifty H. P. semi-Diesel attached to centrifugal pump. Capacity 150 inches at 60 foot lift. Cost, approximately $6000.

the particular grower that is wanting the release, we cannot feel but that from an industry point of view these releases should not be made and we are making this statement now so that the growers will have plenty of time to make any arrangements that they feel are necessary for the saving of their crops. The probabilities are that this question will not come up this year, as, if we can judge by the law of averages, a good season should follow on a disastrous season of last year.

SEEKING MORE MEMBERS

The California Prune and Apricot Growers, Inc., have sent out a letter to the growers not members of their organization, from which we quote the following pertinent paragraphs:

Our directors' recent action in the passage of a resolution in accordance with the terms of which the Association's exercise of option on members' crops for the years 1920 and 1921 will be made contingent on the signing of a certain greater acreage to be specifically named during the fall. The directors have considered this action necessary and business-like in their best attention to the development of markets for prune and cot products.

Our present contract with all growers, you will understand, depends for continuance beyond the season of 1919 on the Association's exercise before March 1st, 1920, of option on crops of 1920 and 1921. The exercise of this option marks our passage of certain important stages in our career. We have during the life of the Association maintained a certain expensive canvass of non-members. In this canvass we have made appeal to you as men, neighbors and fellow-growers.

Monarch Neverslip and Lightfoot Tractors

This is L. L. Darveau and his 30-18 Monarch Neverslip

A size for every purpose; each one will do its work, wet or dry, hot or cold. Plow your fields, cultivate your orchards, thresh your crops, pull your beets, fill your silo, pump your water, grind your feed. They are a Farmer's real friend.

Read What He Says

Ventura, Calif., June 25, 1919.
Monarch Tractor Co., Los Angeles, Calif.
Attention Mr. Wuthrich.

Dear Sirs: I am writing to tell you what I think of my 30-18 Monarch tractor, which has given me so much trouble in the past. I bought the machine in 1918. It was equipped with a motor which proved very unsatisfactory to me, as the tractor never would do the work it was guaranteed to do.

Your agent has changed it by putting a Beaver motor on it, and since doing so the machine has done everything I have asked of it.

I have pulled an 8-foot chisel, and an 8-foot cyclone, and am now pulling a DA 214 three bottom John Deere plow just as deep in the ground as the land lever can be set and run the plow level. I am pulling this on ground which has not been worked since early spring, and on grade as well, and pulling them on high speed. I regard the plow as a good 14-horse load in my soil, and the motor handles the load without any sign of overload. I would recommend your tractor to anyone who expects to buy a tractor.

Respectfully, L. L. DARVEAU.

This is only one of many satisfied users. Write for our free book, "Monarch Performance," which tells of many other satisfied users.

When you buy a MONARCH TRACTOR of any size, you buy a tractor with a track which is practically indestructible; not a constant source of expense and annoyance. Coupled to this you buy a motor with sufficient power to do the work and deliver the power that is claimed for it.

Our tractors are ready to prove every claim we make for them. Don't be deceived. Ask to be shown.

Northern California Distributors:
MONARCH TRACTOR SALES CO.
Aurora and Market St. - STOCKTON, CALIF.

Southern California Representative
C. G. WUTHRICH
Phone 62533
221 N. Los Angeles St.
Los Angeles, Cal.

C. S. ANTHONY, Local Agent
Los Angeles

ANNOUNCEMENT

Increased production enables us to furnish the "Little Bear" Tractor for the coming season, complete f. o. b. factory, Los Angeles, Calif., at $795.00.

The "LITTLE BEAR" Tractor

NO EXTRAS — READY FOR WORK

Made in Los Angeles

$795.00

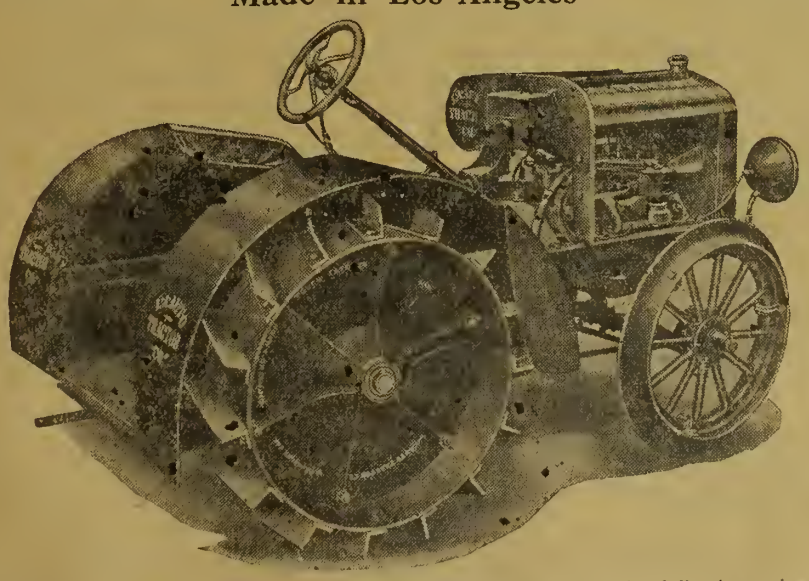
The "Little Bear"

Four Horse at the Draw Bar
Forty-Four (44) Inch Track
Fifty (50) Inch Wheel Base
Fifty (50) Inches High, over all
Turns in a Ten (10) Foot Radius
Weighs Only 1800 Pounds

All Gears enclosed and kept dust-proof by a device used on no other Tractor.

Roller Pinion: The spool is cut and machined from steel bar—the rollers and pins hardened.

"Bennett' Air Cleaner is furnished to clean the air entering the carburetor, keeping the cylinders and pistons free from grit and dust.



$795.00

The "Little Bear"

Ford Motor and Transmission used, which means you can get FORD parts for repairs. Time and money saved by this feature alone. FORD parts are cheap in price, high in quality and obtainable anywhere and everywhere.

Cooling System: We do not use the Standard FORD Radiator. Our own special cooling system does the work. 90 per cent of users of "Little Bear" Tractors do not consume over a quart of water a day in nine hours run.

The Fenders are made sufficiently low and wide to protect the fruit and low lying limbs in the orchard. A wide platform, special hitch with swinging draw-bar for close-up work around trees and an electric light for night work are all included in the price of the Tractor.

The "Little Bear" will work in the open field as well as in the orchard.

Can furnish implements suitable for perfect work with the "Little Bear" Tractor, at the following prices f. o. b. factory, Los Angeles, with order for tractor only.

Special 3-Gang 8 inch Bottom Plow $65.00

No. 14 Forkner Spring Tooth Cultivator; Gardner's Combination Cultivator and Furrower— Special Price on Application

L. A. Auto Tractor Co., 52nd and Santa Fe Ave., Los Angeles, Cal.

Santa Fe Springs, Cal., Sept. 1, 1919.

Gentlemen:—

It is now about two years since I purchased one of your "Little Bear" Tractors, using it on my ten-acre orange grove, and the machine has proven itself to be satisfactory in every way and even doing more than you claim for it.

Have been able to cultivate my grove both ways within six hours and at a cost of about $1.20 for gasoline. Have not had a horse on my place since getting the "Little Bear" nor will I have one again, as it does the work so much better in every way and especially in getting the implements close up to the trees without damaging them in the least. For short turning, it is a little wonder, and so easy to handle that a small boy could do the work as well as a high priced man, as would be required on other tractors.

After irrigation, on account of its light weight, I am able to get into my orchard from one to two days earlier than with any other tractor.

As to repairs, will say that it has been of such a small nature that I have not even considered it an expense.

Wishing you the success you deserve in giving the small rancher a Tractor that will do the work of from three to four horses and so economically run, I am,

Yours very truly, J. R. AGEE.

Manufactured Under Fouch Patents by the

L. A. AUTO TRACTOR COMPANY, INC.

52nd Street and Santa Fe Ave., Los Angeles, Cal. Telephone 29347

=SALE=

of Bred

Poland-China Sows

"Your Chance to Make Money"

Saturday, Oct. 4, 1919

at Modesto, Calif.

HALE I. MARSH and LES McCRACKEN

SELL

50 Bred Sows and Gilts

A few words about the Sows

The Sows

For the past eight months we have been carefully watching and culling our females that we might offer in this sale only such animals as would properly represent the breed both as to individuals and blood lines. They are sired by **Model Major**, twice grand champion and the sire of Major Hadley Wonder, grand champion of 1917; **Kings Big Bone Leader**, 1918 grand champion, I. B. A. Wonder, reserve grand champion P. P. I. E. and Blue Valley Tecumseh by Blue Valley, one of the greatest boars of the breed.

Many breeders have seen these sows and not one said they did not like them.

The Boars

to which these sows will be bred offer the breeder and the farmer unlimited opportunities for adding to their herds proven blood lines or the purchase of foundation herds that will place them on a sound business basis. The sows will be bred to **Kings Big Bone Leader**, grand champion 1918, and not only the most popular Poland-China boar, but a boar with more sons at the head of herds than any other boar on the Coast.

To **Major Hadley Wonder 2nd**, full brother to Major Hadley Wonder, 1917 grand champion, Blue Valley Big Bone and Blue Valley Big Bone 2nd.

Can any sale offer such attractions?

Make comparisons, visit other herds, see the sows and boars; you will then realize what unusual opportunities this sale presents.

Big Meeting and Dinner.—The Poland-China Breeders' Association have been invited to meet in Modesto the evening of Oct. 3rd to meet the farmers of the community at dinner and talk over the Poland-China hog as a money making animal.

NOW REMEMBER this sale will be held in Modesto Saturday, Oct. 4th, 1919.

Every Animal Cholera Immuned.

Hale I. Marsh — Modesto

Les McCracken — Ripon

Geo. W. Bell, Tulare, Auctioneer

Live Stock News Notes

SALE CALENDAR

Ayrshire Cattle

October 8, Agee Brothers, Brawley.

Shorthorns

October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine

October 4. Marsh & McCracken, Modesto.

October 7, Bassett, Ross and Crawshaw, Hanford.

October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.

October 18, Trewhitt, Vaughan and Nehls, Hanford.

October 21, Tulare County Poland-China Breeders' Association, Tulare.

Marsh and McCracken who will hold a Poland-China bred sow sale in Modesto Saturday, Oct. 4th, have this to say regarding the sows in the sale and the boars to which they are bred: For months we have been watching our herds that we might select for this sale such animals as we thought had sufficient quality to properly represent the breed as it should be represented. We cannot see how the blood lines could be improved and the boars to which they are bred are already proven sires of the right type. The State Poland-China Breeders' Association has been invited to meet in Modesto on Friday night preceeding the sale at which time a banquet will be served. The farmers and dairymen of the community will be invited that they may meet the representative breeders of the state and become familiar with the opportunities to make money raising Poland-Chinas.

Eighty bred sows and gilts will be the offering of the Kings County Poland-China Breeders' Association to be held in Hanford, Saturday, October 11th. During the past year a large number of high class boars have been added by a number of breeders and these, together with those already well known as popular sires, will be mated with the sows and gilts in this sale. These sales have a firm hold on the buying public of the state and are conducted in such a manner that tends to inspire confidence in those in attendance.

In the Poland-China sale of bred sows to be held in Hanford, Oct. 7th, by Bassett, Crawshaw and Ross the animals to be sold have for their sire boars that have been an important factor in building up Poland-Chinas in California. The sows have been selected from these three herds and will be bred to King's Timm, Model Fellow, Jr., Big Timm and Some Price.

Mr. Ross states that the requests for catalogs indicates a sustained interest in good Poland-Chinas such as will be sold in this sale.

W. D. Trewhitt, C. H. Vaughn and G. H. Nehls will hold a sale of big type bred Poland-China sows and gilts in Hanford, Saturday, October 18th.

This sale will, no doubt, attract a large number of buyers due to the size and attractiveness of the offering. Only animals of strictly big type breeding will be sold and the demand for this kind of Poland-Chinas is greatly in excess of the supply.

H. D. McCune, Poland-China breeder, Lemoore, has recently sold to Lewis C. Story, Anderson, three bred gilts by his senior herd boar, King's Massive Orange. Also three bred gilts to Teeter Bros., Stratford, one to T. J. Woodworth, Stratford and a boar pig to Bailey and Lowe, Lemoore.

Henry Cummins of Visalia, breeder of Duroc-Jerseys, announces the sale of three herd boars, all his brood sows, excepting one, and all his spring pigs to the Boston Land Company, of Henrietta. Mr. Cummins has not retired from the Duroc field, but is planning now for the purchase of a number of sows for spring farrow. These will be selected from a number of Eastern herds.

The sale announced by Dimmick Bros., and C. G. DeRaad, to be held at Hanford, September 30, has been called off. The two herds were sold to the Boston Land Company, Henrietta, at private treaty. Those who had anticipated attending this sale are advised of its cancellation.

The Duroc-Jersey Breeders Association of California held its annual meeting and banquet at the Travelers Hotel, Sacramento, Monday evening, September 1. The principal part of the meeting was the discussion of ways and means for breed promotion. It was decided to hold their first breed promotion sale at University Farm, Davis, January 14, 1920. Following this decision more than $1000 was raised by popular subscription to be used in advertising the breed. Officers elected for the coming year are R. K. Walker, president; V. F. Dolcini, vice president; S. E. Whiting, secretary-treasurer; H. H. Braly, H. C. Witherow, Donald H. Graham, H. M. Berglund, board of directors.

The sale of Poland-Chinas to be held in Lodi September 19 by the San Joaquin Poland-China Breeders' Association offers unlimited opportunities for those desiring to purchase boars ready for fall service. Forty will be sold, as well as 20 bred gilts. The winnings at the state fair of the breeders consigning to this sale affords ample proof as to the kind they are breeding. As this is the first sale of the association they are using great care in the selection of the animals to be sold. It is natural to suppose that the sale will he well attended and that a satisfactory average will be obtained.

The increased interest in the approaching banner sale of Poland-Chinas that will be held in Hanford September 17 by W. L. Haag & Son and John M. Bernstein is due, no doubt, to the prominence of the boars to which the offering is bred. Fifty bred sows and gilts will be sold selected with great care from the herds of these two breeders. The offering of Haag & Son will be bred mostly to Lendorris Liberty Bond, a son of Liberty Bond, although a few will be bred to Young Jumho, a grandson of Long Jumbo, the sire of the $18000 boar, Mabel's Jumbo. The Bernstein offering will be bred to The Yankee Jr., a son of the famous The Yankee, and a boar found to attain prominence as a sire on the Pacific Coast. No doubt this sale will attract buyers from all parts of the coast.

H. C. Witherow, manager of Greenwood Farms, Live Oak, announces the purchase from H. P. Slocum & Son of Uneeda Queen Model 2nd, the 3rd prize senior yearling Duroc-Jersey sow at the state fair and Uneeda H. A.'s Queen a winner in the junior yearling class, both sows being bred for early fall farrow to Experimental Defender. Mr. Witherow also purchased for his uncle, H. S. White, Chino, Uneeda Orion Lena also bred to Experimental Defender. The consideration was $2000.

R. E. Watson of the Henderson Company, Sacramento, reports the sale of an 11 months old Holstein bull by a son of Lottie Walker Spofford 3d to the Dominick-McGrath estate, Oxnard; a yearling son of Pontiac Segis Inka to M. Johnson & Co., Salinas, and two two year old heifers to C. C. Tidd of Nevada. Mr. Tidd also selected two young heifers from the Bonita herd.

Just hefore the state fair the Del Paso Stock and Swine Breeders' Association purchased from the Henderson Company, Sacramento, the yearling Holstein bull Bonita Sir Cornucopia Gliste for $500. At the fair this young bull won first as junior bull and was later made junior champion. An offer of double the purchase price was refused.

V. F. Dolcini, proprietor of the June Acres Stock Farm, Davis, has sold to Markofer & Latta, Elk Grove, Tagus Sadie Vale De Kol, the second prize junior yearling Holstein bull at the recent state fair.

J. P. Cook, Poland-China breeder, Paradise, who on joining the army sold his herd boar Forrestview Bob by Caldwell's Big Bob, has repurchased him. He has also secured a boar by Repeater out of a Disturber sow.

W. M. Collier, a prominent Hereford breeder of Missouri, has been visiting a number of the Hereford herds of this state. Mr. Collier stated that he knew of no better territory for the expansion of the Hereford business than California affords. While in this state he was given a number of substantial orders to be filled for fall delivery.

H. P. Slocum & Son, Willows, have sold to V. F. Dolcini of the June Acres Stock Farm, Davis, the Duroc-Jersey sow Uneeda Queen Model, grand champion at the 1918 state fair. Uneeda Queen Model was sired by King's Col. and her dam was Model Lady.

A Holstein sale that is attracting attention was consummated recently when Gotshall & Magruder of Ripon sold to Pecho Land and Cattle Company, San Luis Ohispo, a son of the W. J. Higdon bull, King Korndyke Pontiac 20th, and out of K. P. Tola Foe, holder of the state record as a senior two year old. The youngster is one of the best bred calves in the state and his future development will be watched with interest.

Not every high class herd of breeding swine can afford the luxury of a show herd. But there are some very excellent herds of Durocs in the south end of the state that will get more or less into the limelight with the advent of the forthcoming shows in this section. Among these are the Ireland Rancho herd at Owensmouth, the Falfadale Farm herd at Perris, the Del Sur Rancho herd at Lancaster, and the Golden Model herd at Van Nuys. The Duroc show at Los Angeles promises to be the big event of the year.

R. K. Walker, manager Winsor Ranch, Bonita, reports the following sales of Duroc-Jerseys: To the Hazel Louise Farm, owned by S. E. Whiting, Sacramento, a fall boar by Top Sensation and three senior sow pigs, two of which were second and fourth in class at state fair. Two were bred to Great Sensataion 3d and one to Winsor's Giant Orion; to H. F. Bahmeier, secretary Durham land colony, a boar pig from Model Defender Lady, grand champion sow at state fair, by Great Model.

Walter T. Gatton, manager Diamond Bar Ranch, Spadra, has sold two Duroc-Jersey sows bred to Mammoth Sensation 2d, reserve grand champion boar at the 1919 state fair, to the Western Hog Company, Sacramento. It was reported that the Diamond Bar Ranch was offered $35,000 for this show herd.

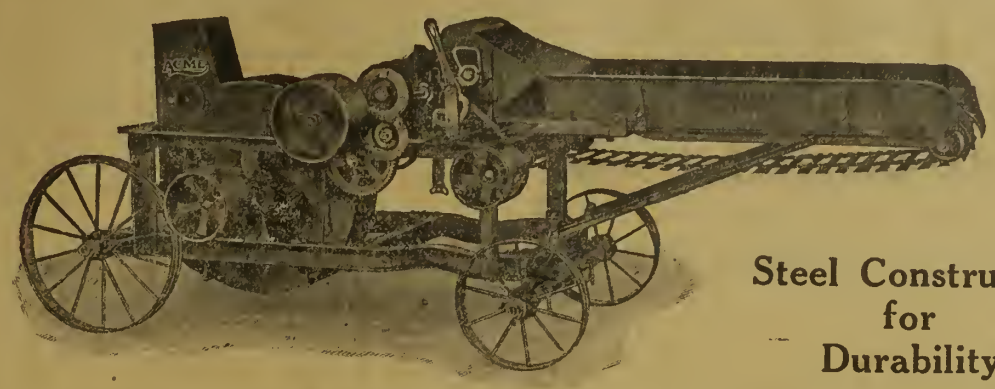
McCarty and Starkweather, Poland-China breeders of Modesto, have sold E. Miner, Lodi, Smooth King, a junior boar pig by Kansas King, the price being $450. Mr. Miner will use him lightly and grow him out for the shows next year as he considers him an excellent prospect.

The agricultural extension service of the college of agriculture of the university has joined in the "Better Pork Crusade" which the United States department of agriculture will begin throughout the country on October 1st.

Shirley Christy, secretary of the Arizona State Fair, has mailed out the premium list and indications are that the state fair will be the best in history. New exhibition space and improvements to grounds and buildings, several premiums, and attractive programs are assured. The fair will be held at Phoenix, November 3-8.

King's County has firmly established itself as the state center for Poland-Chinas. In Hanford, Saturday, October 11, the King's County Poland-China Breeders' Association will hold their eighth semi-annual sale of bred sows and gilts, with a few high class boars. In this sale the herds of the following breeders will be represented: G. I. McCune, G. Nehls, C. L. Newport, H. E. McMahan, W. L. Haag & Son, T. J. Woodworth, R. G. Hamlett, H. D. McCune, R. L. Waltz, C. A. Waghn, W. T. Dice, W. S. Hubbard, C. A. Crawshaw, M. Bassett, C. G. Raad, W. D. Trewhitt, C. Dimmick, M. Bernstein, E. G. Meyer, W. Bernau and F. D. Ross.

The ACME Cutter



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A SIZE FOR EVERY DAIRY

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THE Steel Framed Acme Cylinder Cutter is the decided preference of dairymen, who place durability and efficiency first in their selection of farm equipment.

The satisfactory performance of this machine on hundreds of dairy and stock farms in California and the dependability of the company behind the Acme is a substantial guarantee of its superiority.

Let your selection be the Acme. You will never regret it.

Send in your order now while stock is complete to insure prompt delivery.

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Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five gaited saddle stallion, winner in many prominent shows.

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We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

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Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin
Santa Anita Calif.
W. H. Taylor, Supt.

Holsteins and The Milk Check

The size of your check depends less upon the size of your herd than upon the size of your cows. Get big, healthy, pure bred cows with the ability to convert feed into milk at a profit.

Wherever dairying is on a prosperous footing, that's the home of the Holstein cattle. Besides being the leading dairy breed, they bring top prices when beefed. They breed regularly, and the calves are easily reared.

If interested in

HOLSTEIN CATTLE

send for our booklets and inform yourself on how to make money in breeding dairy cattle.

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PRINCE RIVERSIDE WALKER

OUR SENIOR HERD SIRE

His Sire: PRINCE GELSCHE WALKER, whose daughters have broken more state and world's records than the daughters of any other single sire in California, and whose get have outsold the get of any other sire in the west.

His Dam: AAGGIE ACME OF RIVERSIDE, who recently completed her second yearly record with 1053.14 pounds butter from 20,354.8 pounds milk beginning her record at past 11 years of age. She is dam of the world's official yearly record cow Aaggie Acme of Riverside 2nd, 1331.78 pounds butter in one year, who in turn is dam of the sensational junior two year old heifer Miss Aaggie Acme Burke who promises to make right around 1000 pounds butter in one year at first calving.

A son of PRINCE RIVERSIDE WALKER out of one of our good cows is first class insurance against unproductive cows in your future herd. Let us describe and quote one to you.

OUR ENTIRE HERD IS TUBERCULIN TESTED.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H L. Redd, Herdsman

The grease lasts twice as long.

—because Mica Axle Grease contains powdered mica (practically wear- and heat-proof), which fills up all roughness in spindles and bearings, makes the grease work better and last twice as long. No hot boxes. Ask your dealer. Buy by the pail.

Standard Oil Company (California)

MICA AXLE GREASE

Shorthorns of Rare Quality

Details incident to the settlement of an estate, and the readjustment of some farm leases, make it advisable to the owner to make a substantial reduction in the well known Roselawn Herd of registered Shorthorns, and there will be offered at public auction by

Roselawn Stock Farm

H. M. ELBERG, Proprietor

Woodland, California

Thursday, October 16, 1919

45 Scotch and Scotch Topped Shorthorns

The Roselawn herd has been established for thirty years, and has always been a factor in the progress of the breed in the west. Its show ring record, and the general satisfaction which has attended its hundreds of individual sales of breeding animals to breeders and rangemen have earned for the herd a degree of public confidence that should be highly satisfactory to the owner.

THIS OFFERING AN OUTSTANDING ONE

It is entirely conservative to state that the offering to be made in this sale exceeds by a wide margin in both numbers and average quality any previous offering made from the Roselawn Herd, while the large number of individual top attractions constitute a group that stands as one of the notable offerings of the breed in the West.

THE FEMALES

Among the splendid females to be sold are MISCHIEF E 34, undefeated in Canada, Grand Champion at 1918 California State Fair, and dam of ROSELAWN CHAMPION, junior champion at the same fair and present herd sire in Roselawn Herd; ROSIE MAYFLOWER, the great white heifer who fills the eye of every judge who has seen her, and she is a daughter of Sultan Mayflower, the University Farm bull that sired California Marvel, champion Shorthorn steer at the 1918 Chicago International, and the $5500 bull California Model; MAYFIELD MAGNOLIA, also a daughter of Sultan Mayflower, selling with roan heifer calf at foot, and bred back to ROSELAWN CHAMPION; LOVELY'S PRIDE 3D, a beautiful roan heifer of the Cruickshank Lovely family, bred to ROSELAWN CHAMPION; and others of splendid breeding and quality, including about 15 GREAT FEMALES WITH CALVES AT FOOT BY NOTED SIRES.

THE BULLS

The offering of bulls in this sale may well be rated as one of unusual merit. The group is headed by CRESCENT DALE, now in service in the Roselawn Herd, he by Whitehall Rosedale, son of Avondale, and out of a daughter of Ruberta's Goods and the imported cow Crescent 5th. He is a smooth, thick fleshed bull with desirable size and unusual quality, and on his individuality and the proven excellence of his calves he is entitled to a place in any high class breeding herd. Besides CRESCENT DALE there is a choice selection of Scotch and Scotch topped bulls that should find favor with both breeders and rangemen.

Every animal guaranteed to be a breeder

Every animal over 6 months old tuberculin tested

Come to this sale and take part in one of the most important events in western Shorthorn progress to date. You will find a delightful farm, a high class herd, and an owner and breeder who is breeding and developing good Shorthorns in a broad gauge way.

Catalog of sale free on request.

Auctioneers

Col. Ben A. Rhoades, Los Angeles

Col. H. C. Cranke, Nezperce, Idaho

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager
Sacramento, Calif.

BREEDERS OF MILKING SHORTHORNS

Senior Herd Sire Oxford Duke 2nd No. 396933, a splendid type of the dairy Shorthorn
Junior Herd Sire Grand Wapsie No. 641734, sired by the 17th Duke of Wapsie

We are offering some young bulls and females of extra breeding and individuality from these sires and the choicest dams in our herd. Tuberculin tested. Write for particulars.

THE JOHN LYNCH RANCH
P. O. Box 321 Petaluma, Calif.

The Keep On Herd Register of Merit Jerseys

Fifteen Keep Ons won twenty-six prizes and one gold medal. All three first prizes for production went to the Keep Ons. Grand Champion cow and Champion butter cow won by Keep On Herd. Buy a Keep On and get the best. Nothing finer or better. Bred for both show and production. Males and females at reasonable prices. Write your wants.

Dr. H. W. Hand Orland, Calif.

Start With Shorthorns Now

The time to start with a few registered Shorthorns is now. They are as cheap today compared with other values as ever. The sooner you get started the sooner your profits will come in.

It doesn't require a large acreage. Whether your farm is large or small you can handle pure-bred Shorthorns profitably.

Don't keep three grades if one Shorthorn will make as much return as the three.

American Shorthorn Breeders' Association
13 Dexter Park Ave., Chicago, Ill.
Ask for literature.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
El Monte, Cal.

W. V. Bennett, Nord, owner of the Butte County herd of Duroc-Jerseys, has sold a gilt by Uneeda Orion C and out of Butte's Golden Pet to the Gardiner Ranch, Sacramento.

Among the fine strings of Hampshire swine to be seen in the line-up at Riverside and Los Angeles in October will be a well groomed exhibit from the Fairbanks Ranch at Redlands, A. E. Harvey, manager. Mr. Harvey's exhibit will in large measure feature the big boar Harvey's Choice, an excellent son of Langdon's Choice and Lion Queen. Harvey will show a young boar that will cause the ringside talent to sit up and take notice.

Report from the Llano Vista Ranch at Perris, relates that the fine Hampshire brood sow, Sioux Tipton, daughter of Sioux Queen, grand champion sow of the world, on September 1st, farrowed a litter of 13 finely belted pigs. Other things are flourishing accordingly and manager F. A. Langdon promises to be at the front at the Southern California live stock shows with his usual representative exhibit from the pioneer herd.

BUNK—AN EDITORIAL

Continued from Page 405.

Milk is an essential food. It is important that a steady supply be provided at a reasonable price. Prior to the organization of the various associations, the major portion of the supply reaching the public came through the distributor. The distributor was interested primarily in whole milk. If the demand was greater than the supply the supply was stimulated by better prices to the producer. If the supply was in excess of the demand, production was discouraged. And when a surplus was accumulated it was disposed of by pouring in the sewer. The price charged the consumer had to cover losses on surplus. On such a basis the supply of the highly essential food was not on a stable basis.

The associations are operating on the following basis: First it is the plan to keep the dairy industry on a basis equal to the public need. But the public demand fluctuates with the seasons. Therefore the optimum demand must be kept in mind and a method adopted for handling efficiently the surplus at such times as a surplus exists. The only method open was to construct plants through which the surplus could be handled. This they have done. At different points in the state modern by-product plants have been built and the establishment of these plants enable the dairymen to produce a maximum of milk and feel certain that any surplus will not be wasted. These plants make available food values that would otherwise be wasted, and permit the saving of such losses as would, under the old system, be charged up to the public. Then why all this hue and cry and opposition? Simply this: Privately owned plants and distributing organizations have suffered by shortening the route from producer to consumer. In an effort to save their hides, they have turned to the third interested party—the consumer—and by insinuations and small practices are attempting to make the public believe that the purpose of the producers is to fix an exhorbitant price on milk, and they have succeeded in deluding a few of the producers—the malcontents—into imagining that they are about to be put out of business. But they have failed to delude the big army of clear-headed and practical dairymen and they will fail to make headway with the public, once the facts are known.

Now is the time for every dairyman to keep his head. Now is the time for every member of other producers' organizations to lend help and support. If the milk producers lose the fight will shift to other lines of production.

If any law has been infringed we are certain that it has been unintentional. The idea back of these organizations is sound and honest. California dairymen are not law breakers. All that they ask is a square deal and a fair price and if the present law does not grant them the right to organize and operate along lines calculated to make their business efficient, then now is the time to plan for a law that will. In the meantime we will look for many shifting angles of the fight, and continue to regard the many charges against the dairymen as bunk—with a deeper motive back of it all.

GUERNSEYS

196 — 368

These figures represent the average butter fat production of a grade herd in Minnesota before and after the use of a pure bred Guernsey bull. The improved herd brought the owner prosperity, — the original, only drudgery. Write to breeders for descriptions and prices and send for our free booklet, "The Grade Guernsey."

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PILLING CATTLE INSTRUMENTS

Easy to use

will save that cow, by making it possible for you to treat milk fever, etc. without waiting for a veterinarian. Booklet FREE.

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Case No. 2 contains $3.50 milk fever outfit and 8 other "Easy to Use" Cattle Instruments. $15.00 Value for $10.00.

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ABSORBINE *STOPS LAMENESS*

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar troubles and gets horse going sound. It acts mildly but quickly and good results are lasting. **Does not blister or remove the hair** and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.50 a bottle delivered. **Horse Book 9 R free.**

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; heals Sores. Allays Pain. Will tell you more if you write. $1.25 a bottle at dealers or delivered. Liberal trial bottle for 10c stamps.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Cattle Ranges

ARE YOU INTERESTED?

in knowing facts about Central British Columbia Cattle Ranges and mixed farming. Improved and non-improved, large and small? Write your requirements, resources.

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Beef Cattle Specialist

For 30 years I have been devoting my entire time to pure bred beef cattle. I know the kind of cattle California needs and where and how to buy. I make regular trips to the great producing centers and will buy on order. Best of references. Satisfaction assured. Correspondence invited.

R. M. DUNLAP, Hotel Land. Sacramento, Cal.

JUST ARRIVED

We make a specialty of furnishing dairy cows and beef cattle registered and grades and are prepared to carry liberal time loans on such stock.

Geo. R. Mokel Cow. Co.

Care Chamber of Commerce, Los Angeles

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

SAN FRANCISCO SHOW OFFERS $36,000

IN arranging the premium classification for the California International Livestock Show to be held in the California Building at the Panama-Pacific Exposition grounds, San Francisco, Nov. 1 to 8, Manager Gordon H. True has planned to make it a general utility show of food producing animals, planning classes which have heretofore not been included in California shows. Some of the features of the dressed rabbit and poultry exhibits are different from anything in previous shows.

In addition to the $36,000 in premiums many breed associations, as well as others, have put up attractive prizes insuring a fine showing of cattle, horses, sheep, swine and poultry. Among the added premiums are the following:

American Shorthorn Breeders' Association, for beef classes, $1500 and $500 for milking Shorthorns; American Hereford Breeders' Association, $500; American Aberdeen-Angus Association, $500; Brown Swiss Cattle Breeders' Association, medals; Percheron Society of America, silver medals and ribbons; Shire Horse Society of England, silver medals; National Spotted Poland-China Record Association, $100; Western Berkshire Congress, $200; Western Meat Co., San Francisco, for junior hog feeding classes, $100; American Hampshire Sheep Association, $42; American Shropshire Registry Association, ribbons; The Emporium, San Francisco, for beef and dairy cattle, $250; California Central Creameries for the best grade cow, with record, by registered bull, $225. For rabbit classes there are 74 cups offered.

Entries close in the live stock division Ocober 1, except carload steers, which may be entered up to October 18; and rabbits and poultry, October 20; and dairy products to 6 p. m., October 30.

Particular attention is being given to the carload lot exhibits at this show, not only among market animals but brteding animals as well. Carload prizes are offered for registered beef bulls and heifers for breeding purposes; feeder cattle, fat cattle, carloads sheep and market hogs. Ample space will be provided for quite a complete showing of these carload classes as they will attract some of the largest meat producers in the West.

CALIFORNIA BREEDERS MAY SHOW AT CHICAGO

Gordon H. True of the University of California and at present manager of the California International Livestock Show is making an effort to arrange for a number of California breeders to attend the International Livestock Show to be held in Chicago the first week in December.

True says that a number of California breeders are seriously considering sending exhibits to Chicago. Among those who will probably enter the Eastern show are: Easton & Ward, Shire horse breeders; Thornton S. Glide, owner of the sensational two year old Shorthorn heifer, Little Sweetheart, grand champion at the recent state fair; John A. Bunting, Hereford breeder of Mission San Jose; the Estate of Thos. Dibblee, Shorthorn breeders of Santa Barbara and the Ormondale Company, Shorthorn breeders of Redwood City.

It is True's idea that such enterprise on the part of California live stock interests would mean much to the industry of the Pacific Coast and he is hoping that perhaps enough breeders other than those who plan to show to charter a special car will join the plan.

WRONG DATE

In our issue of September 20, on page 388, the ad of Fred D. Ross, Hanford, gave date of October 11. It should have been October 7.

Arizona's wool clip for 1919 has been estimated by the Phoenix Chamber of Commerce at 5,000,000 pounds. On January 1, 1919 Arizona had approximately 1,400,000 sheep.

Buy wisely what you really need now and save the rest in Thrift and W. S. S. for a sunny opportunity.

AGEE BROS. PUBLIC SALE

50 - Registered Holsteins - 50

Harold Bell Wright Ranch, Meloland, Imperial County, California

Wednesday, October 8, 1919

Having leased their ranch at Brawley, Agee Bros., owners of the well known, high class PARAGON HERD of registered Holsteins, will sell 50 head of highly bred individuals from their herd at public sale.

Females in the Offering

The sale will contain well bred cows and bred and open heifers. Most of the females are of breeding age, and are bred to TOYON FAYNE VALDESSA, whose sire is the 41 pound bull King Valdessa, and whose dam is a 30 pound 4 year old daughter of King Hengerveld Aaggie Fayne. He is one of the most richly bred bulls in California and his calves from these dams will be worth all the dams bring in this sale.

A Rare Offering of Bulls

Dairymen and breeders of the south have rarely been offered so good an opportunity for the selection of a well bred herd bull as will be afforded in this sale. Practically all of these bulls are sired by TOYON FAYNE VALDESSA, and by a grandson of De Kol of Valley Mead, dam of King Mead of Riverside, the only bull of the breed whose entire list of yearly record daughters average over 4 per cent butterfat on yearly test, among them Aaggie Acme of Riverside 2nd, the world's official yearly record cow. These bulls are out of some of the best cows in PARAGON HERD and many are about ready for service.

Don't Overlook the Fact

that a large percentage of the females are great granddaughters of King of the Pontiacs, the breed's greatest sire of producing daughters, and that practically all of these are bred to a 30 pound son of the 41 pound bull, King Valdessa.

Every Animal Guaranteed to be a Breeder **No Animal in Sale is Tuberculin Tested**

The Harold Bell Wright Ranch is one-half mile from Meloland, Imperial County, on the El Centro-Holtville Road. Parties coming by train get off at El Centro, where auto conveyance to sale will be provided.

SALE BEGINS PROMPTLY AT 10 A.M.---Catalog free on request

Management
CALFORNIA BREEDERS SALES AND PEDIGREE COMPANY
J. M. Henderson, President C. L. Hughes, Sales Manager
SACRAMENTO, CALFORNIA

Auctioneers—Rhoades & Rhoades, Los Angeles

A WONDERFUL OPPORTUNITY

Is Offered to Dairymen, Stockmen and Ranchers to secure new blood in sires and dams for their herds at the

AUCTION SALE of PURE BRED LIVE STOCK

TO BE HELD AT THE

Southern California Fair, Riverside, October 7 to 11

This Sale will be held on Friday and Saturday of the Fair and will include 42 head of Guernseys, 36 head of Jerseys, 48 head of Holsteins and 20 head of Shorthorns.

These animals are carefully selected from the very best herds on the coast and include lines of wonderful milk and butter producing records.

The Swine sale will include 48 head of Duroc-Jerseys, 40 head of Poland-Chinas, 22 head of Hampshires and 15 head of Berkshires.

There are some splendid sires in this list and many bred gilts from the best herds in the state.

MILK GOATS. About 40 head of high bred goats from the exhibit pens at the Fair will be offered in this sale.

Twenty Head of Thoroughbred Horses

Sale of Cattle commences promptly at Nine o'Clock on Friday, Oct. 10. Swine will be sold on Saturday, commencing at 9:00 a. m.

COL. W. C. LOOKINGBILL, Sales Manager.

For Catalogue and Information address **W. W. VAN PELT, Secretary-Manager, Southern California Fair, Riverside**

Bunting Herefords

Out of nine classes at the state fair we won 8 firsts and one second. For two years we have owned the grand champion bull. For Herefords that are right in every way—breeding and individuality—prospective buyers are invited to inspect this herd.

MISSION HEREFORD FARM, John A. Bunting
Mission San Jose, Calif.

"A man may be down, but he's never out," is a nice slogan—but if you stay down for the count of ten, you lose the biggest share of the gate receipts.

Brighton Farm Herds

Registered Shorthorns
and
Berkshires---Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

When Writing Advertisers, Mention the Cultivator.

DIAMOND G HEREFORDS

are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 2d, one of the best bulls in the West. Correspondence invited and visitors welcome.

H. H. Gable Esparto, Calif.

Raw Furs in Big Demand

For reliable quotations send a postal addressed to Lemuel Black, Hightstown, N. J.
My prices will convince all interested.

Lemuel Black

The Champion Sow Herd

BIG TYPE POLAND-CHINAS

We modestly claimed it-At Sacramento we proved it

OUR AWARDS:

Grand Champion Sow—"Big Mary 3d" by "Big Fred" by "Big Bob.

Reserve Jr. Champion Sow—"Nugget Nell" by "Kansas King."

1st and 3d Aged Sows.
5th Jr. Yearling Sow.
1st and 3d Under a Year Sows.
2nd Herd under a Year.
2nd Herd bred by Exhibitor.
2nd Get of Sire.
3d Produce of Dam.
4th Aged Herd.

Fall Barrows ready for Service—and Spring Boars sired by "King Jones Over." If you want the best write us. Attend California International Livestock Show, San Francisco, Nov. 1st to 8th.

McCarty & Starkweather

433 California St., San Francisco, or
Route Co. Box 384: Modesto

Lendorris Ranch

Offers to discriminating buyers of big type Poland-Chinas animals of quality and breeding. Two such spiendid sires as Young Jumbo and Lendorris Liberty Bond account in part for the popularity of our big type Poland-Chinas.

W. L. Haag & Son Hanford, Calif.

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

The Pacific Herd of Big Type Polands.

Herd sire, King Hadley and A Wonder blood lines.
A few classy 5 months old boars for sale.
Satisfaction or money refunded. Prices reasonable.

Mrs. C. H. Andrews
Route 1, Box 46. Modesto, Calif.

WHIZ-BANG----I Will Sell

He's a grandson of Caldwell's Big Bob, is big himself and will meet the requirements if you want them big. My fall pig will be by him. Can't use him longer. Two litter mates sold recently, just about a year old. Priced reasonable. Write for more information.

J. P. Cook Paradise, Calif.

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

THE SAN JOAQUIN POLAND-CHINA BREEDERS' SALE

The first sale of Poland-Chinas to be held by the San Joaquin Poland-China Breeders' Association was held in Lodi, September 19.

There were some misgivings, by a number of the breeders, as to the outcome of this sale as it was mostly advertised as a boar sale and the first of its kind to be held in the state. The results of this sale offer conclusive proof that the time is ripening for the holding of boar sales in California. Fifty-two animals were catalogued, of which only eighteen were sows or gilts. The sows averaged $153 and the boars averaged $90. The top for both boars and sows was $300, Governor, a boar from the herd of Geo. V. Beckman and Sons, by Matchless Big Bob, going to Langhorst Bros., Lodi, and the sow Orange Blossom, by Ursus Jr., consigned by Eugene Miner, went to H. I. Marsh, Modesto.

The breeders are highly pleased with the results of this, their first sale, and announce that they will hold a bred sow sale about the twelfth of February, 1920. Ord L. Leachman of Sacramento cried the sale. Following is report of sale in detail:

CONSIGNMENT OF GEO. V. BECKMAN & SONS

1—Boar, Langhorst Bros., Lodi, $300.
2—Boar, C. L. Villingu, Lodi, $75.
4—Boar, Les McCracken, Ripon, $50.
6—Sow, Les McCracken, Ripon, $250.
7—Boar, Geo. C. Need, Galt, $90.

CONSIGNMENT OF G. H. BARTON

8—Sow, Les McCracken, Ripon, $100.
9—Sow, R. E. Ray, Lodi, $110.
10—Boar, C. N. Adams, Galt, $40.

CONSIGNMENT OF JOHN HAGLE

12—Boar, E. L. Carter, Lodi, $40.

CONSIGNMENT OF N. K. HORAN

14—Sow, H. T. Bailey, Lodi, $235.
15—Sow, H. C. Beckman, Lodi, $275.
16—Sow, J. W. Stuckenbruch, Acampo, $160.
17—Sow, B. W. Doyle, Stockton, $205.
18—Sow, W. M. Fox, Lodi, $115.

CONSIGNMENT OF J. F. LEHMAN

22—Boar, H. I. Marsh, Modesto, $60.
24—Boar, McCarty & Starkweather, Modesto, $70.
25—Boar, Mrs. N. E. Andrews, Modesto, $100.
26—Boar, H. I. Marsh, $200.

CONSIGNMENT OF LANGHORST BROS.

27—Boar, J. W. Stuckenbruch, Acampo, $50.
29—Boar, G. F. Starin, Lodi, $30.

CONSIGNMENT OF EUGENE MINER

30—Sow, H. I. Marsh, $300.
32—Sow, C. E. Stender, Lodi, $85.

CONSIGNMENT OF J. W. WAKEFIELD

34—Sow, H. I. Marsh, $100.
35—Sow, E. McKinley, Lodi, $180.

CONSIGNMENT OF YOUNG & CLARK

38—Boar, A. M. Cooper, Turlock, $70.
44—Boar, Diamond Ranch Co., Red Bluff, $85.
45—Boar, Diamond Ranch Co., Red Bluff, $90.
47—Sow, H. T. Bailey, Lodi, $150.
48—Sow, Diamond Ranch Co., $70.
49—Sow, Diamond Ranch Co., $70.
50—Sow, C. E. Stender, $95.
51—Sow, C. N. Adams, Galt, $90.
52—Sow, N. K. Horan, Lockeford, $160.

THE HAAG AND BERNSTEIN SALE OF POLAND-CHINAS

The highly satisfactory sale of Poland-Chinas held in Hanford by W. L. Haag and Son and John M. Bernstein September 17, set a new high average for the breed in the state. Thirty-six sows and gilts, five young boars and one club pig were sold for the fine average of $189.41 for the sows and gilts, $2.50 for the boars and the club pig brought $125. This pig was consigned to the sale by Mr. Bernstein's little daughter, Mary Eva Bernstein. The top from the herd of Haag and Son was Maid's Big Bone Orphan by King's Big Bone Leader and bred to Young Jumbo selling to Les McCracken of Ripon for $505. From the Bernstein herd the top was secured in Miss Smooth Wonder by Mouw's Black Wonder, sold open with the breeding privilege to The Yankee, Jr., Thos. Caesar of Reedley securing her for $570.

It was the universal opinion of many of the breeders present that the animals in this sale were the highest class ever sold at public sale in the state. While a number of the animals sold for less than their value, the high average made shows a healthy condition and should be a source of much satisfaction to other breeders who will hold sales in the future. Following is a dctailed report of the sale. H. M. Bernstein was the auctioneer.

W. L. HAAG & SON CONSIGNMENT

2—Les McCracken, Ripon, $505.
3—Les McCracken, $150.
4—H. I. Marsh, Modesto, $130.
5—E. W. Houston, Hanford, $127.50.
9—Geo. E. Dierssen, Sacramento, $150.
10—C. G. DeRaad, Lemoore, $150.
11—C. G. DeRaad, $100.
12—C. G. DeRaad, $100.
20—Wm. Bernstein, Hanford, $210.
21—W. D. Trewhitt, Hanford, $127.50.
26—C. T. Starr, Hanford, $165.
31—Les McCracken, $137.50.
32—Les McCracken, $137.50.
33—Les McCracken, $137.50.
38—H. D. McCune, Lemoore, $150.
39—E. W. Houston, Hanford, $155.
40—H. I. Marsh, $155.
42—M. Lovelace, Lemoore, $90.
47—A. Piefer, Hanford, $75.

JOHN M. BERNSTEIN CONSIGNMENT

1—Thos. Caesar, Reedley, $570.
6—Harrold S. Waltz, Lemoore, $285.
7—Les McCracken, $80.
8—C. H. Myers, Laton, $75.
16—Thos. Caesar, $402.50.
17—A. Piefer, $127.50.
18—J. M. Case, Lemoore, $165.
19—C. T. Starr, $220.
22—E. S. Myers, Riverdale, $260.
23—Frank Johnson, Hardwick, $160.
24—C. G. DeRaad, $200.
25—H. D. McCune, $300.
27—E. W. Houston, $152.50.
28—E. W. Houston, $145.
29—W. O. Todd, Lanare, $137.50.
30—Pig club special, Louis Myers, Riverdale, $125.
34—E. S. Myers, $390.
35—Roy Waltz, Hanford, $155.
36—Roy Waltz, $137.50.
37—H. I. Marsh, $120.
43—C. H. Myers, $100.
44—W. T. Dice, Hanford, $70.
45—Chas. Lewellyn, Hanford, $75.

HENDERSON HOLSTEINS TO MANY NEW HERDS

The combination sale of registered Holsteins held at Stockton on September 18, by the Henderson Holstein Company of Sacramento and the Bonita Stock Farm of Lodi resulted in the distribution of 56 head of bulls and females at prices that are certain to make money for the purchasers.

This was the first sale of Holsteins to be held at Stockton and that fact together with the early date no doubt held values to a lower level than would be expected later in the fall. Few sales have been held where the offering went into the hands of as many men making their first start with purebreds and from that point the sale can be regarded as an important event in the development of the industry in the upper San Joaquin Valley.

The top price paid for a cow was $490, at which figure N. K. Horan of Lockeford secured the good young cow, Baby Lyons Tiffany. J. W. Scudder of Holt bought the top bull, Model Domino Glista, at $425. Forty-seven cows averaged about $275.

Among the heavier purchasers were F. L. Harvey of Galt; N. K. Horan of Lockeford; Geo. P. Robinson of Sacramento, and R. L. Holmes of Modesto.

The sale was under the management of The California Breeders' Sales & Pedigree Company of Sacramento. Ben A. Rhoades of Los Angeles was the auctioneer and Geo. A. Bell of Tulare acted as ringman.

A detailed report of the sales follow:

1—Lady Benfield Hengerveld, June, 1916; J. W. Coffee, Modesto, $225.
2—Circle Johanna Meerschaum, Sept, 1915; V. F. Dolcini, Davis, $425.
4—Princess Butter Girl Lunde, March, 1916; Glenn Harter, Escalon, $200.
5—Circle B Netherlands Mercedes, May, 1913; Geo. P. Robinson, Sacramento.
6—Model Annie Beauty, Oct., 1914; Glenn Harter, $350.
7—Manteca Alka Hengerveld Walker, March, 1917; Wm. F. Watson, El Cerrito.

Long Jumbo and Yate's Big Orphan

have sired some wonderfully fine pigs. Big type Poland-Chinas by these two boars for sale at a reasonable price. Write immediately for full description. Fully guaranteed to satisfy.

R. J. Yates, Orland, Cal.

The Leading Live Stock Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

$235.
8—Prilly Walker Colantha, Nov., 1914; F. L. Harvey, Galt, $395.
10—Diosa Cornucopia, June, 1916; Geo. P. Robinson, $200.
11—Hengerveld Culvert Brook Piebe, April, 1916; R. L. Holmes, Modesto, $325.
12—Leoncillita Segis, Dec., 1916; Geo. P. Robinson, $250.
13—Manteca Pontiac Segis De Kol Alban, March, 1916; Wm. F. Watson, $275.
14—Circle De Kol, Feb., 1916; Bonita Stock Farm, Lodi, $400.
15—Lady Geneseo Saltertia Johanna, Dec., 1914; F. L. Harvey, $280.
16—Manteca Glista Calypso Perfection, July, 1916; N. K. Horan, Lockeford, $195.
17—Circle B. Capsta Merecedes, Jan., 1913; Geo. P. Robinson, $215.
18—Uniform Segis Lonora, Feb., 1914; J. W. Coffee, $150.
19—Circle B. Colantha, April, 1913; E. B. Goodwin, Ripon, $430.
20—Mountain Pontiac Queen Torchlight, April, 1918; M. J. Edwards, Ripon, $265.
21—Miss Pontiac La Siesta, March, 1918; N. K. Horan, $210.
23—Queen Pontiac Torchlight, Feb., 1918; N. K. Horan, $265.
24—Anona of the Heights, Feb., 1917; Edmund Henry, Ripon, $275.
25—Miss Hoskins La Siesta, March, 1916; F. H. Harvey, $175.
27—Circle Contentment De Lone, Sept., 1915; V. F. Dolcini, $325.
29—Circle Orizaba Snowball, Aug., 1916; R. L. Holmes, $280.
30—Delmar Kakenstein Del Kol, Nov., 1912; R. L. Holmes, $325.
31—Silverton Pontiac Fayne, June, 1915; Geo. P. Robinson, $200.
32—Baby Lyons Tiffany, Nov., 1914; N. K. Horan, $490.
33—Fern Aaggie Jewel 3d. Dec., 1914; F. H. Harvey, $435.
34—Alice Culvert Brook Jarle, Dec., 1915; R. L. Holmes, $300.
35—Bellinhurst Alcartra Onyx, April, 1916; M. J. Edwards, $275.
37—Miss Seba Pontiac Torchlight, March, 1918; W. H. Yelland, Stockton, $155.
38—Tamberla Pontiac Torchlight, Mar., 1918; N. K. Horan, $170.
39—Durasia Pontiac Torchlight, March, 1918; M. J. Edwards, $225.
40—Sarcastic Beauty Torchlight, June, 1918; Geo. P. Robinson, $180.
41—Circle Snowball Meerschaum, Jan., 1917; Edmund Henry, $225.
45—Bonita Pontiac Pieterje, Aug., 1917; M. J. Edwards, $210.
46—Bonita Windsor De Kol Florinda, Aug., 1917; M. J. Edwards, $200.
47—Bonita Ormsby Pieterje De Kol, July, 1917; F. H. Harvey, $285.
48—Bonita Prilly Fobes, Nov., 1917; M. J. Edwards, $270.
49—Bonita Ormsby Colanthus, Geo. P. Robinson, $200.
63—Cantate Snowflake Hengerveld, Feb., 1915; Geo. P. Robinson, $160.
64—Princess Hengerveld of Laguna, Aug., 1915; E. B. Goodwin, $245.
67—Circle B. Meerschaum, June, 1913; F. H. Harvey, $460.
68—Uniform Segis Alban Fayne; N. K. Horan, $295.
69—Cantate Sunrise Hengerveld 2d; W. Peck, Manteca, $215.
70—Heifer; M. J. Edwards, $185.
72—Bonita Hengerveld Fayne, 1917; F. H. Harvey, $185.

BULLS

50—Model Domino Glista, Sept., 1916; J. W. Scudder, Holt, $425.
53—Manteca Ormsby Walker, Sept., 1918; Walter Chinn, Manteca, $175.
55—Manteca De Kol Walker, Sept., 1918; Geo. P. Robinson, $150.
56—Manteca Inka Pontiac, Sept., 1918; D. F. Graves, Lathrop, $160.
57—Manteca Lyons Spofford Walker, Sept., 1918; P. J. Bigler, Stockton, $150.
59—Manteca Model Pontiac, Aug., 1918; Geo. P. Robinson, $175.
60—Manteca King Walker, July, 1918; O. P. Gilliam, Dixon, $225.
61—Manteca Segis Walker Jewel, April, 1918; Adolph Johnson, Stockton, $180.
62—Manteca Walker Model Segis, Mar., 1918; F. H. Harvey, $200.

PRESTON AYRSHIRE HERD DISPERSED

The first sale of registered Ayrshires ever held in California was made by the Preston School of Industry of Ione, when the entire herd owned by that institution was dispersed at the state fair grounds, Sacramento, September 16.

The sale disclosed a widening demand for this Scotch dairy breed and while the number of buyers attending the sale was small the offering was absorbed with little trouble. As a whole he values that obtained ruled conservative.

F. H. Faye who is establishing a herd near Grafton and W. H. Frey of La Honda were the largest purchasers. The Penobscot Farm near Cool, El Dorado County, secured a number of the choicer lots.

The sale was held under the management of the California Breeders' Sales & Pedigree Company of Sacramento, and Ben A. Rhoades of Los Angeles was the auctioneer.

A representative list of sales follows:

BULLS

1—Preston Premier, June, 1917; O. L. Shafter Estate, Inverness, $170.
2—Steybrae Masterpiece, Aug., 1916; Shafter Estate, $150.
42—Preston Prince Master, Oct., 1918; Shafter Estate, $65.
43—Preston Ravendale, Feb., 1918; Shafter Estate, $130.
44—Preston Prince Bangles, Nov., 1917; Shafter Estate, $160.
45—Preston Masterpiece, Jan., 1919; Shafter Estate, $125.

FEMALES

3—Lady Douglas of Steybrae, Nov., 1915; H. P. Faye, Grafton, $335.
6—Millie Preston, Nov., 1917; Geo. W. Frey, La Honda, $105.
7—Preston Princess, April, 1918; Geo. W. Frey, $105.
8—Preston Nellie Osborn, April, 1918; Penobscot Farm, Cool, $190.
9—Cedar Hill Queen, Sept., 1915; H. P. Faye, $400.
10—Steybrae Ruby, March, 1916; H. P. Faye, $150.
11—Cedar Hill Jean 2d, Aug., 1916; H. P. Faye, $160.
13—Cedar Hill Pet, April, 1915; Geo. W. Frey, $185.
14—Cedar Hill Kate, March, 1915; L. M. Boyce, Sacramento, $125.
15—Beaver Meadow Lassie, Feb., 1914; Mrs. Eugenie Hughes, Sacramento, $190.
16—Cedar Hill Dandy, March, 1915; Penobscot Farm, $140.
17—Terrance Bank Gay Lass, Dec., 1912; H. P. Faye, $300.
18—Cedar Hill Mayflower, March, 1915; Geo. W. Frey, $180.
19—Cedar Hill Viola, Nov., 1913; Penobscot Farm, $260.
20—Cedar Hill Princess, Sept., 1915; Penobscot Farm, $200.
21—Preston Princess 2d, May, 1919; Geo. W. Frey, $75.
22—Cedar Hill Millie, May, 1913; Geo. W. Frey, $300.
23—Cedar Hill Nellie Osborne, Oct., 1913; H. P. Faye, $300.
24—Cedar Hill Doris 2d, Sept., 1915; Geo. P. Robinson, $115.
26—Queen of Steybrae, May, 1914; H. P. Faye, $200.
27—Ravensdale Doreen Sept., 1915; Penobscot Farm, $310.
28—Cedar Hill Dew Drop, Nov., 1914; C. C. Perkins, Perkins, $170.
29—Beauty of Steybrae, Jan., 1916; Geo. P. Robinson, $110.
31—Soncy Maid of Steybrae, Sept., 1915; Geo. W. Frey, $305.
32—Preston Soncy Maid, May, 1919; L. H. Wilson, $50.
33—Jean Douglas of Steybrae, Oct., 1915; H. P. Faye, $225.
35—Cedar Hill Lady May, Sept., 1913; F. E. Howard, Sacramento, $160.
36—Preston Dandy, Aug., 1918; L. H. Wilson, $95.
37—Preston Doris 2d, May, 1918; L. H. Wilson, $65.
38—Preston Mayflower, Aug., 1918; A. Bloom, Petaluma, $95.
39—Preston Dew Drop 3d, Aug., 1918; L. H. Wilson, $95.
40—Preston Dew Drop 2d, Oct., 1917; W. E. Bullack, Oakland, $110.
41—May Preston, Nov., 1917; Geo. W. Frey, $210.

PLANS FOR SAN FRANCISCO SHOW

The construction of the big arena in the California building at the Panama Pacific Exposition grounds, San Francisco, has been started so that it will be in readiness when the California International Livestock Show opens on November 1st. This will seat upwards of 5000 people and have a ring large enough for the showing of horses in action, a nightly horse show having been included as part of the program. Pens and stalls will be built for 1000 head of livestock inside of the building, with carload lots in covered pens on the outside.

Every inch of the spacious California building will be devoted to the show, some 16,000 square feet being used for exhibits of dairy and barn equipment. In order to construct a show ring in which heavy horses can be shown in action, it will be necessary to lay at least an inch of clay and four inches of tan bark on the wooden floor of the building.

The poultry and rabbit show will be arranged in the balconies surrounding the big livestock exhibit in the large pavilion room.

Room will also be provided for barn and dairy appliance exhibits. This unique feature of the show will not only be instructive to farmers who are particularly interested in these modern appliances, but will be of great educational value to city people who have little or no conception of the modern and sanitary equipment used by progressive farmers .

The inquiries for premium lists indicate that the show will be made up of herds and flocks from all Pacific Coast states as well as a number from the Middle West and Rocky Mountain regions.

The Rosedale Stock Farm, Eugene, California, reports having received a select shipment of Hampshire sheep. Included in the lot were a number of extremely high class selections made from the leading flocks of England by Robt. S. Balstock. The English flocks represented are those of Judd, Ishmay and Williams. The American flocks contributing to the shipment are Butterfield, Detweiler and Howland. Twelve yearling ewes were sired by the $1600 Detweiler ram.

Yes, the world owes you a living, but you will starve to death if you sit down and wait for it to come round and settle.

Pork Production

By Actual Test Pure Hawaiian Cane

MOLASSES

will increase pork production approximately five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price. Do you know of any other feed at any price that will do this?

Why not get all the profits out of your hogs?

Write us immediately for a copy of above test.

W. H. Young Company

58 Sutter Street San Francisco

Diamond Bar Ranch
Spadra, Los Angeles County, Calif.

DUROC-JERSEY SWINE

Leading Breeders of the Big Type

Our 1919 show herd: Mammoth Sensation 2d—one of largest junior yearlings of the breed, 1st prize, senior, reserve senior, and reserve grand champion at Sacramento; California's Great Wonder, grand champion at Sacramento, 1918, and Great Sensation 2d, one of the crack yearling sons of old Sensation. Two aged sows—Critic's Rose, grand champion at Liberty Fair, 1918, and Critic's Orion; also our "Big-4" string of junior yearling sows—Ohio Sensation Girl, Willetta Idlewild, Pathfinder's Col. Girl and Gano's Wonder Girl, blending the top blood lines of the breed; pair of under-year sows—Pathfinder's Very Best and King's Golden Girl, daughter of Great Wonder I Am.

20 Ribbons at Sacramento, 1919. Comprising ¾ Winnings Entire Show.

Senior boar, 4th; junior yearling boar, 1st; senior boar pig, 3d; aged sow, 2d; senior yearling sow, 2d; junior yearling sow, 1st, 2d and 3d; senior sow pig, 1st and 4th; reserve senior champion and reserve grand champion boar, and reserve junior champion and reserve grand champion sow.

325 pigs to select from for the trade, sired by California's Great Wonder and a son of Orion Cherry King 5th; also bred sows mated to leading boars of the breed. Write us or visit the ranch.

Walter T. Gatton, Manager Swine Department

Popularity Spells Success

GREAT MODEL The most popular DUROC-JERSEY sow sire on the Pacific Coast. Why?

He stamps on his get his own wonderful individuality, size, smoothness, and breeds prolificacy, feet and legs.

We won at State Fair grand champion sow, senior champion and reserve senior champion, 1st senior yearling, 2 and 4 under year sow.

80 bred sows and gilts for sale. We will be pleased to send you full particulars.

Winsor Ranch R. K. Walker Manager **Bonita, Calif.**

Butte County Herd

Of the right kind of Duroc-Jerseys. Butte's Golden Pet a 700 lb. sow. with the largest bone and best feet of any sow on the Coast. More in the herd of like callbre. Write me for young stock.

W. V. BENNET Nord, Calif.

All Good---We Sell

No animal leaves our ranch for breeding purposes unless it is of the correct Duroc-Jersey type and breeding.
That's one reason, and a mighty good reason, for our large business.
Write me just what you want and I will send you full description and price them reasonable.

Allen Thompson Tulare, Calif.

Greenwood DurocS

It is possible to secure as good but none better.—We not only breed them right but grow them properly. It will be well worth while to write Greenwood Farm for the kind of Duroc-Jerseys you want.

H. C. Witherow, Mgr. Live Oaks, Sutter Co., Calif.

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YOUNG BOARS, WEANLINGS
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BIG TYPE, POLAND CHINA DAY

BIG TYPE POLAND CHINAS

Trewhitt, Vaughn and Nehls Sell Big Type Poland Chinas

This sale, as it should, will attract buyers from all parts of the west. And why shouldn't it? No such offering of Big Type Sows and Gilts has ever before been offered at Public sale on the Pacific Coast.

This Kind Sells

BIG TYPE POLAND CHINAS

70 --- Bred Sows and Gilts---All Big Stock---Sell --- 70

This is one of the most important offerings of bred Poland-China sows and gilts ever held on the Pacific Coast. All bred to some of the outstanding boars of the breed. What this means to the young breeder just establishing a herd—what this means to the old breeder already established—cannot be measured. You can purchase at your own price, bred Poland-China sows and gilts, strictly Big Type.

The long, big, deep, smooth, motherly kind you have always desired.

This is the sale worth waiting for—the sale worth going miles to attend.

Owing to the number of high class animals to be sold the sale will start promptly at 10:30 A. M. Lunch at noon. Geo. W. Bell, Tulare, will be the auctioneer. Address for catalog any of the consignors, at Hanford.

W.D.Trewhitt--C.A.Vaughn--G.H.Nehls

Make Up Your Mind Now

To Attend the Poland-China Sale of

Bassett, Crawshaw and Ross

Tuesday, October 7, Hanford, Calif.

From these three herds there has been selected animals whose sire and dam have been an important factor in building up Poland-Chinas in California. You cannot fail to be impressed with the individuality of the animals offered and what may you expect when they are bred to such boars as KING'S TIMM, MODEL FELLOW, JR., BIG TIMM and SOME PRICE.

75 head in this sale including a few herd boars.

Every animal immunized. You'll be there of course.

Address Fred Ross, Hanford, for catalog.

Ord L. Leachman, Auctioneer

Always a Big One

The Kings County Poland China Breeders Association next big sale will be held in

Hanford

Saturday, Oct. 11, 1919

80 Bred Sows and Gilts, Few Boars

These animals represent the best these herds afford which means the best to be found on the Pacific Coast. Buy Poland Chinas for the same reason you would buy a farm—Make Money. The profitable kind will be sold in this sale. Come to Hanford and be with us at our next big sale.

Write Fred. D. ROSS, Secretary, for catalog

BEN. A. RHOADES, Los Angeles, Auctioneer

RANCHO DEL SUR DUROCS
THE BIG JUNIOR CHAMPION,
ORION KING GANO at head of herd
Also in service, the great boar
CALIFORNIA'S ORION CHERRY KING
Young boars fit to head first class breeding herds now for sale.
For description, etc., write
DONALD H. GRAHAM, Lancaster, Calif.

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. Duke, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

ELBERG TO SELL HIGH CLASS SHORTHORNS

Shorthorn interests of California are looking forward to the sale announced by H. M. Elberg, proprietor of the Roselawn Stock Farm, Woodland. The sale will be held at the farm adjoining Woodland, Thursday, October 16, and will include some of the best Shorthorns to be sold in the West this fall. The Roselawn herd has been before the public for near 30 years and has always been regarded as one of the choicer collections of the breed owned in the West. Breeders are especially interested in the offering of the herd bull, Crescent Dale, regarded by many as one of the top bulls owned in this state. The reason that breeders will have an opportunity to appraise him at auction is due to the fact that the sale is made necessary in order to reduce the herd to a point that will permit it being handled on smaller acreage. Consequently fewer females will be maintained and the service of two bulls will no longer be required. Besides Crescent Dale a number of younger bulls will be sold.

The females to be catalogued include a large number of really outstanding matrons that will attract the better buyers. It is thought that the sale of Mischief E 3d constitutes the first time that a California state fair grand champion has ever been offered at public sale. She was champion at the 1918 show and it is of interest to know that she is the dam of Roselawn Champion, junior champion at the same show.

Another extremely popular female is the white junior yearling heifer, Rosie Mayflower, a daughter of Sultan Mayflower, the famous herd bull owned by the University Farm and therefore a half-sister to the champion Shorthorn steer of 1918 and California Model, the highest priced Shorthorn bull ever sold at auction on the Coast.

The offering is made up largely of Scotch breeding, with a number of highly desirable Scotch topped individuals.

A recent inspection of the cataloged lots leads to the conclusion that the sale will be one of the most attractive yet held in this state. The sale will be under the management of C. L. Hughes of the California Breeders' Sales & Pedigree Co., Sacramento.

CALIFORNIA AT THE NATIONAL DAIRY SHOW

A number of California live stock men and creamery men are on their way to the National Dairy Show to be held in Chicago, October 6-12. Still better, some of California's stock and dairy products will be exhibited. Some of the University of California stock will be exhibited at the International and here's hoping it will bring home the money from those exhibits.

Meantime, Dr. Maynard Rosenberger of Los Angeles has been busy gathering together exhibits of California produced milk. He shipped on Monday, September 22, 36 entries. These consisted of 27 exhibits from regular market milk guaranteed or certified. These exhibits are expected to arrive ready for judging on September 29, though all awards may not be announced until opening day, October 6.

To the ordinary dairyman it may appear remarkable that exhibits of milk may be shipped across the continent without any preservatives whatever, other than ice, and be ready for competition with nearby produced milk and stand a reasonable show of making a winning. We may add, however, that there are fewer of "ordinary" dairymen than a few years ago, and California is an example of extraordinary work on the part of her producers.

DIAMOND BAR DUROCS

On May 24th W. T. Gatton of the Diamond Bar Ranch, Spadra, Los Angeles County, returned from a buying trip through Iowa and Nebraska, bringing with him 74 head of pure bred Durocs which, added to the already strong herd, serves to place this fine breeding herd right at the head of the procession. The matter of price stood not in the way when the animal and the blood lines suited. The public is henceforward invited to pass judgment on the herd any and every day in the year. About 325 spring pigs are to be selected from by prospective buyers. These pigs represent the get of the big boar California's Great Wonder, the 1918 grand champion and a good son of Orion Cherry King 5th. Here also may be found high class sows, mated to best boars of the breed, and fit material for founding high class breeding herds. The judge's awards at Sacramento indicate that Mr. Gatton turned the right trick in selecting animals that will stand the test of the expert as to type and high individuality. Twenty ribbons fell to the credit of the Diamond Bar exhibit, including some of the highest honors within the gift of the state fair association. The great junior yearling boar, Mammoth Sensation 2d, easily won 1st in one of the finest classes ever seen at a Pacific Coast live stock show. One of the real sensations of the show was seen in the outstanding under year sow, Pathfinder's Very Best. The Diamond Bar show herd will be seen at both Riverside and Los Angeles live stock shows.

HIGH QUALITY HAMPSHIRES

From a select foundation laid about two years ago C. J. Gilbert has built up a very substantial herd of registered Hampshire swine at Lancaster. A $3000 hog house marks the enterprise as one that is to stay. The herd boar is the big three year old, The Harvester Again. He combines good length with excellent bone, fine feeding quality, and unusual display of breed character. Some of the leading brood sows are Wavelet, Mary Pickford, Leading Wave 3d, Second Echo, True Quality, Gilbert's Pride and Lancaster Queen.

Wavelet may be recalled as the outstanding senior yearling sow at Liberty Fair. She is extremely large for age, has a back that will never dip and carries great depth of body withal. She is a daughter of Conejo Chief. Mary Pickford is another by same sire. She was 1st in aged sow class at both Sacramento and Los Angeles, 1918, while Leading Wave 3d stood in third place at both shows.

True Quality is the dam of the litter of ten perfectly belted pigs seen at Liberty Fair, the get of Duke's Allen. Since that date she has farrowed litter of seven by a son of Duke's Allen—all with perfect beltings. Four of these young sows are reserved for the home herd. Three sows and one boar from the older litter are to figure as the Gilbert young herd, get of sire and produce of dam. The Gilbert show herds will be seen at Lancaster, Riverside and Los Angeles.

100 Registered Holsteins 100

at Public Auction

Thursday, October 30, 1919

Ripon, California

On the C. A. Miller Ranch, 6½ miles northwest of Ripon, 13 miles southeast of Stockton, on French Camp Road.

Contributors to sale:
C. A. MILLER, GOTSHALL & MAGRUDER, and H. A. DeWOLF, all of Ripon.

In this sale C. A. Miller will sell his entire herd with the exception of two cows and a few heifer calves; Gotshall & Magruder will sell 30 head of choicely bred cows, heifers and bulls; H. A. DeWolf will sell 20 head of highly bred young cows, nearly all with good A. R. O. records, and some extra well bred heifers. This sale will contain:

A. R. O. Cows with records up to over 28 lbs. butter in 7 days.

Heifers from A. R. O. dams with records up to over 32 lbs. butter in 7 days.

Splendid cows and heifers bred to a 33 pound son of King Mead of Riverside.

Daughters of Sir Veeman Korndyke Pontiac, 30 pound son of Sir Veeman Hengerveld.

And sons or daughters of these richly bred bulls: Prince Gelsche Walker; King Korndyke Pontiac 20th; It; Sir Segis Walker; King Segis Pontiac Jannek; King Lillian Walker Segis; Arcady Pontiac Wayne Hengerveld; Sarcastic Legislator; Prince Aralia Walker; Nudine Butter Boy; King Morco Alcartra; Prince Gelsche Walker 11th; Moorland King Mead Haskins; Colantha Sir Pontiac Aaggie; King Paul Korndyke Vale; Sir Segis Walker.

Every animal guaranteed to be a breeder.

No animal in sale is tuberculin tested.

Catalog free on application.

Management

California Breeders Sales and Pedigree Co

J. M. Henderson, Pres. C. L. Hughes, Sales Manager

Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare

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October 18 to 26

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Economy Stock Powder
will keep your pigs in condition by acting on the liver, kidneys and blood. Will keep the stomach sweet, expel worms, aid digestion and prevent white scours and thumps.
Send for a free sample and our booklet "Economize Your Farm."
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For 23 cents you can insure your calves against death from Blackleg by having them vaccinated with PURITY BLACKLEG AGGRESSIN. (The Kansas Germ Free Blackleg Vaccine.) One treatment immunizes for life and there is no danger in introducing Blackleg into healthy herds of cattle. We also manufacture and sell PURITY ANTI-HOG CHOLERA SERUM, PURITY MIXED VACCINE for swine, and PURITY HEMORRAGHIC SEPTICEMIA VACCINES for cattle and sheep. Stop your losses and increase your profits—it's good business. For service that counts, and does not end by selling, write, wire or phone

PURITY SERUM CO., J. L. Thatcher, Manager (Successor to Thatcher Serum Co.)
Riverside, Calif. Sacramento, Calif.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Feeding for Eggs

By Jean A. Koethen

BREEDING, cullIng and feeding are the three consecutive steps in the development of the high producer. There is no profit in feedIng expensive grains to a hen that is not properly bred, and some hens that have the breeding which makes for egg production still fail to deliver the goods and must be culled out and consigned to the pot. When all has been done that can be done to provide a perfect egg machine, there is still one thing left and that is, to provide the materials which the machine is to transform into bone and muscle and meat and eggs.

The feeding of a laying hen has two purposes, two distinct aims. In the first place, her bodily functions must all be maintained. She must be reasonably well covered with flesh, her muscles must be renewed as they wear out from week to week, she must be kept warm on cold nights. The portion of her ration which provides for bodlly maintenance is, generally speaking, the scratch feed or hard grain ration. This should be about half the whole ration, or perhaps, during the season of heavy production, a little less than half.

Hens that are fed on grain alone incline to become too fat for egg production, for the grains are high in starch and fatty content and low in protein. Wheat, the best of all grains for egg production, contains only about one part protein to six or seven of carbohydrates. Oats are about the same. Barley is one part protein to about eight of carbohydrates, while Indian corn is one part protein to eight and a half of carbohydrates. As the best ration for egg production should contain one part protein to four and a half or five of carbohydrates it is easy to see that grain alone will not do. Protein must be added in some form or other.

The Balance of Ration

Just a word about protein. Nobody can define it exactly. It is something that cannot be separated and put off by itself as one might separate acids or salts. We know in a general way that it belongs to a group of substances which contain a good deal of nitrogen, but protein is not exactly nitrogen. Lean meat contains a large amount of protein, so does skimmilk, so does an egg. Beans and peas contain a good deal. The common dry bean is about one-third protein. The soy bean is half protein. Flaxseed is one part protein to four of carbohydrates.

I like the way Professor Dryden of the Oregon Station explains the need of protein feeds in egg manufacture. "An egg," he says, "contains one-quarter ounce of protein. If the hen be fed on wheat and nothing else she may eat four ounces per day. Of that she will need about three ounces to supply bodily needs. This leaves one ounce to make eggs with. In an ounce of wheat there is about one-tenth of an ounce of protein. Now, supposing the protein is all digested, which is not the case, she won't get enough protein to make half an egg a day. But an egg every two or three days wouldn't be so bad at certain seasons. The egg, however, contains other things. It contains also about one-quarter ounce of lime with which to make the shell. An ounce of wheat contains less than one-tenth as much as one egg contains. The egg also contains fat. It contains less than one-quarter ounce of fat, but the wheat would contain three-quarters ounce of fat formers."

The ration which contains all the elements necessary both for bodily maintenance and egg production is a balanced ration. It may consist of many ingredients or few but it should contain approximately one part protein to every four and a half or five parts carbohydrates and fats. Protein may be supplied by the addition of one of the meat meals, by fish meal or milk, soy bean meal, linseed meal, peanut meal, sunflower seeds, or any of several vegetable meals. Experiments at Davis showed that while linseed or soy bean meal may be used to supply part of the protein content of the mash, it cannot satisfactorily replace the meat meal altogether.

Value of Milk

Milk is the only protein food that has so far been found that can satisfactorily be used in place of beef scrap or fish scrap. At the Connecticut Station, during the egg-laying contest of 1915-1916, this experiment was tried with five groups of two pens each, consisting of Barred Rocks, White Wyandottes, Rhode Island Reds, White Leghorns and Light Brahmas. One pen in each of these five groups was fed the regular contest ration, the other pen in each group was fed in precisely the same way except that the beef scrap and fish meal were withheld and sour milk was used in their stead. In four of the five pairs of pens, the hens that had sour milk laid more eggs than those which had the regular ration containing beef scrap and fish meal, and the milk fed Barred Rocks distanced the meat fed Barred Rocks by 700 eggs. The meat fed R. I. Reds laid 250 eggs more than the milk fed, but the difference is laid to other causes than the ration.

Many California poultrymen use both beef scrap and milk, keeping the dry mash containing beef scrap before the hens constantly, and in addition moistening it once a day with sour milk or buttermilk. This method of feeding seems to have originated at the Missouri station, where it was successfully practiced for some years.

"I would never hatch another chick without one"

says John F. Forney, a successful poultry raiser of Kingsburg, Cal., "—if I could not have all my machines equipped with your regulator. The heat does not vary one-fourth of a degree during the last three or four days. Its action is almost human." Many others write us about the

CHARTERS REGULATOR

(Readily attached to your incubator. Part of the equipment of Charters Incubator.)

How it works:
It's the two thermostats that do the trick, one outside and one in the egg chamber, actually anticipating any change of temperature and automatically adjusting the size of the flame. The temperature outside may vary as much as 70 degrees, without producing as much as half a degree of change in the egg chamber. With the Charters you will not need an incubator cellar.
The big tank holds a fuel supply capable of running the lamp from 2 to 3 weeks. That means only one refill and trimming of the wick a week.

P. R. Lyding of Sebastopol, with twenty-six years of incubator experience, writes: "Your Regulators complete are absolutely the best I have ever used. I installed them myself—and can feel sure when machines are hatching, if unwatched, temperature will not vary to exceed one-half of a degree."

J. H. Stubbe, of Palo Alto, writes: We need not give the lamps any thought at night. The Regulator takes care of any changes in temperature perfectly. It is certainly a relief."

Many big hatcheries operating upward from one-hundred machines, are discarding all others and using Charters Regulators and Incubators exclusively. Owners of only one machine are finding the Charters Regulator a treasure.

Write today for free catalogue—or better still—let us have your order now, for your Charters. The Regulator is $10; the Incubator (equipped with Regulator) is $65.

Remember: If the Charters Regulator and Incubator do not do what we claim for them—your money back.

See The Charters at principal fairs and poultry shows this year.

CHARTERS MANUFACTURING CO.
334 Soquel Avenue, Santa Cruz, California

Rush Molting Hens Back to Work

THIS year of all years—with egg prices going the highest ever—get a big fall and winter egg-yield. Get your hens through molting—when they're all expense and no income—as fast as you can. Get your pullets to laying *early* and *regularly*. Yes, get *all* the profit you can from the high egg prices. Give *all* your poultry

Pratts Poultry Regulator

AMERICA'S original poultry tonic and conditioner, the standard for nearly fifty years. It builds health and strength *naturally*. It stops losses from the strain of molting. It puts and keeps hens in the condition where a good ration is all they need to lay the biggest lot of eggs you ever got. See if it doesn't. At *our* risk—

"Your Money Back if YOU Are Not Satisfied" P-1

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Write for Pratts NEW Poultry Book—Free

PRATT FOOD COMPANY
Philadelphia Chicago Toronto

Makers of Pratts Animal Regulator, Hog Tonic, Dip and Disinfectant, Veterinary Remedies.

DR. HESS Instant Louse Killer Kills Lice

For Use On Your Poultry

Seize the hen and dust Instant Louse Killer into the feathers. The handy sifting top can makes it convenient to use. Sprinkle it in the nests, on the roosts and floors. Put Instant Louse Killer in the dust bath occasionally—your hens will do the rest. This means louse prevention.

FOR STOCK

With one hand stroke the hair the wrong way, with the other sift in the Louse Killer. Especially good for lousy colts.

GUARANTEED. The dealer will refund your money if it does not do as claimed.

1 lb. 30c, 2½ lbs. 60c (*except in Canada*)

Dr. HESS & CLARK
Ashland Ohio

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Eggo-O-Latum Keeps Eggs One Year

It costs only one cent per dozen eggs to use Egg-o-latum. There is no other expense. Eggs are kept in carton or box in cellar. Eggs may be boiled, poached or used in any other way, just like fresh eggs. Simply rubbed on the eggs—a dozen per minute. A 50c jar is sufficient for 50 dozen eggs. At Drug, Seed and Poultry Supply Stores or postpaid.

GEO. H. LEE CO., Dept. 418. OMAHA, NEB.

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FULL PARTICULARS IN FREE BOOK "CHICKENS FROM SHELL TO MARKET"
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BOOK ON DOG DISEASES And How to Feed

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ENERGE-DECARBO

The greatest Gasoline and Distillate Tonic removes and prevents carbon, gives 25 per cent more power and miles per gallon. Chemist tests show it to be harmless to anything but carbon. Send for circular.

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(Sale and use of this gasoline saver is unlawful in Los Angeles city.)

Eggs on a Grain Ration

F. W. Wenzel, a Wisconsin poultryman, has recently published the results of an experiment in which his flock was fed during the winter a ration of oats, barley, corn and mangel beets, without any mash whatever. His hens averaged 14 eggs in January and 13 in February, which is quite up to that of most commercial flocks. He found, however, that the eggs were smaller than usual and fertility doubtful, though not more doubtful than in many mash-fed flocks. His hens were also inclined to be over fat. Comparing his findings with those of the Purdue station, where a pen fed on skim milk averaged 140 eggs; a pen fed on beef scrap 136 eggs; and a pen fed a ration containing neither milk nor meat 61 eggs, Mr. Wenzel thinks there must have been some other factor at work in the Purdue flock than difference in feed.

As the animal portion of the ration is considerably more expensive than the grain portion we should be fortunate indeed if an all-grain ration could be devised which would do away with the use of meat and milk but no such ration has as yet been found. Experiments at Davis have proved that if a little meat meal is good, much is no better. I have not the figures at hand but if I remember correctly, the investigators found that 15 per cent of animal or animal and vegetable meal was necessary to best production, but that this 15 per cent might be half meat meal and half vegetable meal without affecting production, and that there was no increase in production when a greater amount of meat meal was used.

Some Good Mash Formulas

There are thousands of good mash formulas, probably one for every experiment station and successful poultryman, for they all have their hobbies. Perhaps it does not so much matter just what is in the mash if only there is a variety. At the Vineland international egg laying and breeding contest this ration was used:

Scratch Feed

Cracked corn	100 pounds
Heavy oats	100 popnds
Feed wheat	100 pounds

Mash Feed

Wheat bran	100 pounds
Wheat middlings	100 pounds
Corn meal	100 pounds
Ground oats—heavy	100 pounds
Meat scrap—high grade	100 pounds

At this contest the amount of scratch feed per 100 hens daily varied from 12 pounds in November to five in August. From November to March there was a noon feeding of two pounds, with a morning feed of two pounds and an evening feed of eight pounds. During the other months grain was fed only morning and night.

At the Storrs egg laying contests the mashes and scratch formulas have been changed from year to year and the later are the more simple. In the fifth contest the mash consisted of 100 pounds each of bran, corn meal, ground oats, and middlings; 50 pounds fish scrap and 50 pounds beef scrap. The scratch grain fed with this consisted of equal parts wheat and cracked corn.

A good mash for Leghorns which was given me by a well-known Leghorn breeder, consists of:

Wheat bran	600 pounds
Ground oats	200 pounds
Sour milk	400 pounds
Darling's beef scrap	200 pounds
Corn meal	300 pounds
Fish meal	100 pounds
Ground bone	100 pounds
Charcoal	25 pounds
Salt	10 pounds

The laying ration used last year at the Davis farm consisted of the following mash:

Bran	5 pounds
Shorts	5 pounds
Meat scrap	3 pounds
Soy bean meal	2 pounds
Ground barley	5 pounds
Charcoal	½ pounds
Salt	1/10 pounds

The scratch feed used with this mash contains 15 pounds wheat, 10 pounds barley and 5 pounds cracked Indian or whole Egyptian corn.

NATIONAL EGG LAYING CONTEST

July report of Eighth National Egg Laying Contest at Mountain Grove, Missouri.

The total number of eggs laid in July was 4853, an average of 16.17 eggs per hen. A pen of Brown Leghorns from Missouri won the cup for July by laying 118 eggs during the month.

The leading pens of each variety for July are:

Brown Leghorns, Missouri, 118 eggs; Red Comb White Leghorns, Missouri, 112; Single Comb Reds, Missouri, 109; Rhode Island Whites, Connecticut, 105; Anconas, Missouri, 105; Barred Rocks, Missouri, 104; White Rocks, Missouri, 102; Single Comb White Leghorns, Missouri, 96; White Wyandottes, Illinois, 94; Silver Wyandottes, Iowa, 93; Buff Leghorns, Illinois, 92; Red Comb Reds, Missouri, 85; Buff Wyandottes, Massachusetts, 82; Black Langshans, Missouri, 73; Black Langshans, Missouri, 73; Buff Orpingtons, Missouri, 61; Buff Orpingtons, Missouri, 61.

The ten leading pens to date are:

Red Comb White Leghorns, Missouri, 944 eggs; Rhode Island Whites, Connecticut, 937; Rhode Island Whites, Missouri, 912; Red Comb White Leghorns, Missouri, 909; White Wyandottes, Illinois, 863; White Rocks, Missouri, 863; Red Comb White Leghorns, Missouri, 856; Anconas, Missouri, 827; Silver Wyandottes, Missouri, 819; Single Comb White Leghorns, Missouri, 811.

Poultry Queries

Conducted by J. A. Koethen

Chicken Tick

We have been bothered with a brownish gray chicken tick about the size of a large pea. These get on the roosts and on the hens keeping them from laying. They were so bad when we came here we burned the old hen house. Can you give me a remedy?—Subscriber, Orizona.

Those ticks are the hardest things in the world to get rid of after they have once gotten a foothold on a poultry ranch. Crude carbolic acid diluted with kerosene (1 part acid to 4 of kerosene) will kill them in the house if you can reach every tick with it. If you let a single one get out of reach in a crack your work will have to be done over again. This insecticide is best applied with a brush, for then you can be perfectly sure that every inch of the wood of walls and roots is touched. There are several cresol preparations and several carbolic acid preparations, such as carbolineum. but they are all much alike. Any of them will kill ticks, I think, if applied thoroughly enough. Corrosive sublimate is the only remedy suggested for killing the ticks that are on the bodies of the birds, and this must be applied very carefully with a brush or the end of a feather, for it might blind either the chicken or the one who was using it if it came in contact with the eye of either. I have an idea that a thorough greasing with lard or carbolated vaseline would kill most of them as it does sticktight fleas, but have never seen it tried. You would have to repeat the greasing several times. If you do not succeed in getting rid of every tick there is nothing to do but to move your chickens to new ground some distance from the old.

Get more winter eggs

The moult is a severe test of a hens strength. It calls on her to supply all her surplus energy and flesh to make feathers. Hens must have a tonic during this critical period, to supply them with more energy, and help them to digest and *use* every ounce of the feed. Make your hens moult properly this year, by giving them

Dr. LeGear's Poultry Prescription
(Powder)

in their feed. This prescription, compounded from my 27 years' veterinary and poultry raising practice, absolutely cuts down the time and strain required for moulting, keeps hens in strong, vigorous condition and insures your getting more winter eggs from your hens. Don't lose profits from high winter egg prices by neglecting your hens during the moult. Try this famous remedy, recommended by thousands. I guarantee that it will help make your hens lay more eggs.

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Just completed. "The Care and Treatment of Stock and Poultry," by Dr. L. D. LeGear, graduate Veterinary Surgeon, of 27 years' practice. A wonderful help to all stock and and poultry raisers. It is a 128-page book, full of valuable up-to-the-minute information. Used as a reference book by veterinary surgeons and schools. It will save you many, many times its cost. Send 10c to us today and we will mail it to you, postage prepaid.

Dr. LeGear's Stock Powders. produce perfect digestion, drive out worms, increase growth and production.

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For Sale—Or part exchange, 140-acre combination ranch; 75 acres as good citrus land as in California, (frostless); walnut and almond and general fruit tree land; 25 to 30 acres fine for alfalfa—practically no water lift. Natural hog pasture, with perpetual water, shade and feed; poultry, turkeys, dairying under perfect conditions. More water than you can ever use practically at surface. Two miles from town, State highway; 12 miles from ocean. This is positively one of the best combination ranch propositions in California. Reasonable improvements in buildings, trees, etc. A large lot of feed now on the place for hogs, poultry, turkeys, cattle, horses—which goes in free. Also farm tools. This property cannot be duplicated in Southern California for less than $300 an acre—and lots of it poorer selling for $400 or more—and before spring you will pay $300 an acre for this. On account of ill health of owner, and dealing direct with him, this property can be had on quick action for something less than $175 an acre; and reasonable terms. If you are ever going to buy land, this is your opportunity. Would take small property, either town or country, as part payment. C. E. HOWLAND, Failbrook, Cal.

Washington "The Evergreen State" has splendid openings for more farmers. Fruit growing, dairying and live stock raising, as well as grain growing show great results. Here is a mild climate, ample rainfall or irrigation and many valleys of fertile soil. Land prices range from $25 an acre upward, depending on location and development. Good roads, schools and churches. Full information in new book by State Agricultural College and United States Railroad Administration, just off press. Ask for Washington book and give your name and address plainly. J. L. Edwards, Manager Agricultural Section, Room 677, United States Railroad Administration, Washington, D. C.

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$5,500, WITH PAIR HORSES

9 head stock, complete farming implements, etc., near R. R. town, high school, creamery, churches, etc.; 40 acres rich bottom land, 40 acres bench or 2nd bottom, balance fine tillage; much wood, saw timber, several acres orchards; 6-room house, barns, corn house, granary, etc. Aged owner to sell at once includes personal property and makes low price, $5,500 for all; easy terms. Details page 88 big 100-page Fall Catalog, just out; farm bargains Maine to Florida and west to Nebraska; copy free. STROUT FARM AGENCY, 831 A. G., N. Y. Life Bldg., Kansas City.

For Sale—140 Acres on proposed highway in Anderson Valley, Mendocino County. Nice open land, no rocks or stumps, all but 30 acres can be cultivated, 7 acres bearing orchard mostly prunes, 60 acres hay land, large garden, balance good pasture, fenced and cross fenced, hog tight, plenty of soft water, 20 buildings including fine 10-room house and large store. Price for ranch, goods and fixtures in store $18,000. Will sell hay, grain and stock cheap. Am sick, must sell. Terms. R. F. Smith, Philo, California.

For Sale—341 Acres A-1 Land; 125 in alfalfa, 75 ready for alfalfa, 85 in corn (soon ready for alfalfa), 15 in pumpkins, 20 in pasture. 6-room dwelling—old, and a small dwelling. Good horse barn, new dairy barn for 60 cows, six horses, 100 hogs and pigs. Water piped to six fields. Plenty irrigating water from Kern River. All necessary implements. Price $50,000, $12,500 cash will handle it. J. B. McCutchen, R. F. D. No. 3, Bakersfield, California.

Mountain Ranch For Sale 196 Acres—60 acres high grade fruit land, 50 acres suitable for grain, balance good grazing land, $3000 worth of uncut wood on the place. About 20 acres cleared, 12 acres fenced and partly planted to fruit trees. Plenty of water. Four-room board house, small barn, storehouse and pig pen. Price $3700. No agents or exchanges. Address Frank Mason, Badger, Tulare Co., California.

FINE INCOME PROPERTY
Located at Montain View, in the beautiful Santa Clara Valley; a 16-room house divided into apartments; $62.50 a month income; earns over 12 per cent on the investment. Price $5,000. Easy terms. A real bargain. Address D. R. Sperry, 386 Mountain View Avenue, Mountain View, California.

For Sale—Fruit and Poultrymen—It will be to your advantage to write today for information about the Paradise district—deep rich soil—ideal mountain climate. (Above frost and fog.) Electricity and an abundance of pure water.
Choice tracts $100 per acre.
PARADISE LUMBER CO.
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For Sale—Twenty Acres Alfalfa, 26 fine Holstein cows, 1 fine Holstein bull; good pumping plant; good 7-room house; two good cow barns. Fifty tons of alfalfa in the barn. Will sell reasonable. Address S. Stokes, Artesia, California. Phone 7105.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

For Sale — $1200 Relinquishment — 160 acres with well 114 ft. Water stands 28 ft. of surface. Deeper drilling would doubtless get flowing well. A. C. Vestal, Wagner, California.

For Sale—30 Acres Alfalfa.. Write me for descriptions, price, terms. L. E. Williams. R. D. No. 1, Box 10-B, Imperial, California.

For Sale—160 acres sandy loam, suitable for any kind fruit. At a bargain price. Twenty dollars acre. Write for particulars. Box 235, Casa Grande, Arizona.

FARM LANDS FOR SALE

If you want to sell or exchange your property write me. John J. Black, 116 St., Chippewa Falls, Wisconsin.

17 Acres—3 excellent houses; motors; barn; vineyard; orchard. Mrs. Kate Rae, Galt, Sac. Co.

CATTLE

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

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Tanks, Tanks—100 used redwood, iron tanks, no profiteering in these prices, which are same as before war: 200 gallons, oak cask, $4.75; 1000, $27.50; 1600, $32.50; 2000 redwood, $28; 3000, $33; 4000, 5000, $48; 6700, $58; 25,000, $125; bunch galvanized tanks, 100 to 3000 gal., make new galvanized tank, 22 gauge, 1000, $39.75; 2000, $53.75; go in car door. Cheap freight. Also 50 windmills, 25 pumps, 50 cylinders; ranch tools, surface irrigating pipe. DEMMITT CO., 120 N. Main, upstairs. Yards, 816 Yale, Los Angeles.

Sampson Tractor No. 25, 10 H. P. at drawbar, has 16-in. extension wheels on it, disk plow 4 disk 10 inch cut, 1 10-ft. seed drill double disk type, one iron wheel wagon, all in A-1 shape plowed 200 acres last year, complete outfit, price $2150. Some terms, address: J. L. Lingerfeldt, Burson, California.

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CASTLEVIEW
Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

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We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

BOAR
Sired by Baron Duke 201st
Weight 780 pounds
Grand National Champion
Damed by Rookwood Lady 100th
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one and one-half years old. Big boned, vigorous boar. Half-brother to 1919 Grand Champion that sold for $1000. I do not need this great breeder and he is being offered at a very low price. Sandercock Land Co., 23 Montgomery Street, San Francisco. In Charge of Natomas Land Sales.

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Sired by
ORION CHERRY KING, JR.
the $3,500 Boar.
is making his mark as a great breeder. He heads our herd of up-to-date Durocs. The most popular blood lines are represented in his pedigree—the kind that have laid the foundation for many prize winning herds. Choice spring boars for sale. If you are in the market for some outstanding boars, we have them. F. D. BURR Co., ORLAND, CALIFORNIA.

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

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are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. High class stock for sale at all times.
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Durocs—A few very fine gilts and boars five months old, about 175 pounds. Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

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I Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet California.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

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The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Our Faifadale Farm big-type Durocs, for 1919 are the best ever. Great Orion Sensation, Jr., at head of herd—a $2000 boar, with sows in same class. Write: B. H. Wilkinson, Mgr., Perris, California.

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The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Strictly Big Type Poland-Chinas; El Profito heads herd at 900 lbs.—a line bred Big Timm. Viola L. Renwick, Santa Barbara, California.

For Real Good Berkshires, cholera immune, write for my catalog that gives complete information. Frank B. Anderson, Box 724, Sacramento, California.

Poland-Chinas — A few good breeding boars, S. F. Williams, Chico, California.

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The Pacific Herd of Big Type Polands, King Hadley & Chief. Price breeding. Mrs. C. H. Andrews, Modesto.

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Pure Bred Poland-China Boars, three months old, $25.00 each. J. R. Carbart, Fullerton, California.

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OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
The male is half the flock, therefore he should be of the best breeding. We are offering 500 breeding cockerels; 350 from 200 egg hens or better, the other 150 the pick of all our regular pens. Prices range from $5.00 each and up. Discount on large quantities. Shipment to be made October 1st. No fall chix for sale. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trap nested S. C. White Leghorns every day in the year since 1912. Box B-337, Inglewood, California.

Fall Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heavylest laying (Hoganized) stock. Price during August: 25, $4.00; 50, $8.00; 100, $14.00. Price during September: 25, $4.50; 50, $8.50; 100, $15.00. Special prices 500 and 1000 lots. Safe delivery guaranteed; you pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

"BREADWINNER" WHITE ROCKS
The Egg-Bred Strain
Direct from Poorman's famous 200-egg bred-to-lay stock—a few cockerels at $7.50 and $10 each; age 8 and 10 months now.
BABY CHICKS AND EGGS
Grade A—Eggs $ 5.00 per 15
Grade A—Eggs $30.00 per 100
Grade B—Eggs $ 3.50 per 15
Grade B—Eggs $20.00 per 100
Guarantee 85 per cent fertility. We also have a few dandy White Wyandotte cockerels, Poorman strain. Pugh Poultry Ranch, Woodlake, California.

White Leghorns, chix and hatching eggs, also a few cockerels from Curtis' heavy layers. We spare no expense to produce heavy layers with strong vitality. Any chick is good enough for some but the progressive poultryman demands the best. Spring orders are being booked now. All our chicks are hatched from eggs laid in our own yards. O. B. Curtis and Son, Gardena, California. Route 1, Box 29.

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Get Baby Chicks Now—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good strong youngsters shipped. Stubbe Poultry Ranch and Hatchery. Box 67. Palo Alto, California.

Sly Offers Rhode Island Red Cockerels from special individual matings. Big, husky fellows, exhibition stock. Sons of high-producing hens. Send for descriptive literature. Albert Sly, 1642 (B) Middleton Place, Los Angeles.

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"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. SEPTEMBER CHICKS. Fairmead Poultry Farm, Fairmead, California.

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Send Your Order for Rock Red or Leghorn chicks to MADERA HATCHERY, Madera, California.

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Want Responsible and Experienced fruit, alfalfa or grain irrigation farmers to work on crop share basis. Land is river bottom tule land, plenty of water, good living conditions and good markets. Will enter into one or two years contract with right men and might extend same into option of purchase. Party should have some implements, live stock or money with which to buy them. Please state age, farming experience, from whom you have rented, amount of livestock and implements you own, financial condition, and size and age of family. State when your services will be available and amount of land you can handle. Address Herman Janss, San Joaquin, Fresno County, California.

An Experienced Dairy Herdsman, now employed in one of the leading Holstein herds of this state desires to make a change where a greater opportunity is afforded. Lifetime with Holsteins. Wisconsin agricultural college training. Capable of managing a first class herd where official records are made and where show herds are fitted. Best of references from several of the leading breeders of this state. Single. Address Wellington H. Nees, Box 238, Sacramento, California.

Wanted — Management of farm by Californian, thoroughly familiar with fruit, alfalfa, grain and stock growing. An expert in irrigation. Address Lock Box 944, Fontana, San Bernardino County, California.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted to hear from owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

MISCELLANEOUS

Have Your Clothes Cleaned, Pressed and repaired by mail; we cater to a mail order trade. Ladies' or gents' suits dry cleaned and pressed, $1. We pay return postage. CROWN HILL DYE WORKS, Parcel Post Department, 814 W. 3rd St., Los Angeles, California. Write for free catalogue.

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Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Made of Redwood, Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 816 Washington Building, Los Angeles, California.

Autometer—Reduces car expenses, troubles, accidents, improves mental, physical condition. $1.00 prepaid. Kautch, 122 Miner, Stockton.

Little 6 Locomobile—5-passenger—bargain. W. H. White, 1505 Temple Street, Los Angeles.

RABBITS

For Sale—You will be satisfied with my high grade New Zealand Reds. Pedigree and Utility Stock at reasonable prices. F. R. Caldwell, Broodmoor, San Leandro, California.

Money In Rabbits—We are having a special sale of very fine bucks and does at reduced prices. Write us for particulars. H. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

PHEASANTS

For Sale—Golden Pheasants in full plumage. E. Borchert, Garden Grove Road. Anaheim California

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WEBSTER, WEBSTER & BLUETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents

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Sheep For Sale—Young Merino and Rambouillet ewes; North California Stock. Apply, write or wire ANDREW H. McINNES, wool and sheep broker, 408 Bank of Italy Bldg., 550 Mont. St., San Francisco.

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pruning Young Apricots

How should three year old apricot trees be pruned for best results, long or short cuts?—P. J. M., San Jose.

Cut the second year's growth back to about 18 inches long. When the new shoots start in the spring thin them down to two or three on each limb, but do not take off the fruit spurs. If the trees are past three years old and have been well trained and properly headed back, the next should be a season of building and nothing removed except crossing branches or wild sprouts of unusual growth.

Tomatoes in Orchard

Will tomatoes planted between young orchard trees hurt the trees?—P. J. M., San Jose.

Much depends upon the treatment. If water is not allowed to reach trees when not needed by them, no harm should result. The simple growing of any crop in young orchards is seldom harmful for the first two or three years and is a practice to be commended.

Strawberry Planting

What is the best time to plant strawberries in Butte County? —Subscriber, Durham.

Planting of strawberries is usually done in the winter season or if good vigorous sets are to be had they may even be planted in the fall. The earlier planting secures larger crop the first season but even February planting will give something of a crop during the later months of the following summer.

Water-Proofing Khaki or Duck

Will you please give method for water-proofing khaki or duck. If wax is used is there a particular kind that is best?—Subscriber, Sierra Madre.

Shave very fine paraffin, put in bottle of high grade gasoline, leave in warm place (not hot), shaking occasionally. When positive that you have a saturated solution dip the garment or cloth in it. Saturation is shown when the gasoline refuses to dissolve more of the paraffin.

Pipe for Irrigation

How long will eight inch irrigation pipe with 20 gauge galvanized surface last if placed six inches under the surface of a sandy soil?—Subscriber, Imperial.

It would be impossible to give an idea as to the life of such pipe for it depends on its present condition, how long it has been used as a surface pipe and how well used, and also on the soil as to its corroding. In an alkali soil of course the life would be much shorter than in a sandy soil. Presumably your soil would not contain any great amount of alkali, if it is of a sandy nature, to any great depth. Even if the pipe is new we question the advisability of using it in preference to the regular dipped pipe which will certainly have far longer life under the ground. Our impression is that with present prices of labor it hardly would pay. If, however, the pipe were dipped and carefully driven many years of service might be secured. Regular riveted, dipped, 16 gauge pipe or heavier would perhaps prove the more profitable.

Withered Figs

We have two fig trees five years old on which the figs are not good. All shrivel and turn yellow. The soil has been very dry and I have watered heavily and I thought that may be the trouble. The trees are well loaded.—G. P., Elmhurst.

Your trouble may be due to drought but not to too much water if drainage is good. They may be Smyrna and lack pollenating. Moreover, white figs do not thrive near the coast or in damp climates as do dark and black figs. This year has been a poor one for figs in several sections of the state.

BIG IRRIGATION CONCERN CHANGES NAME

An item of interest to the ranchers, not only of the Pacific Coast but of the entire country, was the recent announcement of the change of name of Kellar-Thomason Company, Los Angeles, to Martin Iron Works. This concern started business in a small way in Covina, California, a number of years ago, but later moved to Los Angeles where they have been manufacturing gates and valves for irrigation purposes—they being the originators of the valve system of irrigating. Several years ago the management of the company was taken over by Geo. C. Martin (from whom the new concern derived its name) and under whose direction it has expanded until the K-T gates and valves are rapidly finding their way to all parts of the civilized world. Irrigators everywhere have come to realize that the old-fashioned, primitive methods are too wasteful and costly for this modern age, and that an efficient up-to-date system like the K-T is absolutely indispensable.

In addition to its complete line of irrigation appliances, the Martin Iron Works is manufacturing concrete pipe machines, concrete mixers, pistons and other machinery, which is extending the scope of its business very materially.

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REDWOOD

TANKS

For Water—Wine—Oil
Stock Feeding Troughs

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For Domestic Water Supply—
Irrigation—Sewers

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"Some Rubber"

We challenge anyone to find a tougher tread. Try a Norwalk and watch your mileage grow.

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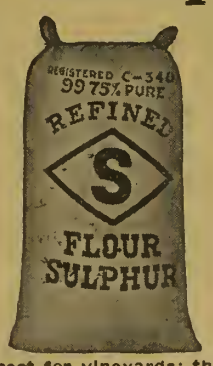
Sulphur



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100 per cent pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR 100 per cent pure. This has increased various crops up to 500 per cent.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc.

And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 DEGREES BE., Sulphur Paste, Nicotine, Blackleaf 40, etc. Fungicides and Insecticides.

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San Francisco Sulphur Co.

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We are equipped to make immediate shipments. Send for "ILLUSTRATED BOOKLET," also booklet "NEW USES FOR SULPHUR", Price-list, and Samples.

Please state for what purpose you use the sulphur, quantity needed, and date of shipment preferred. Telephone Kearny 871.

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The Ghirardelli label on the Ghirardelli can is *more* than a scrap of paper. It is a *dependable* assurance of Ghirardelli quality. It carries with it the *certainty* that you are getting the chocolate of highest purity and nutriment.

Always dependable —never disappoints!

At the store where you do your trading —in ½ lb., 1 lb. and 3 lb. cans.

Ghirardelli's Ground Chocolate is put up *only* in cans—to safeguard your health and to protect you against inferior substitutes. Look for the label. Then you will be doubly sure that you are getting the *original* Ghirardelli's Ground Chocolate.

"Say Gear-ar-delly"

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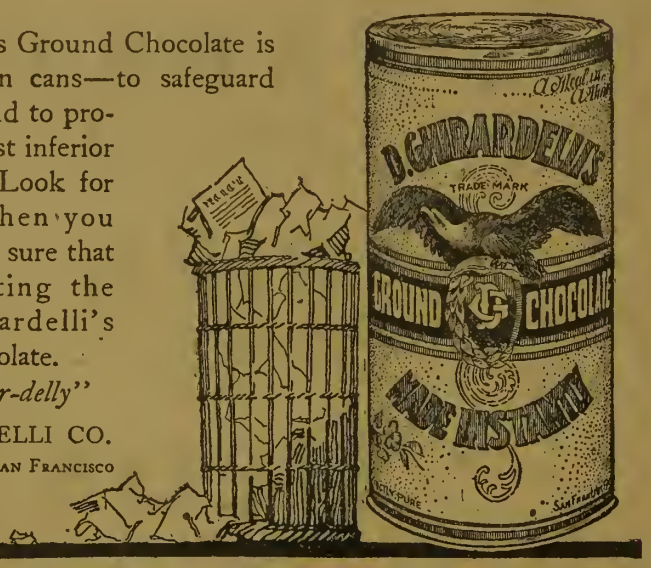

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We recommend Perfection Oil Heaters

STANDARD OIL COMPANY (California)

California Cultivator

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Household Department

THE DARK PATH

When people lose their temper
It doesn't always stay
In just the place they lose it,
But travels miles away;
And when they find and bind it
It may be it has done
A mischief never to be healed
Unto the farther sun.

When people lose their temper
It runs and rages far.
It strikes at friends as well as foes,
Not caring who they are;
And when its cruel force is spent,
Its words and deeds go on
Down many ways, through many days
Unreckoned and unknown.

When people lose their temper
It still may come again,
After the past is forgotten,
Bringing a load of pain.
That never can be lifted,
That breaks the heart with woe—
Oh, far the road and ill the path
Where pride and anger go.

—Exchange.

TO THE MEADOW LARK

Hail to thee, my feathered friend,
Little sweetheart of the road,
Joy is in thy heart today,
Happiness that may not end.

Is it from the blue of skies,
Or the water-lilies' laughter,
Or the magic music after,
In the woods that never dies?

Is it from the violets' voice
Or the sweetness of the rose
Or the kiss the pansy throws,
In the which you now rejoice?

Is it in the orchard fruited,
Pear, and peach, and apple clinging,
Where the grape its wine is bringing
And the mocking-bird has fluted?

Little brother of the field,
Who can tell from whence the joy,
Pure and sweet without alloy,
Not a fount of rapture sealed!

I have heard thee in the rain
When no single cloud was rifted,
Yet thy joyous song was lifted,
Waiting for the sun again.

I salute thee, meadow-lark,
Little brother of the road,
Thou hast helped me bear the load,
Singing in the dawn and dark.

—W. L. Childress.

RALPH MASON PLAYS THE GAME

(Continued from Page 395 last week.)

Why should the mighty Gibson want to tackle him, the weakest little lamb of the street? Kate! Kate! that was the only reason big enough to accouut for such a contemptible trick. He recalled that last Masonic ball when she gave him half her dances, although she was Gibsons' guest, and that glare of defiance the fellow had thrown at him as he led her away to his luxurious car. He was sailing high, daring anything, and hoping everything then, but the crash came suddenly bringing him to earth and sending him limping away in shame and confusion.

O! if the gods would only favor his star now! Again he was off in his reveries and the iron greys, thinking of dinner time, turned around and brought him back again to the bustling center. "Hackett's my best bet," he muttered suddenly waking up and jumping out at Packard's office, and after taking their receipt for the fertilizer he closed a deal for 500 barrels at one thirty-five, immediate delivery.

Before nightfall he had concluded contracts for three-fourths of his "Mountains' at the same figure for immediate delivery, and 25 cents less, future, the best offer he could get. There was a slight taint of suspicion already in the air, and the buyers had commercialized it in good Yankee fashion.

Seven days afterwards, Gibson received a wire from a Providence broker, refusing delivery on two carloads and the report spread like the shot that was heard around the world.

And in less time than Hackett's 20 days, King Rot arrived with his billions and trillions of scaly, scabby, slimy minions, and there was uproar everywhere and the devil to pay.

* * * *

"He said I'd be down begging him to take them at a dollar even within ten days!" Ralph Mason was bending over the great bin down in his subway cellar on the side of Greysville Hill, the great rolling fields above wrapped in their garments of beautiful white and the biting blast keeping up its everlasting fret. A buyer had just left making him what he represented as a tempting offer, and he was wondering if he had acted wisely in refusing to trade.

"But Hackett beats it everlastingly into me to hang on. 'When you want to sell the worst that's the time to buckle up,' he says. I wonder, is he absolutely on the square? I wonder why he takes such an extraordinary interest in me?"

For ten weeks the potato business had been absolutely paralyzed but the little metropolis was just as gay as Paris in peace times, throwing itself into all kinds of diversions with its characteristic abandon; dancing, bridge whist, revival services, fraternal society spreads, church suppers, amateur dramatics, horse races and the everlasting movies.

Ralph had received flattering social attention and ventured out again, enjoying the little prestige of his early selling coup. Of course he had met her a number of times although scrupulously avoiding presumption, and it was while swinging around like a fairy to the ever delightful Blue Danube at the hospital benefit, that she lilted the rejoinder which literally swept him off his feet and almost resulted in catastrophe: "You talk about Aroostook girls, Mr. Mason, as if they were the champion freaks, sort of cross between the Amazon and Aphrodite, but they're very much like other girls all the same, just as apt to make fools of themselves for men they like as—as Manhattan girls."

How many times in the weary days of strain and worry up on the lonely hillside had the memory of that thrilling moment come to his relief as first aid against the blue devils, and once again as he stood brooding over the great bin the subtle inspiration shot across his mobile face.

"What would she"—

The interesting query was arrested by the sound of sleigh bells breaking the still air with their merry music on the bend of the hill about half a mile below. He knew there was only one colt on Greysville hills that could take the rise at that sharp clip, and taking out his watch he timed it to the barn in just seventy-two seconds.

Two minutes later Tom Hackett came thundering through the subway door.

"Good boy, Ralph," he sang out, gripping him by the hand and at the same time making a critical survey of the great bin of cobblers. "You've got the stuff all right and hung on to it like a thoroughbred. Now we'll see what we will see.

"Johnson here this morning you say offered one fifteen," he chuckled, "and you told him he'd have to raise it thirty-five? That's the talkin' boy. I knew I could trust you all right without a fire alarm. But you wont' think it presumtuous if I put you on to a trick that's worth two of that—yes two of it to a penny?"

Mason looked at him with a blank stare, arresting the match he was about to strike and holding it up in dumb show.

"I happen to know, Ralph, of a certain gentleman who has a hurry order for 10,000 barrels of the tip top Aroostook Cobbler seeds. He's going to get a fine price for them and for certain reasons I'm going to see that he whacks up on the profit with you.

"O, don't imagine it is any accommodation on my part, sonny," he laughed. "I'm going to have more fun out of it than I had ridin' the tickler at Coney Island. It won't cost me a cent and it will do Dolly V. a whole lot of good. The next time we speed up on the pond I want her to lap the field instead of winning by 200 yards.

"And your part of the transaction, Ralph," he added dropping his voice and seizing him by the shoulders, "is to dose up everlastingly on nerve tonic, for by Kitty Sullivan's black night cap you've got to set the price at three dollars and stick to it till the crack of doom."

As Hackett let go Mason stumbled backward, falling against the cellar upright, and broke into a semi-hysterical laugh. "Three dollars and fifteen hundred barrels!" he gasped. "For God's sake don't be kidding me, Hackett. Why don't you tell me to ask ten?"

"You bet your moccasins I would, boy," puffing as evenly on his cigar as if talking weather, "but if we can't get the porterhouse we'll take the hamburg. Three dollars is the price I've

Somebody asks "What is tannin?"

Tannin is what they tan leather with—pulls it together, makes it tough.

There's a lot of tannin in oak, hemlock—and in cheap coarse tea, but hardly a taste of tannin in fine tea unless you boil it.

Now do you want tannin-flavor or tea-flavor? Do you want to put tannin or tea into your stomach?

Schilling Tea is the fine practical tea with the real tea-flavor—the most economical beverage next to water.

There are four flavors of Schilling Tea—Japan, Ceylon-India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

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One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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Headquarters for **IRRIGATION** Supplies
Pumps, Engines, Sprayers, Hoists Etc.
Catalog FREE on Request
Smith-Booth-Usher Co.
Los Angeles.

set and if you've got the sand in you, it's just as good as in your pocket.

"And by the way," he added with a droll grin, "I heard one of our little belles remark a few days ago that she didn't care a fig about the dough if she could have the sand."

"You mean, Hackett, that if Johnson should return and offer me two dollars I should turn it down? That would clean up every dollar of my debt and leave me fifteen hundred to the good. You don't really mean it do you?" The wild gleam in his eyes, the trembling lips and the subtle break in his voice touched the big fellow but he did not betray it.

"O, I'm not telling you what you must do, Ralph; you're your own man and will, of course, do as you please, but if I were you I would not feel obliged to give Johnson's boss a present of fifteen hundred. I'd keep it myself."

Before nightfall Johnson returned ready to take Mason up on his dollar fifty offer of the morning and after trying in vain to get him interested in dollar sixty, sixty-five, seventy and seventy-five, went off in a towering rage declaring that he would find some way mighty quick to bust this corner in cobblers.

When the trader touched the dollar seventy-five, watching his game like a panther stalking a rabbit, Mason had started just a trifle but it was only to flip the ash off his cigar and counter: "Nothing doing, Johnson," as cool as Hackett himself, but when the jingle of the sleigh bells died off in the distance he jumped to his feet and breaking into 'Beautiful Lady" like an operatic tenor, started a series of whirling and kicking antics that would have stunted a Russian dancer himself. Coming to a sharp halt against the great bin he threw himself down among the cobblers with the mad abandon of the gold crazed prospector who has suddenly unearthed five hundred dollar dirt. There they lay before him, in tens and hundreds and thousands, in bunches and hills and mountains, glinting and grinning at each other more like Alabama coons than Irish cobblers, every one of the half million seeming to know that something was up and all on the qui vive watching out and ready for the curtain. All through the evening and all through the night he could see them there, winking at each other, giggling and tumbling over each other, in one hilarious mix-up, in one mad frolic, in one grand carnival of unrestrained and endless jollification.

* * * *

Three days later a sleigh of quality behind a jet beauty, going at a two-thirty clip halted suddenly on the edge of the main street jam and the Apollo in furs at the reins took a flying leap into an empty jigger starting the other way.

"Congratulate me Hackett," he shouted, seizing the big fellow's hands and almost forcing a blush. "Congratulate me! I've seen her, and she was waiting for me and just wondering why I was so cool."

"Seen her, you loon!" Hackett grunted, returning the embrace with compound interest. "I thought it was him you were after. How about that deal?"

"Deal? O, the devil, Hackett, I put that through all right and discovered that Gibson was the bear in the trap, and if I live to be 200 I shall never be out of your debt, but it wasn't the money I ever cared a button about, it was a little girl called Kate Langley up on the north road that was my real game all the time. I want you to meet her right away, Hackett. With all your boasting I believe she's the finest thing that Aroostook ever produced."

A wonderful smile blossoming out like a bunch of eidelweiss on an Alpine cliff, startled the young man as he paused and looked earnestly into the big rugged face, but an Aroostook Brahman was not to be caught as easily as that. Digging a monstrous plug of tobacco out of his pocket and taking the lion's bite the big fellow tipped his thumb toward the New York Special puffing on the tracks, as he drawled out:

"I thought you hailed from yonder, Sonny, where everybody knows pumpkins? I wonder you haven't ever heard it remarked 'two can play at that game.' Your little witch, Ralph, has been calling me 'Uncle' for the last 20 years."

Because it has—

1. Doors and splasher back beautifully paneled in *White* or *Blue Enamel*, if desired.
2. All-copper *hot water reservoir;* patented shifting lever controls water temperature.
3. Body of Charcoal Iron; *resists rust* and lasts 3 times longer than Steel.
4. Flues lined with *Asbestos Board*, ¼ inch thick; prevents loss of heat and saves fuel.
5. Air-tight oven; *all parts riveted* together, assures perfect baking.
6. *Large warming closets:* roomy and convenient, with drop doors.
7. No springs on oven door; it is supported with strong, *durable sliding rack*, and holds any weight placed on it.
8. Unbreakable malleable iron; permits rivet tight joints; *saves fuel* and repair expense.
9. First joint of pipe double weight; pipe collar double strength. Front of flue at top and bottom of oven covered with *indestructible malleable iron.* Strongest where others are weakest.
10. Open end ash pan; like shovel. *removes ashes easily*, and cleanly. Ash cup catches ashes that otherwise fall on floor.
11. Cooking top burnished dark blue, *requires no polish.*
12. *Heavy nickel trimmings;* smooth as glass; stay bright, easy to keep clean

There are many other Majestic superiorities. No other range gives you such value for your money.

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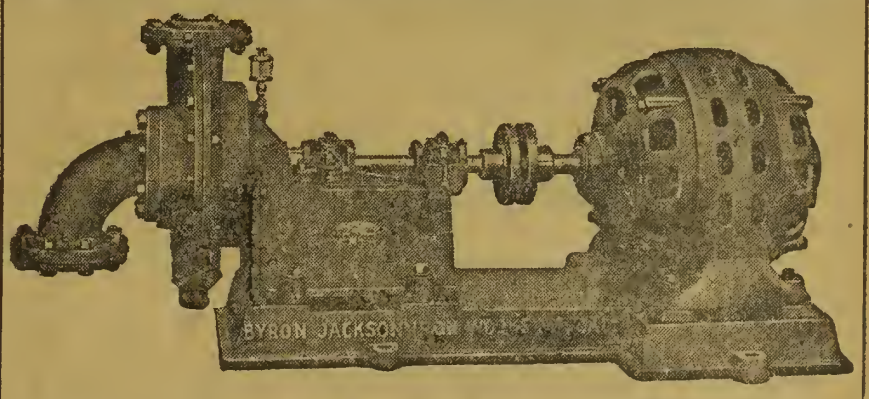

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Egyptian Corn

You can use both hands and cut twice as much in a day with the

David Heading Knife

as with any other instrument. You cut off the stalk and hold the head with the same hand—and you keep both hands at work, cutting as fast as you can open and shut your fingers. If your dealer cannot supply you send direct to the manufacturer.

Pair (right and left) $2.50, postpaid.

R. L. DAVID Dept. D. San Jose, Calif.

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WAGNER'S IMPROVED

Plant Now Growers making $1000 and over per acre annually. Splendid results in six months. Special prices for immediate planting. Also berries and small fruit, etc. Write to the originator, J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, Calif.

STRAWBERRY PLANTS

The kind that produce results on the Western Coast. From Santa Cruz County, California:

"Your shipment of plants came thru in about one week's time, and in fine shape."—H. H. From Francis, Nev.:

"The strawberry plants that you shipped me arrived in good condition, and are the nicest plants that I ever saw."—J. B. C.

Good Plants and Quick Service.

V. R. ALLEN, Wholesale and Retail Seaford, Delaware

Los Angeles Markets

Los Angeles, September 24, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 66 lb.; prices to retail merchants in 1-lb. squares, 62@63.

Dairy Exchange prices last week on extras:

Sept.	17	18	19	20	22	23
'19	65	66	66	..	66	66

CHEESE

Brokers' prices:

California, fresh, lb., 36; price to retail merchants, 36@37.

EGGS

Fresh extras, Produce Exchange closing price, 63 dozen, price to retail merchants 67 dozen; case count, Produce Exchange closing price 58 dozen; price to retail merchants, 46 dozen; pullets, Produce Exchange closing price, 49 dozen; price to retail merchants 46; pewee pullets, 43.

Dairy Exchange prices last week on extras:

Sept.	17	18	19	20	22	23
'19	59	60	60	..	63	63

POULTRY

Prices to producers: Hens, lt. 22 heavy, 33; colored over 4 lbs., 35; broilers, 38; fryers, 32; roasters, 32; old roosters, 19; capons, 42; ducks, old, 23; ducklings, 23; ducklings Pekins, 3½ up, 26; geese, 25; turkeys, 34@42; squabs, 45.

Belgian hares, live, 15.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 16.00; 150 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.50; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 23, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market unsettled. New stock, Stockton Burbanks, resorted, 3.00@3.10; others, best, 2.75@2.85; poorer, 2.25@2.50.

Sweets, lb., 2½@3.

Onions: Demand and movement moderate. Homegrown and Stockton White Globes, 90@1.00 per lug box; 2.75@3.00 per cwt. Yellow varieties, 2.75@3.25 cwt.; lug boxes 85@1.00.

Garlic: Local, per sack lots, 30@35.

VEGETABLES

These are the actual prices obtained September 23, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 6½@9; Limas, 6½@8½.

Carrots, doz., 30@40.

Cauliflower: Local, per doz., 1.25@1.35, field crates $2.00.

Cucumbers: Local lug, 80@1.00; pickles,

Celery: Local, best, 1.10@1.15 dozen bunches; poorer, 70@75; crates, best, 5.00@5.50; poorer, 4.00@4.25.

Corn: Roasting ears, 60@70 per lug of

Eggplant, best, lb., 2@3½.

Peppers: Bell, lug, 35@45; Chili, 35@45; Pimientos, 5@7.

Lettuce, local, cr., best, 1.50@2.00.

Peas, local, lb., 10@12.

Tomatoes: Lug, ripe, 60@75; poorer, 40@50.

Turnips, doz., 30@45.

FRUITS

These are the actual prices obtained September 23, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California Gravensteins, packed, 2.25@3.00; crab apples, per lug box, 2.25@2.50; Jonathans, packed 3.00@3.40; Bellefleurs, packed, 1.50@1.60; King Davids, packed, 2.75@3.00; Alexanders, pk., 2.25@2.50.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews, 65@85; Paul Rose, best pack standard, $1.35@1.50; Ponies, 1.00@1.25; loose pack, 75@95.

Grapes: Demand and movement moderate. Local and northern Tokays, 6@8 lb. Muscats, 4½@5½; Malagas, 5@7; Hamburgs, 3½@4½; Thompson Seedless, 4½@5½.

Nectarines, lb., best, 6@7; poorer, 5@6.

Peaches: Demand and movement moderate. Local, various varieties, 5@8 lb.

Pears: Northern Bartletts, No. 1, 7@9 lb.; No. 2, 5@6 lb.; lug boxes, 1.75@2.00; packed, 3.25@3.50.

Pineapples, lb., 12@13.

Plums: Demand and movement slow. Hungarians, best, 5@5½; Grand Dukes, 6@7 lb.

Pomegranates, per lb. Valley stock, 7@8.

Watermelons: Demand and movement slow, quality and condition generally good. Local Chileans and Klondikes, large 1@2 lb., medium 1, small ½ lb.

Lemons: Fancy packed, 5.00@6.25, local pack, 4.00@4.50; loose, some tree ripe, 3.50@4.50.

Oranges: Valencias, medium fancy, 4.75@5.50; local pack, 2.50@3.50.

Grapefruit: Local fancy, 4.00@5.00 bx.; poorer, 2.50 up.

HONEY

Demand and movement good, good inquiry, market firm. Carloads f. o. b. usual terms: White Orange Blossom, mostly 20; White Sage 20; Extra Light Amber Sage 18½@19; Light Amber Sage 17½; Light Amber Alfalfa, 15@16 lb. Beeswax: l. c. l. sales, mostly 40 lb.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat .....19.00@21.00
Barley .....16.00@21.00
Alfalfa .....18.00@23.00
Wheat or Barley straw .....9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, September 24:

Alfalfa Meal, per ton $35.
Alfalfa Molasses, per ton $35.00.
Eastern Kafir, 2.52½@2.57½.
Oats Red, Rustproof, 2.83¾.
Beet Pulp, per ton, $46.
Eastern Milo, 2.47.
Corn No. 1 Yellow, 3.27½.

San Francisco Markets

San Francisco, September 23, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 63½
Firsts .....Nominal

Prices extras last week and year ago:

Sept.	16	17	18	19	20	22
'19	63	64	64	64½	64½	63½
'18	58	58½	..	..	60	..

Rcts. wk. ending September 22, 1581 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats 38
Ore. Triplets 33
Jack, full cream .....27@28

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 68½
Firsts .....Nominal
Extra Pullets 62

Prices extras last week and year ago:

Sept.	16	17	18	19	20	22
'19	67	68	68	67½	66½	68½
'18	61½	61	..	..	58½	..

Rcts. wk. ending September 22, 182,730 dozen.

POULTRY

Hens, W. Leghorns, 27@31; colored, 35@36; roosters, young 35@36; old, 19@21; broilers, 30@34; fryers, 31@32; squabs, 2.50@4.00 dozen; ducks, 20@26; geese, 24@26; broiler turkeys, 40@47.

Belgian hares, live, 16@17; Jackrabbits, 1.50@3.00 doz.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5.

Calves: Light weight, 12@12½; medium, 11@11½; heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 8½@9; ewes, 6½@7.

Hogs—Hard, grain-fed, 100 to 250 lbs., 16, do, 250 to 300 lbs., 15½; do, 300 to 400, 14½.

Moran & Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle—Good grass steers, 1000 to 1200 lbs. and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs—Top packer hogs, hard and well finished, 175 to 250 lbs., 15; 150 to 175 lbs., 14; 250 to 300 lbs., 14; over 300 pounds, 14; under 150 lbs., 14. Usual dock and price discount for other weights and kinds.

POTATOES

Potatoes: Per 100 lbs.: River, choice 2.00@2.15; fancy 2.00@2.40; sweet, lb., 4¾@5.

ONIONS

Onions: Onions, fancy, 2.50; choice, 2.00@2.25; Reds, 2.25; Whites, 2.25; Garlic, 20@21.

VEGETABLES

Wholesale selling price:

Beans: String, 3@4½; Limas, 4@5.
Carrots, per sack, 1.00@1.25.
Cauliflower, 75@80.
Cabbage, doz., 40@55.
Celery, doz., 25@30.
Cucumbers: Large box, 75@1.00. Pickling, lb., No. 2 grade, 3 lb.; No. 3 grade 1½.
Corn, doz., 10@20; sack, 1.25@2.00.
Eggplant, southern, fy., 65@75.
Lettuce, doz., 25@35.
Peppers, Bell, lb., 75@1.00; Chili, 40.
Peas, lb., 6@7½.
Pumpkins, per sack, 75.
Radish, 7@9 doz. bunches.
Tomatoes: Sacramento River, 75@1.25. Bay, 75@1.25.
Squash: Summer, cr., 75@90; Italian, 75@90.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 7.00@7.25; choice, 6.00@6.50; standards, 4.00@4.50; 5.00@6.00; choice, 4.00@5.00; oranges, 4.00@5.25.

FRESH FRUITS

Wholesale selling price:

Apples: New crab, 1.20@1.50 for 20-lb. box; Gravensteins, 2.25@2.75 box; ch., 1.50@2.00; Alexanders, 1.75@2.25 box; Greenings, 1.50@2.00; Fall Pippins, 1.50@1.75; Bellefleurs, 1.50@1.75; Jonathans, 2.00@2.50; Winter Bananas, 2.25@2.50.

Bananas, 7½@8.

Blackberries: So., 8.00@10.00.

Cantaloupes: per crate, 1.00@1.50; pony crate, 75@1.00; flats, 50@60; Honey Dew and Casabas, lb., 1½.

Figs, double layer: 1.25@2.00 bx.; Brunswick, 75@1.00, single layer.

Grapes: Malagas, 1.25@1.75; Los Angeles Rose Peru, 75@1.00; Muscat, 1.25@1.75; Tokays, 1.25@1.75; Thompson Seedless, 1.00@1.25.

Huckleberries, lb., 15@16½.
Loganberries, ch., 8.00@12.00.
Nectarines, red and white., cr., 1.00@1.25; bx., 1.25@1.50.
Peaches: Sacramento, 85@1.25 per crate; 1.25@2.00 per box; clings, 75@1.50 per box; Elberta, 1.00@2.00, according to quality.
Pears: No. 1, 3.00@3.50; No. 2, 1.00@2.00.
Plums: Cherry, 85@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00@1.25.
Prunes: Fancy American blues, 2.50@3.00; choice, 1.00@1.80; according to size and weight.
Pineapples, doz., 2.00@5.00.
Pomegranates, 1.00 per 20 lb. box.
Quinces, bx., 1.00@1.50.
Raspberries: Ch., 14.00@16.00.
Strawberries: Ch., 12.00@15.00.
Watermelons, lb., 2.

HONEY

Demand improving slightly, market firm. Prices paid to producers: Extracted Light Amber Alfalfa, 14@15½; Light Amber Sage, 18½@19½.

BEANS, PEAS

Beans: Per cental: Small White, 8.25@8.50; Large White, 7.50; Lima, 12.50@13.00; Pink, 7.00@7.25; Cranberry, 7.00@7.25; Blackeye, 6.00@6.50; California Bayos, 7.50@8.00; Mexican Red, 6.00@6.50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 6.25@6.50, in bond.
Dried Peas: Old crop, green, lb., 7½@7¾.

HOPS

1919 contracts per lb. around 55.

RICE

California: Fy., 10.75; ch., 10.50; flour, 5.25.
These quotations are per 100 lbs. gross weight for double bags of either 100 lbs. or 224 lbs. gross.

1919 PRUNE, APRICOT AND PEACH PRICES

Prune prices announced by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.
Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1, 1920, are as follows:
Standard yellows, 14¾c; Muirs, 15c.
Choice yellows, 15½c; Muirs, 15½c.
Fancy yellows, 16½c; Muirs, 17½c.
Extra fancy yellows, 17¾c; Muirs, 18¾c.
Slabs, yellows, 14½c.
For "practically peeled" add 1½c per pound (any grade).
Prices above are all bulk basis.
For packing in 50-pound or 25 kilo boxes add 1 cent per pound.
25-pound or 12½ kilo boxes, add 1¼c per pound.
10-pound boxes, add 2c per pound.
Blue ribbon peaches packed 2-pound carons, 12 per case, $10 per case.
Blue ribbon peaches packed 2-pound cartons, 24 per case, $10 per case.
Bakers' special, "practically peeled," 16¾c per pound, bulk basis.

GRAIN AND FEEDS

Oats: Red feed, 2.55@2.90; black, 3.00@3.10 per cental.
Corn: California yellow, 3.65@3.75 cwt., Egyptian 3.15@3.25; Milo Maize, 2.85@2.95.
Rye, 3.15@3.30.
Barley, feed, 2.95@3.00.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 1-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.09	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00; mill run, 42.00@43.00; Rolled barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of September 20, Scott, Magner & Miller says:
Receipts past week 2893 tons. Receipts by rail have been extremely small, cars being scarce in most of the districts.
Wheat hay and Red Oat hay of a fancy variety have been scarce and prices on same well maintained. The market in this city is somewhat slow, most of the large feeders having already laid in their winter's supplies. There is no demand for straw although large lots are being offered.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the Hay Market—for prices to consumer, charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay	
(light 5-wire bales)	17.50@19.00
No. 1 Wheat or Wheat and Oat Hay	15.00@18.00
No. 2 Wheat or Wheat and Oat Hay	12.00@15.00
Choice Tame Oat Hay	15.00@18.00
Other Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@14.00
Barley Hay	12.00@16.00
Alfalfa Hay	17.00@22.00
Stock Hay	8.00@12.00
No. 1 Barley Straw, bale	50@80

Citrus Markets

Los Angeles, September 24, 1919.
All citrus fruit is in good demand. Valencias are receiving a better demand, partly because of deciduous and small fruits grown near most Eastern markets are decreasing. Recent shipment has been prevented by shortage of cars. Many sales were made permitting close to $5.00 f. o. b. California price.
The market on California lemons is good, and every offering is quickly taken up though no buyer is anticipating future wants but buying only as needed. There are around 50,000 and 60,000 boxes of foreigns in sight.

Shipment

Shipments of citrus fruits to date since November 1, 1918; Southern California: Oranges, 32,241 cars, lemons 9085, total 41,326. To same date last season; oranges 13,708, lemons 5490, total 19,198. Central California this season: Oranges, 4427, lemons 354, total 4781. To same date last season; oranges, 2539, lemons 115, total 2654. Northern California; oranges, 244, lemons 2, total 246. Last year same date; oranges, 203.

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All the felt that goes into Malthoid and Ru-ber-oid Roofings is manufactured in our own mill. And because we are large consumers, we have the pick of the rag market. From this we carefully select the rags we need to make quality felt.

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Surelay is ready to solve this question for you—just as it has for thousands of other successful poultrymen. Then, why waste time and money and energy experimenting with hand-mixed feeds and mashes when Surelay puts the whole secret in the hollow of your hand?

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And don't forget—Surelay keeps your flock in fine condition all the while. It's a perfect balanced ration—there's nothing in Surelay to "throw your hens off their feed." For Surelay is *always* uniform, *always* the same, *always* dependable! You will find a guaranteed analysis of Surelay printed on the back of every sack; and what's *on* the sack is *in* the sack—and that's what makes the eggs.

It has been proven time and again that cheap feeds lessen the profits of every hen in the flock. Thus, a uniform, high-grade feed like Surelay is *always economical*—and especially when prices reach the level they are today.

Our booklet, "Makes Hens Happy," takes up this feeding question in detail. It is full of practical information and money-saving suggestions. It has served as a guide-post to success for many a poultryman; perhaps it will be of help to you. This booklet is yours for the asking—simply fill in the coupon and mail *today!*

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OCT 6 1919

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — October 4, 1919 — No. 14

Peruvian Alfalfa, Wonder Plant of the Southwest

THE dairyman wants the greatest amount of feed from the least number of acres. California acres are too high in price to allow any to go idle or to produce other than the maximum. The best crop of its kind is therefore necessary. In hay production there is too long a record as wealth producer to give other than first place to alfalfa. There are many varieties which have been given a thorough test in California but as indicated by present day acreage the old original introduction from Chili still holds place of honor. Many new varieties have been tested out, perhaps more correctly, are being tested out, and the favorite of these new varieties being tested today is Hairy Peruvian. This has been given fuller test in Arizona than it has in California, and the Cultivator has asked its Arizona contributor, Mr. Bemis, to give his estimate of its worth. He writes:

It is true that the general appearance of the Hairy Peruvian alfalfa leads to the assumption that it is somewhat coarser than the common, but actual results in feeding do not seem to indicate that there is any more waste in feeding the Hairy Peruvian than the other.

The advantage of the Hairy Peruvian is that it yields from one to two tons to the acre more than the common. This heavier yield is not due altogether to the coarser, ranker growth, but is to a considerable extent due to the earlier growth in the spring and later growth in the fall.

Hairy Peruvian alfalfa has been grown in the Yuma Valley for a number of years and within the past two or three years has come into popularity in the Salt River Valley. Practically all new seeding in the Salt River Valley this past season was Hairy Peruvian. So far no seed is being grown to any extent in the Salt River Valley, but a considerable amount is raised in the Yuma Valley.

From Superintendent C. J. Woods of the Salt River Valley experiment station at Mesa I have the following records of yields from a sixteen acre field of Hairy Peruvian so far this season:

	Pounds
First cutting, April 16	51,845
Second cutting, May 15	50,500
Third cutting, June 25	44,000
Fourth cutting, July 26	42,137
	188,482

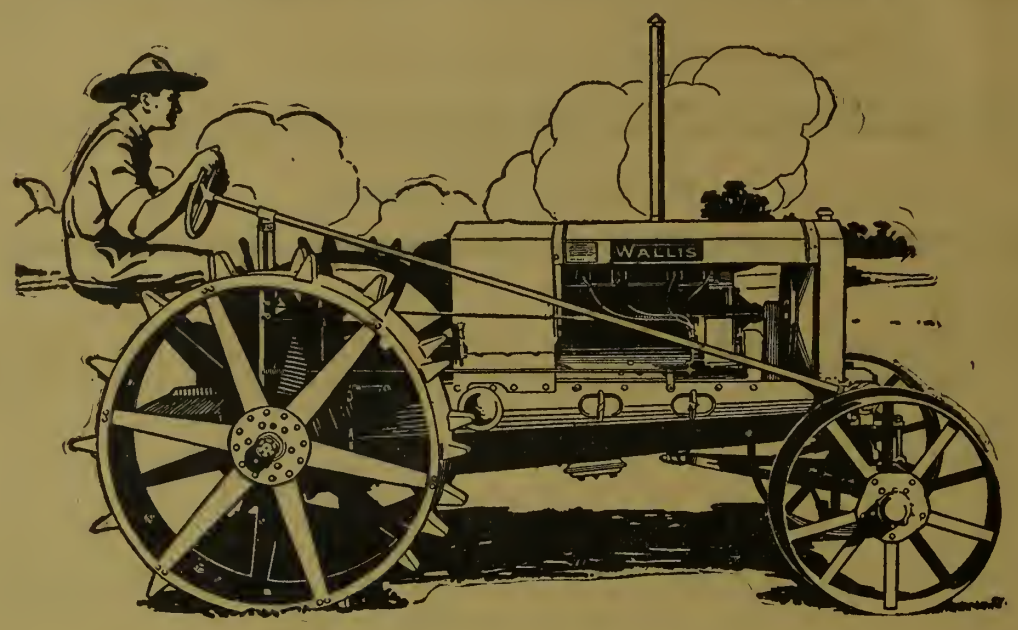
Making a total of 94¼ tons for the sixteen acres. This lacks 1¾ tons of being six tons per acre for the four cuttings. There will be a light cutting early in September and a heavy cutting in October with a fair cutting in November or some pasturage.

Certainly a wonder crop which makes for greater wealth of the great Southwest.

This field was seeded in November, 1917. Several varieties of alfalfa are being tried out in an experimental way on small plots. One variety which is known at the station as French alfalfa, in practically all tests has so far outyielded all others, including the Hairy Peruvian. No seed of this is yet available for distribution.

WALLIS

America's Foremost Tractor



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THE Wallis Tractor was designed by Wallis engineers 12 years ago. From the date of its first introduction it enjoyed unequaled popularity. Its fame has spread rapidly until today it is known everywhere as "America's Foremost Tractor."

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As an illustration, the Wallis frame is made of 3/16-inch, steel, boiler plate rolled into "U" shape. This is the lightest, yet strongest, construction in mechanics. This design does away with all beams, braces and counter-braces and therefore eliminates a lot of unnecessary dead weight.

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Friction is reduced to an absolute minimum by the use of Hyatt and Timken bearings. Gears are of heat-treated, cut steel, avoiding costly repair bills.

Abundant Power

The Wallis has, therefore, a big reserve of power to meet difficult conditions and emergency jobs. Every farmer realizes the necessity and advantage of a tractor which can furnish plenty of power for all kinds of field and belt work.

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California Cultivator

Vol. LIII, No. 14 | Los Angeles, October 4, 1919 | One Dollar Yearly

Relation of Soil Moisture to Orchard Irrigation

Address Before State Fruit Growers' Convention, Riverside, by Samuel Fortier, Chief of Irrigation Division, U. S. Bureau of Roads

ORCHARD irrigation covers a broad scope. It may be said to begin with the precipitation which falls in the form of rain or snow and to end with the mature fruit on the tree. It embraces such main features as water supply, irrigation works, distributary systems, water delivery, application of water, water-holding capacity of soils, soil moisture and its distribution, besides a large number of closely related subjects.

Orchard irrigation is likewise the result of a combination of efforts on the part of men who differ widely in their training and experience as well as in their purposes and viewpoints. Many of the orchard districts of the far-West were started by promoters. Then followed financiers, managers, engineers, and real estate agents. By the time farmers started to plant trees, conditions as regards organization, management, water deliveries, and the quantity of water allowed per acre were more or less definitely fixed. It often happened, too, that the work of one set of men was not properly correlated to that of another set, so that misfits were the rule rather than the exception. While the real purpose of orchard irrigation is to grow better and larger yields of fruit, promoters and others frequently side-tracked the real purpose in order to attain some specific object which promised greater personal returns.

Adequate Water Supply

Before proceeding to a discussion of soil moisture, it might be well to refer briefly to the necessity of an adequate water supply in order to insure sufficient soil moisture not only to maintain orchard trees in a vigorous condition, but also to grow cover crops between the rows.

The history of the water supply for a typical orchard tract usually dates back to the time when a company, district, or other form of irrigation enterprise is formed to provide water for a certain acreage of barren or low producing land.

Amount per Acre

The average amount of water which can be used per acre as determined when the project is first organized and built is likely to continue for long periods of time. Thus, when the Gage canal, Riverside, was built in 1887, the duty of water was fixed at one miners inch for five acres, and for 31 years water deliveries have been based on this duty. At present the formation of a number of irrigation districts is under way in California, and in most of these, in determining the average amount of water which can be used on each acre of the newly organized enterprise, it is often necessary to curtail the use in order to make the undertaking appear to be feasible. This is especially true in localities where water is scarce and valuable. Assuming by way of an example that 30,000 acre feet of water is available for a proposed project and that this supply is apportioned on the basis of 2½ acre feet per acre per annum, it would only cover 12,000 acres and the construction cost might be prohibitive whereas if the basis of apportionment could be made 1¼ acre feet per acre, an area of 24,000 acres would be served with the same amount of water and the construction cost might thus be kept within economical limits.

Commission's Findings

The State Engineer, as you know, has to pass on this and other features of new irrigation districts, and as our bureau is cooperating with the office of the State Engineer, members of our force are frequently called upon to investigate and report on such matters. Mr. C. E. Tait, our resident representative in Southern California, has devoted considerable time during the past two years to proposed districts in Southern California. A commission of three, consisting of the State Engineer, J. A. Sourwine and C. E. Tait, has recently recommended in connection with the duty of water for Victor Valley on the Mojave River, that only those crops be grown on the greater part of the land which require a relatively small amount of water, in order that the water available may be made to serve the maximum area of land, and the acre cost of the works correspondingly reduced to the minimum in order to make the project financially feasible. In passing on this proposed district, the Commission found itself between the devil and the sea. If it recommended an adequate water supply for all crops adapted to that locality, including alfalfa, the cost would be prohibitive and no districts could be formed. If it reduced the estimated seasonal amount of water which could be used, below a certain quantity, the crops were liable to suffer, and so it adopted the only middle course possible by recommending the planting of such crops as apples and pears, which require a small amount of water.

Water is Life

In attempting to fix the duty of water for proposed irrigation districts in San Diego County, similar difficulties have arisen. Some of the promoters of these districts seem to think 8/10 of an acre foot per acre, or what would be equivalent to one miners inch flowing throughout the year for 14½ acres would be sufficient. Their hydraulic engineer cites cases where one miners inch served 24 acres of orchard. In arriving at a decision where differences of opinion exist, it is necessary to consider the welfare of the grower of fruit as well as the vendor of land and water.

Water is to the orchard what blood is to the human body. Both are conveyors of food. So essential is water to the life and vigor of the fruit tree that an adequate supply should be guaranteed or procurable before a tree is planted. It is said that half a loaf is better than no bread, but this adage does not apply to a water supply for fruit trees. There is nothing gained in merely keeping trees alive. In order to be profitable, trees must have sufficient water and food, coupled with other favorable conditions, to resist disease and to produce a fair crop of marketable fruit.

Cover Crops

This brings up the question of cover crops. If cover crops are necessary, all new enterprises should be provided with water not only for the growth of the trees but also with some surplus to be used in growing leguminous crops for plant food.

It requires from 750 to 1200 pounds of water to produce one pound of air-dried alfalfa, and other leguminous crops will require nearly as much. Accordingly, in localities where the annual rainfall is low, sole dependence cannot be placed on the winter rains to furnish moisture for cover crops. Part of the soil moisture must come from the irrigation supply, but as I have intimated, horticulturists, irrigation engineers and others are not in agreement as to the proper duty of water for orchards, largely because of the amount, if any, that should be allowed for crops grown between tree rows.

Practical Observations

In the eighties, when I was assistant engineer of the Denver Water Company, I had occasion to do some work at Greeley, Colorado. For 12 or more years prior to that time the farmers of the old Greeley Colony had been growing grain under irrigation, year after year. In time this crop became unprofitable, due to small yields. Alfalfa was then introduced and at a later period sugar beets. As a result of rotation with alfalfa as a base, a wonderful change has been brought about, not only in the quality and quantities of the crops grown but also in the condition of the soil and the manner in which water can be distributed through it.

In the early nineties, when I was director of the Montana experiment station, our practice was to sow red clover seed with the grain and to cut the clover the following season for hay. By this simple two year rotation of grain one year and clover the next, we produced very heavy yields. In one year wheat yielded as high as 78 bushels per acre and oats 120 bushels. These high yields would not have been possible without a large percentage of organic matter and an adequate and well maintained moisture content in the soil.

In establishing a sub-experiment station at Gooding, Idaho, we first grubbed out the sage brush. It is well known that arid soils are as a rule lacking in vegetable matter and to supply this deficiency we applied manure. The effect of this manure coupled with rotation, enabled us to produce over nine tons of cured hay per acre of both red clover and alfalfa in three cuttings.

In 1906 when I was preparing a report for the Government on irrigation in the Sacramento Valley, I had occasion to look into the effect of long-continued cropping to wheat in this valley. The evidence that I collected at that time showed that the physical condition of the soil had undergone a change for the worse. It had become more inert and sticky and required more mules to run a gang plow. At that time, too, wheat raising in the Sacramento Valley was not a profitable industry on account of the low yields. That was some 12 years ago and since then there has been an enormous development along the lines of irrigated agriculture. Many of these old wheat fields, which produced 10 to 12 bushels per acre have been in alfalfa for years and when the alfalfa stubble is plowed under, the soil is found in excellent condition for subsequent crops.

Grow Cover Crops

I sometimes think it unfortunate that we can not pull up the citrus trees of California as one would fence posts, grow alfalfa on the tracts for three years, then turn under the alfalfa stubble and return the trees to their original places. If this were possible, you would find, I believe, that any common method of irrigation would suffice to produce excellent yields of fruit. The nearest approach to the application of this remedy is to grow leguminous crops between the rows or use manure. The time is approaching when manure in sufficient quantities will not be available and recourse must be had to cover crops. In such cases it is imperative that sufficient water be furnished either from the clouds or the irrigation canal, not only for the requirements of the trees but also to grow the legumes necessary to maintain the fertility as well as the proper physical condition of the soil.

Water-Holding Capacities of Soils

If a 40 gallon barrel is filled with soil approaching the condition in which it exists in an orchard, it is possible to add from 7 to 15 gallons of water, depending on the character and texture of the soil, before any runs over. This, however, is not the way soils are irrigated. To approach conditions as they are found on an irrigated tract, it is necessary to punch holes through the bottom of the barrel and allow the water to drain out. The water which drains out is called free water and what remains, capillary water. This is the reason I have called this topic the effective water-holding capacity of soils, since in all ordinary cases the free water either drains off or becomes capillary water. In filling reservoirs, tanks and other vessels with water, the capacity of each is known and there is no occasion to waste water in overflows. It is different in the case of soils for the reason that it is not generally known how much water soils will hold against gravity within the root zone of plants. This knowledge would be easily gained if all soils and subsoils were alike in character and if the roots of fruit trees and other plants were always found at the same depth below the surface. Soils and subsoils differ very widely in texture and character. While sand, silt and clay are the chief ingredients in all soils, the relative proportions in which these occur may be said to be infinite. It is, however, possible to group these into a small number of divisions. For the purpose of this paper, we may call these sand, sandy loam, fine sandy loam, gravelly loam, silt loam, loam, clay loam, and clay. In addition to the mineral matter, there is in soils a small amount of decomposed vegetable matter called humus which averages less than one per cent in arid soils besides great varieties and infinite numbers of micro-organisms chiefly bacteria. In certain localities, the surface soil is underlaid at varying depths by a more or less impervious sub-stratum called hard pan. Hilgard's definition of this is a dense and more or less hardened layer in the subsoil which obstructs the penetration of both roots and water. This, in brief, is the situation which confronts the irrigator in regard to soils. Some are so porous that when water is applied to the surface it soon percolates far beyond the deepest roots and leaves little in the upper six feet of soil. Other soils are so dense that little, if any, water will pass through them and the moisture held in the top layer is soon evaporated. As regards the more porous types of soils, it would seem important to determine how much water can be stored in the upper four to six feet in order to prevent undue waste of water by deep percolation.

In the Sacramento Valley the average quantities of water retained per acre-foot of soil at each irrigation were 0.82 acre-inch for the silt loams, 0.58 acre-inch for the clay loams, and 0.37 acre-inch for the clays.

(Continued next Week.)

Established 1877 Forty-[illegible]ear

CALIFOR[illegible]A
CULTIVA[illegible]R
and LIVESTOCK and DAIRY J

A Journal of Horticulture, [illegible]ire and Live Stock

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Combined with California Cul[illegible]14

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Saturday, Oct. 4, 1919

OUR ADVERTISERS RELIABLE
We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

"Its long, branching roots penetrate far down, push and crowd the earth this way and that, and thus constitute a gigantic subsoiler. These become an immense magazine of fertility. As soon as cut, they begin to decay and liberate the vast reservoir of fertilizing matter below the plow, to be drawn upon by other crops for years to come." That is alfalfa, which means so much to California's advancement. Alfalfa as a part of the ration of hogs means more economical fattening; fully ripened alfalfa hay means strength and better condition of the horse; alfalfa with silage means greatest of butter production. Alfalfa takes to California and the Southwest as do few other crops. It means more to the Pacific Coast than all its gold mines.

WEALTH IN GRAPES

And now the estimate is out that Northern California's grape output will total in value $75,000,000 this season. This is its record crop and its record price. In fact, one estimate has it there will be three times as many table grapes shipped out of the state this season as in any former year. It is even expected that of wine grapes alone there will be shipped 15,000 carloads. California is the greatest grape growing section of the world.

CUT OUT THE APPENDIX

President Wilson says: "Politically, socially, economically the world is on the operating table." There has already been a fearful loss of blood, but the only salvation for the patient is to continue the operation and put an end to the disease of Bolshevism.

But Bolshevism isn't entirely confined to the Russian peasantry or even to American malcontents; there is, for instance, the profiteer.

FALL CONFERENCE

The regular fall conference of farm advisers of California will be held at Berkeley, October 22. It is expected that representatives from nearly every farm bureau county of the state will be present and it is hoped at this time to perfect the organization of the State Farm Bureau Federation. Sixteen counties of the state have ratified the constitution of the organization.

PROTECT THE BEANS

There are two sides to the tariff question; at least there is a political side and there is an economic side. We have neither the time nor the ability to discuss the question from either of these sides, but we know there are American homes which have been affected and suffering has been caused by last season's importation of Asiatic grown beans. The same Asiatic ports that had the beans for American trade a year ago are still able to send to this country thousands of tons, and apparently this country is prepared to admit these beans regardless of the effect on American homes. Now whether we are believers in protecting American beans or American bacon, let us at least insist that American homes be protected.

THE FIRST RAIN

The first rain of the season has come. In Southern California it was devoutly desired for the fire fiend was sweeping along miles of mountain ranges. And this seemed to be a Southern California storm, for from one to two inches, and even more in some mountain sections, was precipitated. North of Tehachapi the rainfall was very light, at Fresno .23, San Francisco .28, Tulare .53, Sacramento .10, Red Bluff .03. The saving of the mountain watersheds gave a value beyond computation; at the same time there was much damage to beans, beets, drying fruit and to a small quantity of hay. The sun is clearing, and it is now hoped the beans will dry off and still be threshed. The state is dry and we need abundant rainfall, and here's hoping, regardless of all theories about a dry season, that the early rain means long continued ones.

GASSING THE BUGS

In the article regarding the state department of agriculture on the fifth page of this issue we refer to Mr. Mackie's work in vacuum fumigation of moth infested potatoes. The tuber moth has been a most perplexing pest for the California potato grower. It has not only proved a great injury to the growing crops, but fear of it has affected prices and prevented export. Once imbedded in the flesh of the potato it seemed there was no possible remedy. Now the air is pumped out of its deepest burrows and the deadly gas is pumped in. The result is sure death and assurance to the trade and to quarantine officials that there is no possible danger from such a shipment. Full cars of cotton have been run into great tubes, the air exhausted, the gas admitted in a way similar to that above described, and the cotton has been absolutely freed of the deadly bollworm or other pests.

Strength to the arm of Mr. Mackie; likewise of the entire force of the department in perfecting and operating this plan of insect control.

MILK SURVEY

The California State Dairy Council is making a survey of the pupils in the public schools in California and securing information as to the use of milk and dairy products in the homes of the school patrons. A series of circulars has been issued, the first one having in large type; "Mothers, please fill out." With this circular goes a card with request for name, grade, height, weight, and for information as to whether the child receives one glass, one pint or more milk daily, or whether it receives no milk. The Dairy Council is securing information as to the claim that has been made that California babies are larger and healthier than babies in other sections of the country, and also desires to learn as to what effect California's milk supply has in securing better health and greater stature. Other states have held these surveys and have developed thousands of cases, pitiful as to particulars, in that many of America's school children are suffering from malnutrition. This is an educational campaign and we trust will develop information as to California's ability to fully nourish the little ones.

CONTRACT UPHELD

Practically all of the members of the Prune and Apricot Growers' Association are standing true and marketing their product at a vastly higher price than they would if the organization did not exist. They are being embarrassed, however, by disloyal members who in the hope of apparent slight advantage attempt to violate their contracts. The association, however, proposes that where it has placed orders for boxes and supplies; where it has sold to jobber or wholesaler it must have the goods which it has sold and which were contracted to be placed in its hands for disposal; hence it has gone to the courts to compel delivery of the goods.

In one case in Napa County the association sued to prevent delivery of the goods to an outside purchaser. Judge Sewell rendered his decision in favor of the plaintiff association and ordered the issuance of the restraining order asked for in the complainant's petition. This decision upholds absolutely the legal status of the California Prune and Apricot Growers' contracts with grower members.

Here's hoping we may have more just judges.

The California Prune and Apricot Growers, Inc., writes:

"Although the members of the California Prune and Apricot Growers' Association are obtaining the maximum price for their dried prunes by reason of their membership in the organization, there is occasionally a member who, for some trivial reason or hoping to benefit himself by a fractional part of a cent per pound, due to some transient local trade condition, attempts to evade the terms of his contract with his fellow growers and the association.

"Instances of this kind are rare, but a typical case has just been judicially passed upon in Napa County. The case is California Prune and Apricot Growers, Inc., vs. Guy W. Young. The proceeding was before the superior court of Napa County, Judge Sewell of San Francisco temporarily sitting in place of Judge Gesford, on the petition of the Prune and Apricot Growers' Association for an injunction to restrain the defendant Young from selling or disposing of his fruit to any person or in any other manner than to the petitioner under the terms of his contract.

"Judge Sewell rendered his decision in favor of the plaintiff association and ordered the issuance of the restraining order asked for in the complainant's petition. This decision upholds absolutely the legal status of the California Prune and Apricot Growers' contracts with grower members."

AGRICULTURAL CLUBS

The Fifth Annual Agricultural Convention will be held at University Farm, Davis, October 16-18. This will call to Davis a large number of the brightest high school boys of the state. This agricultural club movement has resulted in friendly rivalry inspiring a most effective agricultural education.

FINE 'EM "GOOD"

Live stock people of the Sacramento Valley are having an experience with anthrax, an experience which is far from gratifying. They propose this experience shall be ended as soon as may be, and to that end are appealing to the state department of agriculture, live stock division, for strict enforcement of regulations and laws. The department is responding right heartily, and we notice that a meat peddler in Butte County was arrested for selling the hide of a cow which died of anthrax. Mr. Hideseller pleaded guilty rather than stand trial and was let off with a fine of $100 and in addition the condemnation of the people of the community. They propose that such practices shall stop and the live stock industry shall be saved.

PREPARE FOR RAIN

California's raisin, prune and other dried fruit industries suffered the loss of millions last year because of the September storms. It was a lesson which caused great preparation for a similar event this year. While this similar event this year was unexpected, it did come, though it was not so serious as last year. The damage has been comparativel slight, though it is too early to estimate it fully. It will be sufficient to speed the day when we may be better prepared with sheds, dry houses and other equipment. Touching on this, the Tulare Register says:

"How great the damage resulting from the rain is a matter upon which we have at this writing little direct information, but whether there was much or little, the showers again emphasize the risk that raisin and prune growers must run every year. For the past three weeks every fruit grower who has had fruit on the trays has been on the anxious seat, fearing the visitation at any time of a rain of sufficient volume and duration to ruin the product. The more we consider the situation the more we are inclined to believe that the present precarious system of curing fruit must give way to, or at least be supplemented by, drying sheds. The initial cost of the right kind of drying plants is no trifle, but the cost of 'running' them is not great, and as an insurance against loss they will be worth all they cost. It might not pay owners of small vineyards, but in many instances arrangements might be made for a cooperatively owned plant or for using one owned on a near-by vineyard."

California Department of Agriculture

THE people of the state of California do enact as follows: Section 1. A department of the government of the state of California to be known as the department of agriculture is hereby created. The department shall be conducted under the control of an executive officer to be known as director of agriculture, which office is hereby created. The director shall be appointed by and hold office at the pleasure of the governor, and shall receive a salary of $5000 per annum. Before entering upon the duties of his office the director shall execute an official bond to the state of California in the penal sum of $25,000, conditioned upon the faithful performance of his duties. He shall maintain his office at Sacramento and shall adopt and keep an official seal. He shall act as chief of one of the divisions herein created, etc., and the governor appointed as such director Geo. H. Hecke, the last of the horticultural commissioners of this state. Mr. Hecke's great desire is to make of this department such a success that it will place California agriculture on a plane far higher than it has ever held in the past. And this is some task, for California has a reputation reaching to the Antipodes as a section most advanced agriculturally.

At the recent State Fruit Growers' Convention there were representatives from New Zealand and Canada and Mexico, from Argentina, from India. These men had been drawn to this state to study California methods of handling her horticultural problems. And this was not exceptional, for there is no time but some investigator is asking Californians, "How do you do it?" and especially is this the case regarding its legislation, and the enactment, a paragraph of which is given above, is a matter of material interest to other countries and other states. Our new department follows very largely the methods and general plan of organization which have been found best for the United States department of agriculture.

The executive and general offices will be in the city of Sacramento. The various commissions, the state veterinarian and other officials, which have heretofore been in the Forum Building, will ultimately have their offices brought together in a buliding to be constructed by the state near the present state capitol. But as this building will be some time in construction, there is a necessity for gathering for greater efficiency at once, and a new building with well lighted large rooms has been secured at the corner of Eleventh and K Streets. The state insectary and its offices will still be maintained in the small structure in the center of Capitol Park, Harry S. Smith in charge. A branch of the state insectary has been located for some years at Alhambra. Its greatest work during the past two years has been in making investigations as to parasites and predacious insects which attack and help control the citrus mealybug. This work has been in charge of H. M. Armitage. The capacity of this station has been doubled by locating near it another branch insectary. Still another station has been established in conjunction with the Limoneira Ranch at Santa Paula.

Headquarters for the office of plant quarantine will be continued in San Francisco with Frederick Maskew in charge. The work of Mr. Maskew has made California quarantine efficiency known the world around.

The quarantine work for the southern end of the state, including Los Angeles and San Diego harbors, has been under direction of C. H. Vary. Many an insect or fungous trouble, which would have meant loss of millions to the state, has been stopped and destroyed at California's ports. The Southern California branch of the department has headquarters in the Union League Building, Second and Hill Streets, Los Angeles. The office is in charge of D. B. Mackie who has been instrumental in devising means of walnut codling moth control, or rather in preventing its spread. Mr. Mackie has recommended the use of the common laundry mangle or heated rollers through which the sacks, often infested with larvae of the moth, are run, and this treatment most effectively destroyed the pest. Mr. Mackie's deputies are busy at this period of the year making malnut packing house inspection and preventing distribution of boxes, sacks or other carriers of the pest.

The latest of his work has been tuber moth investigations. This pest once imbedded in the flesh of the potato has been supposed immune to any attack. Mr. Mackie is now giving it the vacuum treatment so effectively that the moth comes out so perfectly dead that he is a very good moth. The treatment consists in running the truck, or even the car if necessary, into a steel chamber which is sealed and the air exhausted. A "26 inch vacuum" is created. This removes practically all the air from the deepest burrows in the potato, and Mr. Worm within has his body so distended by the partial vacuum that he is ready for the next dose which consists in filling the tank or container with the gas of hydrocyanic acid. The Cultivator representative was shown specimens of these worms just removed from the flesh of potatoes, and every one of them, found in these potatoes given a 30 minute dosage, was dead. This same method has been used to sterilize and to destroy the pests in dates. In the Coachella Valley Submarine we note that:

"A most interesting and successful test was made on Tuesday of the new machine for fumigating dates which has just been installed at the new factory of the California Date Association. The system is what is known as the vacuum system of fumigation which was worked out and invented by Prof. D. B. Mackie, who as field entomologist of the state department of agriculture, assisted by Harry Steiner, installed and tested out the machine."

The office of viticulture brings to the state work a new man, R. L. Nougaret, formerly with the department of agriculture and a lifelong investigator of viticultural questions.

His last work before taking up state duties on September 1, was with the federal government of agriculture, working in the Fresno district on grape mealybug. This is a most serious pest and California vineyardists are questioning as to the future of the industry unless some method of control is devised. Mr. Nougaret's work at the present moment has to do more largely with preventing the spread of the pest, and methods of control will be taken up later. Winter spraying has but little effect because of the scaly nature of the bark of the vine. Fumigation has, however, proven very effective and can be conducted very economically.

The office of standardization is one comparatively new to California. This office was made necessary by enactments of the 1917 and 1919 state legislatures, the intent of which is to prevent shipment of fruit which will injure California's reputation and destroy her markets. This office is under the direction of Avery S. Hoyt. The entire division, that is, covering the offices of quarantine, viticulture, pest control and standardization, has for its chief the director, George H. Hecke.

The chief of the division of animal husbandry is J. P. Iverson. In this division there is the office of dairies and live stock, the office of cattle protection, and another having to do with statistical records.

Commissions, bureaus and boards having to do with agriculture, which have been brought under the jurisdiction of Director Hecke, are:

State commissioner of horticulture, state board of horticultural examiners, state dairy bureau, state veterinarian, stallion registration board, state board of viticultural commissioners, board of citrus fruit shipments, cattle protection board; and whenever by the provisions of any statute or law now in force or that may hereafter be enacted as a duty or jurisdiction is imposed or authority conferred upon any of said bodies, offices or officers, such duty, jurisdiction and authority are hereby imposed upon and transferred to the director of the department of agriculture the same as though the title of the director of the department of agriculture had been specifically set forth and named therein.

The personnel of the entire department is:

Executive Office

Geo. H. Hecke, director.

B. A. Reynolds, editor; O. W. Newman, technical assistant; Mrs. Kathleen W. Brown, chief clerk; H. W. Levers, chief accountant.

Division of Plant Industry

G. H. Hecke, chief; R. H. Taylor, assistant to the chief.

Office of Pest Control

Harry S. Smith, entomologist in charge; W. C. Jacobsen, superintendent rodent control; D. B. Mackie, field entomologist; H. M. Armitage and C. P. Claussen, assistant entomologists; E. W. Rust, parasite collector; E. J. Branigan and A. E. Gray, field assistants; Harold Compere, Paul Howard and Marshall Monroe, laboratory assistants; W. M. Phillipson and Harry Steiner, codling moth inspectors (walnut).

Office of Standardization

A. S. Hoyt, superintendent; W. I. Newcomb, A. W. Tate, Jr., district apple inspectors; S. V. Christierson, standardization inspector; W. V. Shear, potato seed inspector.

Office of Plant Quarantine

Frederick Maskew, quarantine officer in charge; C. H. Vary, George Compere and L. A. Strong, deputy quarantine officers; L. A. Whitney, technical assistant; A. C. Chatterley, Stewart Chatterley, A. C. Fleury, L. E. French, J. W. Mashmeyer, V. G. Stevens and G. R. Wilson, quarantine inspectors.

Office of Viticulture

R. L. Nougaret, viticulturist in charge.

Division of Animal Industry

J. P. Iverson, chief; J. G. Jackley, assistant chief and bacteriologist (in charge of dairy inspection); A. L. O'Banion, deputy veterinarian and chief inspector; Miss W. Kady, principal clerk.

Office of Dairies and Live Stock

J. J. Frey, pathologist; H. P. Bonnison, chemist; E. M. Keefe, district veterinarian and dairy inspector; A. C. Rosenberger, district veterinarian and dairy inspector; D. F. Coyner, R. E. Duckworth, George Gordon, A. F. Hanna, John S. Hay, F. A. Pfaffman, F. G. Whitehead, F. P. Wilcox and O. W. Kerr, veterinarians and dairy inspectors; H. G. Asselstine, E. H. Biles, Clifford Bresee, M. E. Coulter, W. F. Elder, A. L. Ford, Ray Hasson, D. W. MacNair, B. D. Mason, W. M. Russell, A. W. Sloan, S. E. Watson and I. D. Whitaker, dairy inspectors.

Office of Cattle Protection

W. O. Bottorff, special inspector; J. B. Newsom, superintendent and secretary; Charles Keane, Edward Reddy and Louis Williams, inspectors.

Special Dairyman's Day

For several months plans have been under way for a special meeting of Southern California dairymen during the fall months under the auspices of the Los Angeles County farm bureau. Plans have been definitely matured, and Thursday, October 23, has been assigned by the Livestock Show management as dairyman's day.

The afternoon of the first day there will be a dairy cow judging demonstration conducted by F. H. Scribner, noted dairy cow judge, and now assistant farm adviser of Los Angeles County. In the evening at an uptown auditorium, to be announced later but probably Symphony hall, all Southern California dairymen are invited to meet as guests of the California Dairy Council. A good program of pictures and music and short speeches will be provided. The cow testing department of the Los Angeles County farm bureau will stage a cow testing exhibit in connection with the Livestock Show, showing individuals of excellent conformation but not paying costs, individuals of excellent conformation and high producers, individuals of comparatively poor breed but good productivity, etc., the point being to emphasize the necessity of testing in order to pick out the animals that are really paying.

Program

9:30 a. m. — Auditorium State Exposition Building, Vice President J. B. Vaile, San Dimas, presiding. The Los Angeles County Farm Bureau, Secretary W. S. Rosecrans, Gardena; The State Dairy Council Idea, S. H. Greene, secretary-manager California Dairy Council, San Francisco; The Place of Cow Testing in the Dairy Business, N. A. Negley, dairy division, U. S. department of agriculture, Salt Lake City; Ten Years of Testing and Feeding in Humboldt County, The Hon. F. J. Cummings; What Cow Testing Has Done for Our Herd, William R. Harriman, superintendent Los Angeles county farm; Feeds and Feeding Rations for Dairy Cows, Assistant Farm Adviser G. E. Gordon.

2:00 p. m., In the fair grounds, Assistant Farm Adviser F. H. Scribner will conduct a judging demonstration.

8:00 p. m. at an uptown auditorium (probably Symphony hall) all dairymen are invited as guests of the California Dairy Council to a get-together meeting. Interesting program of music and pictures.

Agricultural News Notes of the Pacific Coast

Northern California

Colusa is to have a broom factory.

It is predicted hops will go to $1 a pound.

The Placerville fair dates are October 23-25.

Butte County's hop crop is estimated at $750,000.

The Butte County almond crop is 60 per cent of normal.

Wild deer along the upper Sacramento river are dying of anthrax.

The Chico cannery put up 20,000 quarts of peaches and other fruits.

The Oroville district reports a bumper fig crop, selling at 15 cents.

Nord, a town eight miles from Chico, was destroyed by fire September 19.

A thousand tons of ice per day is used at Roseville for refrigerator cars.

A ten-acre tobacco crop near Sacramento sold for nearly a dollar a pound.

Rice growers in Colusa County will receive about $8,000,000 for their crop.

Hop land has been selling in the Santa Rosa district for $1000 an acre.

Guinda, Yolo County, shipped a car of 641 sacks of almonds, weighing 26 tons.

A ton of huckleberries each day is shipped from Fort Bragg, Mendocino County.

California's first 1918 rice shipment from field to mill was at Willows September 20.

Sutter County cattle are menaced by several epidemics of anthrax and vaccination is becoming popular.

The state engineer advises the formation of a Honcut-Yuba irrigation district in Butte County.

The California Association of Nurserymen have been invited to hold their 1919 convention at Chico.

On September 24 at Santa Rosa 250 grape growers met and decided to make wine and hold it until it can be sold legally.

The Comptonville, Yuba County, district is unusually active by reason of the good roads system recently built in that section.

A Yuba County grower has for several years marketed crops of Grindelia robusta, a native weed used in asthma and throat troubles.

Tehama County exhibited and explained to visitors at the State Fair an immense colored relief map which proved very attractive.

The Gravenstein apple crop in the Sebastopol district shows an increase of 50 per cent over that of last year. Total output 500 cars.

Word from Sacramento states that the standardization law is meeting with the approval of the majority of fruit growers in every district.

The California Almond Growers' Association has made prices as follows: Nonpareil, 30c, I. X. L., 28c; Ne Plus Ultra, 26c; Drakes, 21c.

The Northern California Coney Club had a fine exhibit of rabbit furs at the State Fair in addition to the immense display of live animals.

At the San Francisco Civic Auditorium, October 4 to 9, the post office department will demonstrate how to pack fresh farm products for mailing.

H. Clay Miller, formerly of the food administration department, states California farmers have 150,000,000 pounds of beans for sale at cost of production.

Central California

Salinas is to build a $10,000 cannery.

California's almond crop is valued at $3,000,000.

The shortage of grape cars at Lodi grows worse.

A large acreage of Kadota figs is being planted about Oakdale.

Turlock held its first and very satisfactory hog sale September 26.

Monterey County's fair October 10-11 will be opened with a barbecue.

Lodi growers are testing ventilated box cars in shipping grapes east.

Prices of hogs sold at Tulare last week ranged from $13.25 to $15.25.

Turlock has a new sweet potato curing plant that employs 100 persons.

Over 5000 people visited the two-day fair at Poplar, Tulare County.

The Derlow family of eight made $728 first month of picking fruit near San Jose.

Tulare will vote October 27 on a bond issue of $90,000 for building an auditorium.

The crop of the Thomason olive orchard near Lindsay sold last week for $190 a ton.

No figs may legally be packed that are mouldy or sour or wormy. Uncle Sam has said so.

Some apple growing sections of Central California reported a lack of boxes this season.

Parkerfield, Monterey County, reports the extermination of ground squirrels in that district.

At a sale of grade dairy cows at Turlock September 17 an average of more than $90 each was had.

A milk bar for dispensing milk by the glass will be a feature of the Tulare County fair, October 8-11.

A three year old Thompson Seedless vineyard at Terra Bella, Tulare County, returned $480 an acre.

The Suddarth family of five made $709 the first month of prune picking on the Rawlings ranch, San Jose.

The largest Duroc-Jersey sale of the state took place in Tulare County; consideration $15,000, for 238 hogs.

The Byron-Jackson Iron Works of San Francisco is constructing a branch foundry and machine shop at Visalia.

The three Tulare creameries paid $3000 in wages more during the last month than the corresponding month in 1918.

G. W. Osterhout has bought 480 acres in the Poplar district, Tulare County, and will plant it to Thompson Seedless.

The women's department of the Tulare fair, October 13-19, will have a large exhibit of needlework, flowers and babies.

Tulare County citrus growers will conduct a five years' series of soil experiments under direction of the Riverside station.

A man representing Japanese offered $20.000 for a piece of real estate of Porterville but was refused. No Japs for that city!

The first annual meeting of the San Joaquin Water Conservation and Development Association will be held at Tulare October 24.

Col. R. B. Marshall, for eleven years chief geoprapher of the United States geological survey, has presented a plan for irrigation of all the Sacramento and San Joaquin Valleys.

Southern California

Ventura buyers offer 12 cents for beans.

Ten thousand acres south of Chino are untilled.

Don't forget the fair at Riverside October 7-11.

A Los Angeles firm is making binder twine from yucca leaves.

The "All-Highlands Lemon Association" is being organized.

One Orange County walnut grower sold his crop for 29 cents a pound.

More than 1000 bales of 1919 cotton have been sold at Blythe for $33.50.

Santa Barbara reports local bean fields yield but one-fifth that of 1918.

There were five sales of citrus groves at Covina last week, two to newcomers.

Chino ranchers are specializing on red kidney beans, a great success in that district.

The honey crop in Southern California is light, owing to light rainfall of last winter.

A. S. Wysong of Los Angeles won the $10,000 prize for the best walnut stamping machine.

Cotton producers in ten Southern states have combined. Southern California growers may have to do likewise.

Citrus growers of California received $75,600,000 for 45,692 carloads of oranges in the year ending September 1.

Camarillo will build a cold storage plant at the cannery because of fruit rotting during the recent railroad strike.

The new packing house of the Yucaipa Apple Growers' Association is now in operation, with a crew of 50 packers.

F. W. Mathiessen has purchased 47,000 acres in Santa Barbara and Ventura Counties from H. and W. Pierce of San Francisco.

A crop appraiser states Palo Verde Valley farmers borrowed in 1919 less than one-half the sum obtained in 1918. Prosperity!

Sudan grass has been barred from the Imperial Valley as the farmers are afraid of it, being too closely a relative of Johnson grass.

Ganesha Park, Pomona, is so popular as a picnic ground for the whole countryside that its resources are becoming heavily taxed.

Santa Barbara walnut growers blame a spray used by them for a free dropping of leaves which makes nut gathering difficult.

Lankershim fruit growers have found more water increases the crops and many orchards are being piped for summer irrigation.

A baby sleeping close to a window next to an orange grove was nearly suffocated at Covina last week by gas from orchard fumigation.

A fumigator at Covina came near dying from a small amount of hydrocyanic acid that had been sprayed on his lunch unknown to him.

The irrigation rush is over in the Palo Verde Valley and last week's water supply was cut more than one-fourth over previous week.

Brawley shipped in one day last week one car of cotton seed, two cars of milo maize, one car of bones (?), one car of bottles (empty), and five cars of ice.

The Coast and General

Yuma Valley reports a serious shortage of cotton pickers.

The crop of sweet potatoes in Texas is much larger than in 1918.

Fall and winter grains are being sown in Utah and Washington.

Hood River, Oregon, reports a decided shortage of nursery trees.

The fifth cutting of alfalfa has been finished in Arizona and California.

Experts estimate the California-Arizona cotton crop is worth $43,360,000.

California has won second place from Texas as a rice producing state.

Indian corn in Washington was much improved by the September rains.

Light showers fell last week over all sections of Arizona and New Mexico.

A Cashmere, Washington, orchardist sold his apple crop from eight acres for $24,000.

Joe Brown of Sumas, Washington, made a profit from nine acres of berries of $333 an acre.

Railroad yards throughout Arizona are choked with loaded cars and empty cars are very scarce.

James H. Wells, Baldwin, Florida, marketed his fig crop for 20-25 cents per quart by the crate.

Italy needs American live stock, meat and dairy products but has enough poultry and eggs.

Of the 30,000,000 bushels of peaches in the 1919 crop in the United States, California produced 16,000,000.

A tornado damaged fruit and vegetables in Dade County, Florida, recently to the extent of a million dollars.

The highest week's shipments of cantaloupes from the Rocky Ford, Colorado, section this year was 1500 cars.

The grapefruit or pomelo crop on the Isle of Pines, Cuba, is a large and fine one and two weeks earlier than usual.

In Millard County, Utah, 54 farmers pooled their wool clip and got 50 cents a pound, seven cents higher than ever before.

The Southwest Cotton Company of Goodyear, Arizona, sold 24 Duroc-Jerseys ten months old for $1305, about $54 each.

Japanese potato growers at Yakima, Washington, who have half the potato acreage, are holding for a minimum of $35 a ton.

A colony of Hindus southeast of Chandler, Arizona, have 200 acres of cotton and 200 acres of maize, all high class.

A tunnel 14 miles long through solid granite is part of the new irrigation system near Seattle, Washington, a four-year job.

The Cactus Food Products Company of California has secured government permission to harvest the cactus crop on 15,000 acres of wild lands.

A delegation of cotton growers of the Salt River Valley, Arizona, under the direction of County Agent H. C. Heard, visited the Sacaton experiment farm, about 40 miles south of Phoenix. This farm is on the Pima Indian reservation and is where the Pima cotton was developed. Experimental work with cotton is still going on at this station and the cotton growers felt well repaid for the trip.

STORY OF THE LEMON

By H. B. Cady

LEMONS are picked with more care, cured longer and handled oftener before reaching market than any other citrus fruit. It has been stated that a lemon, as the housewife knows it, is only half made when it leaves the tree.

As the best quality of lemon is one which has been picked green and properly cured, the picking is based on size more than maturity. The mature yellow fruit, or tree ripe fruit as it is commercially known, is somewhat inferior to the cured fruit in flavor, acidity and keeping qualities. Each lemon is sized before being picked This is done with a metal ring to which is fastened a smaller ring which fits over the second finger of the picker's left hand, enabling him to size each fruit as he takes hold of it. If it passes through the ring it is left until the next picking, which is usually about 30 days later. Different packing houses use different sized rings and some change the size at different times of the year. The most commonly used ones are: Number eight, which is two and one-fourth inches in diameter, and number nine which is 1-32 of an inch larger.

Two cuts of the stem are required in correct picking, the first leaving the stem about one-fourth of an inch long. With the fruit down before him where he can better see his work, the second cut is made close up to the button. Special fruit clippers are used Pickers are required to place, not drop, the fruit into the picking sack which is carried at the side. By unsnapping the bottom of the sack the fruit is emptied into the field boxes without great chance of injury.

Upon entering the packing house the fruit is run through a washing machine. Cleansing is accomplished by the fruit passing through water, with brushes on all sides. From the washer tank the fruit is carried out on to belts, from which it is graded as to color, dark and light green, silver, and yellow being the usual classes. Most of the cull fruit is removed at this time, also.

The fruit is now ready to be cured in packing house. The time required varies with the grade, or color of the fruit. Dark green fruit, under correct conditions of humidity and temperature, will usually cure in from four to five weeks. The temperature should not be over 70 degrees. The lowering of the temperature and the changing of air is accomplished by ventilation during the cool hours of the night. The humidity may be plenty high enough, around 80 points, in houses near the coast. In the interior valleys it is usually controlled by sprinkling the curing rooms. Correct curing not only changes the color, but produces a thin, tough rind as well.

After being cured, lemons are graded as to soundness, blemishes and general appearance. In the grading process the lemons are placed in trays, one layer deep. From these trays they are packed, the packers doing the sizing as they pack.

FOR EXHIBIT OF FIGS

By Ira J. Condit

AT THE next meeting of the California Fig Growers' Association, which will probably be held shortly after the first of the year, it is planned to have an extensive exhibit of fig products of every description. The number of concerns putting out fig jam, preserves, canned figs, pickled figs, candied figs, etc., is increasing rapidly and a little effort on the part of a committee would result in assembling a very creditable exhibit which would be not only of considerable advertising value to exhibitors but of educational value to all concerned.

It is a well known fact that the California dried fig has in the East a reputation that, to say the least, is not rosy. One well known importer and broker in Chicago wrote as follows in January, 1918: "The Calimyrna fig, we think, in the opinion of the trade at large, compares very favorably with the Smyrna imported fig in quality and by many is preferred because of the assumption that the conditions in the packing plants in California are more hygienic than those existing abroad, The California Adriatic fig, as you know, has a poor flavor and though it is largely used even in some instances for fancy packages that sell at high prices, it cannot, in our opinion ever supplant the imported article except for manufacturing purposes because of its inferior flavor."

Another importer writes from New York City: "Summing the whole matter up in a few words, we would suggest that the growers try to eliminate entirely the smut which unfortunately seems to be a condition in both Adriatics and Calimyrnas and endeavor to produce a fig with a thinner skin and increase the quantity of actual meat contained inside."

There is no room for argument over the need for improvement in the California pack of dried figs. It behooves the California fig growers to see that the Eastern assumption that "the conditions in the packing plants in California are more hygienic than those existing abroad" is based on fact. The truth will out sooner or later if the assumption is not true and the sooner the better for the California growers.

An exhibit of fig products such as contemplated by the Association should attract the attention of every grower and packer in the state. An individual having a single fig tree may have a knack of putting up figs which would show up another similar product in a poor light. If a grower has a mysterious secret process of drying or preserving figs, which he thinks no one else ever thought or heard of before, it is his priviiege to keep the secret or reveal it, but the product is of no value unless it will stand the test of comparison with other similar products.

Plan now while the producing and drying season is on to get an exhibit ready. Any quantity of fruit however small or any exhibit of miscellaneous products however large will be accepted. Get ready now.

FRUIT WORKERS OF CALIFORNIA OFFER UNUSUAL PROBLEM

When you consider that the California fruit pack for this year will have a value of $50,000,000 and that 80 per cent of it all must be handled in eight weeks, you get some idea of the great industrial problem which must be soived in this state," says Catherine Phillips Edson, executive officer of the Industrial Welfare Commission, in an interview with the Sun-Maid Herald, of Fresno.

Minimum wages for dried and green fruit workers of $13.50 a week goes into effect August 20 and in the manufacturing industry the same minimum will become effective September 1. These raises will affect thousands of

NEW Mitchell SIXES

OUR VICTORY MODEL

100 Notable Changes

Why Cars Grow Old

THE pre-war Mitchell was a famous Six — a 14-year development. It won us a world-wide success. Now we have added more strength and endurance. There are larger parts, sturdier parts, better materials. We have used all our experience to give you the ideal, long-lived Six.

See Major Additions

The rear axles are much larger. The steel frame is 1½ inches deeper. The gears are much stronger. And sample gears are constantly broken to insure these new strength standards.

We are guarding against wear. The cylinders are ground to utter smoothness. The pistons are perfectly fitted. Motor bearings are made large. The crankshaft is twice balanced in two new-type machines. Thus we give you motor smoothness that endures.

Engines are tested by dynamometers. Axles are tested by electric apparatus. Transmissions are tested in a sound-proof room. Gears are mated pair by pair. A large staff of trained inspectors guards against the misfits which cause troubles.

The body is a new design. The frame is uniquely staunch. Extra coats of finish give a lasting luster. The new-grade top will stay new. The leather upholstery is filled with interlaced hair, so the cushions keep their shape.

Fuel cost has been much reduced. Fit and smoothness in the motor save power waste. A thermostat controls the temperature of liquids, air and gas. The carburetor intake is twice-better heated.

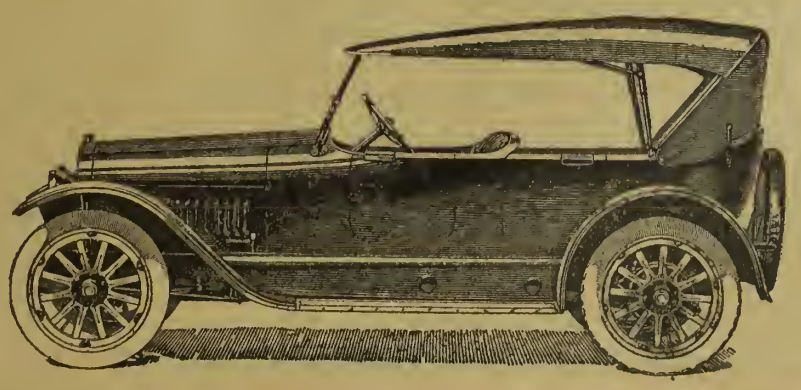
Unique riding comfort is attained by long cantilever rear springs. And ample tests have proved them unbreakable in use. Driving comfort is attained by a ball-bearing steering gear. Brake efficiency is increased 75 per cent.

Ask for our new catalog, then see this new car. There is no like value in this class today.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wisconsin

5-Passenger Touring Car
$1690 at Factory
120-Inch Wheelbase—40 h. p. Motor
3 Passenger Roadster, same price
Also built as a Sedan and Coupe.

7-Passenger Touring Car
$1875 f. o. b. Factory
127-Inch Wheelbase—48 h. p. Motor



It Helped Me Get *My* Start

Boys, when I took this place it was a *wreck*—old, worn out fruit trees and land as tight as your fist. Not fifty boxes of fruit in the whole shooting match. Mostly runts at that. I nearly killed myself the first three years cutting old trees, grubbing stumps, and digging holes for my new trees. Went flat broke and things looked pretty blue until I saw an advertisement of

HERCULES DYNAMITE

I sent for a copy of "Progressive Cultivation". Bought some Hercules dynamite and went to it. It was a cinch! You'll scarcely believe it when I tell you that I did more work that Spring with one helper than I'd done in three years with four men and a team—but it's a fact. You boys were youngsters then and didn't know much about it, but *dynamite gave me my start* and it'll help you to keep up the good work. The Hercules Powder Co. sends "Progressive Cultivation" *free* to any farmer or orchardest who will sign and send in the coupon that they print with every one of their advertisements.

HERCULES POWDER CO.
1029 Chronicle Building
San Francisco California

Hercules Powder Company, 1029 Chronicle Building, San Francisco, Cal.

Gentlemen: Please send me a copy of "Progressive Cultivation."
I am interested in dynamite for_____
Name_____
Address_____

Layne & Bowler Pumps

No pit required. No packing glands. No bearings to overheat. No plungers.
Pumps that you can depend upon. Built in sizes to meet every requirement—capacities from 180 to 4500 gallons per minute. Bearings protected from sand.
Ask for one of our representatives to call. Folder No. 30 upon request.

Layne & Bowler Corp.
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You Want FERTILIZER That Gives the BEST Results

Figure cost per box of fruit, not cost per acre

We are manufacturers of highest grade fertilizers from BEST GRADE Agricultural Chemicals.
We solicit your inquiries for descriptive list and prices of our FAVORITE BRANDS for Oranges and Lemons. Also for Deciduous Trees and Truck Farms.
Our fertilizers are fully guaranteed. Station reports show it is not unusual for our fertilizers to run considerably over our guarantee.
RESULTS obtained with our fertilizer show that lowest prices never buy the best goods. Our prices are right, and cheapest by the crop test.

Agricultural Chemical Works
518 I. N. Van Nuys Building Los Angeles, Calif.
Telephones: Pico 3619: Home 66022

workers in the state and the September 1 raise will greatly increase California's payroll.

California Pays Best

"California pays the best wages of any state in the Union to this class of workers. This state has the highest minimum. The City of Washington, District of Columbia, has a slightly higher minimum for mercantile workers, but this is the only exception.

"Organization of fruit and cannery workers has reached its highest point in Fresno. I believe the Fresno section is the only big fruit growing area which is thoroughly organized on labor principles.

"In the Santa Clara Valley and in Southern California I have known of instances where women made $40 and $50 a week as expert fruit workers and the compensation for this class of employment is so universally high that our minimum wage of $13.50 is virtually ineffective. No good worker makes so low as that..

"When you consider that the legislature has placed in the hands of five commissioners, of whom I am one, the power to fix the wages of women and girls industrial workers in California, you can contemplate what a tremendous responsibility as well as authority devolves upon us.

Board of Arbitration

"The Industrial Welfare Commission desires to so conduct its hearings and render its decisions that both workers and employers will come to look upon the commission as a fair and just tribunal for arbitration. That we must raise wages is only just in view of the great increases in the cost of living. But California people should on the other hand patronize home industries, remembering that the California manufacturers must compete with the Easterner who has much cheaper labor.

"In 1917 the commission fixed the minimum wage for mercantile workers at $10 minimum, making an increase in the payroll of $660,000 a year. The laundry workers' minimum of $10 was awarded January, 1918, increasing the state payroll by $235,000. July 1, 1919, the $13.50 minimum in the mercantile trade went into effect, spelling another large addition to the amount that companies had to pay their workers.

"Much of our work is educational; not only to educate the employer and the worker on the solution of their problems but to educate ourselves. The commission being new in its duties has to proceed doubly careful.

"Just at the present time there seems to be a great amount of industrial disturbance. This cannot be wholly settled until some balance, some definite relation can be found between a living wage and the cost of living. But the Industrial Welfare Commission can solve the immediate problems, settle the disputes and prevent or cure strikes.

"In Los Angeles one of our educational campaigns has been directed toward teaching the women to spread their laundry out over the week instead of everyone sending their laundry out on Monday and expecting it back on Thursday. By such a method the laundry is busy the first part of the week and has to lay off girls the latter part.

"I think we can expect some national solution of many of our industrial problems through the issues that will undoubtedly come up in the next great presidential fight."

The other members of the Industrial Welfare Commission are Judge Frank J. Murasky, of the Superior Court, San Francisco; Alexander Goldstein, formerly of Fresno and now of San Francisco; A. B. C. Dohrman and Walter G. Mathewson, secretary of the Building Trades Council of San Jose.

Prepare for the Floods

The fires have swept the mountain sides as never before. If these fires are followed by torrents of floods this winter farmers in some of California's rich valleys will be given opportunity to fight the flood waters. An illustration on next page gives something of an idea of the effect of a little flood on rich and productive land. The streak of boulders marks where formerly stood productive orchard trees. One of the best protectors of surface soil is a cover crop. In time of great flood of course even this would be of little avail but for the small torrents which rush from the nearby canyons the binding power of fibrous roots is too well known to need any argument on the part of the California Cultivator but it is in order to remind growers that this is the period of the year when these crops should be started. Give the crop opportunity to get rooted in the warmer fall months. Plant cover crops as never before. A Saticoy subscriber sends the engravings which appear on these pages and he refers to the method of handling the crop in the spring time under what is known as the Kelsey method. In addition to proving a good soil binder he refers to the advantage in heavier bottom land conditions.

"For the past four years one orchardist has chopped up and thoroughly mixed with four or five inches of the soil a heavy growth of barley and burr clover, but has made no attempt to completely cover it as is done in plowing. To do this he uses a five foot disk loaded with about five hundred pounds extra weight and keeps the disks rolled thin and files them to a knife edge each morning.

"As an indication that there is something in this method of farming,

The Kelsey Method of Handling Cover Crop

For the past four years Mr. Kelsey has chopped up and thoroughly mixed with four or five inches of soil a heavy growth of barley and bur clover but made no attempt to completely cover it as plowing would. To do this he uses a five foot disk loaded with about 500 pounds weight and keeps the disks rolled thin and files them to a knife edge each morning. He found this a stock killer and during the last two seasons has used a Ventura made plow.

Devastating Effect of Floods

The binding power of roots in any soil is of great value in time of flood. After the mountain fires of this season there will be abundant need for preventing soil injury from storm waters. Get cover crops planted early that a fine root system may become established.

he has converted a stubborn black soil into a fairly respectable sort of land, and whereas in former years the run-off during rains was very considerable in a former winter of torrential storms the ground absorbed it all. With but twelve trees to the acre—sixty feet apart—he consistently takes off each year a ton or more of number one nuts to the acre."

DAIRY INDUSTRY TO BE FEATURED AT SAN FRANCISCO SHOW

The dairy cow, her products and the equipment necessary in a modern dairy, will make up one of the most attractive divisions at the California International Livestock Show to be held in the California Building at the Panama-Pacific Exposition grounds, San Francisco, November 1 to 8. It will be as complete in the various branches of the dairy industry as the National Dairy Show.

Manager Gordon H. True announces that he has just received word from F. Lamson Scribner, expert on exhibits of the United States department of agriculture at Washington, that upon the close of the National Dairy Show at Chicago next week the bureau of animal industry's exhibit will be shipped to San Francisco. This will make one of the big features of the dairy end of the show as it contains attractive as well as educational features prepared by federal experts working for the advancement of the dairy industry.

A. W. Morris & Sons of Woodland have assured True that they will exhibit Tilly Alcartra, the world's record cow, from their great Holstein herd, and arrangements are being made to have Vive La France, the world's record Jersey, shipped from Oregon. California Gretel, the world's champion milk goat, will complete the trio of world's record milk producers, making perhaps the only dairy show in the country with such a collection of title holders.

As the result of a conference by Dr. C. L. Roadhouse, Sam H. Greene of the Dairy Council, and True, with a number of milk distributors and health officers of the San Francisco bay region, active competition will be brought out in the milk and cream classes, and in addition to this there will be a full showing of the various makes of cheese and butter.

AN IMPORTANT SHORTHORN SALE

H. M. Elberg, proprietor of the Roselawn herd of Shorthorns, believes that the Shorthorn industry of California needs many more females distributed throughout the state in small herds. It is Elberg's idea that only through the establishment of many more herds can the increasing demand for better bulls, originating with the range men of the West, be taken care of. Elberg makes the point that under present conditions by far the majority of the bulls that are used must be purchased in the Eastern states and is certain that the average bull buyer would greatly prefer to buy California raised bulls if enough were produced to fill the demand.

The Roselawn herd, which was originally founded over 30 years ago by W. S. Gibson, has always held a high place in the cattle affairs of the Coast, and for that reason the sale, which will be held at the farm adjoining Woodland on October 16, is attracting much interest. The sale, which is made necessary by a rearrangement of leases, will consist of 45 head of bulls and females, and the entire lot is of a quality that Western breeders have seldom seen. Elberg is putting in a number of his top individuals, in many cases animals that he would much prefer to retain in the herd, which is made necessary in order to reduce his herd to fit his new acreage.

A feature of the sale that should appeal to California buyers is the cataloging of 15 superior females that will sell with calves at foot and bred back again to one or the other of the two herd bulls, Roselawn Champion, junior champion at the 1918 state fair, or Crescent Dale, a grandson of the noted Avondale. Crescent Dale is also cataloged and his selling can be regarded as an exceptional opportunity for breeders and others to secure a bull of outstanding merit.

It is expected that one of the largest gatherings of Shorthorn breeders of the year will be present at the sale.

C. L. Hughes of the California Sales and Pedigree Company, has the details in charge.

GLENN COUNTY SHROPSHIRE BREEDERS ORGANIZE

Shropshire breeders of Glenn County met during the Glenn County fair and organized the Glenn County Shropshire Breeders' Association. The initial membership includes over 20 of the leading breeders of that county. The purpose of the association is to further the production of pure bred Shropshires in Northern California and to arrange for a number of public sales to be held next fall. The following officers were elected: President, W. S. Guilford, Willows; second vice president, Morris Merrill, Willows; third vice president, Frank Glenn, Glenn; fourth vice president, R. B. Moore, Maxwell; secretary, O. L. Raper, Glenn; treasurer, A. J. Morey, Orland; executive committee: A. H. Culver, Morris Merrill, Ernest V. Eibe, A. J. Morey, O. L. Raper, W. W. Foster, M. Fetzer, M. Fortini, Charles L. Lambert, Jr., J. J. Cornwall, J. Johnson, F. B. Glenn, C. L. Leonard, Col. D. A. Shellooe, J. M. Walters, W. P. Dwyer, Van Bernard, H. H. Rawlins, Senator F. W. Lovett, R. B. Moore, W. S. Guilford.

Studebaker

THE LIGHT-SIX

A BEAUTIFUL, clean-cut car of 119-inch wheelbase with plenty of room for five passengers, and a 50-horse-power motor that takes you over country roads at top speed and climbs the steepest grades without effort.

On its mahogany-finished instrument board are conveniently grouped a speedometer, oil pressure gauge, ammeter, lighting and ignition switches; upholstery is genuine leather. Gypsy-type top with plate glass windows in the back.

Its power and staying qualities have been extraordinarily demonstrated in the hands of thousands of enthusiastic owners.

Studebaker builds complete in its own factories practically every vital part of this beautiful LIGHT-SIX, thus reducing middlemen's profits to a minimum and making possible such sterling high quality at its unusually low price.

THE LIGHT-SIX $1685 THE BIG-SIX $2135

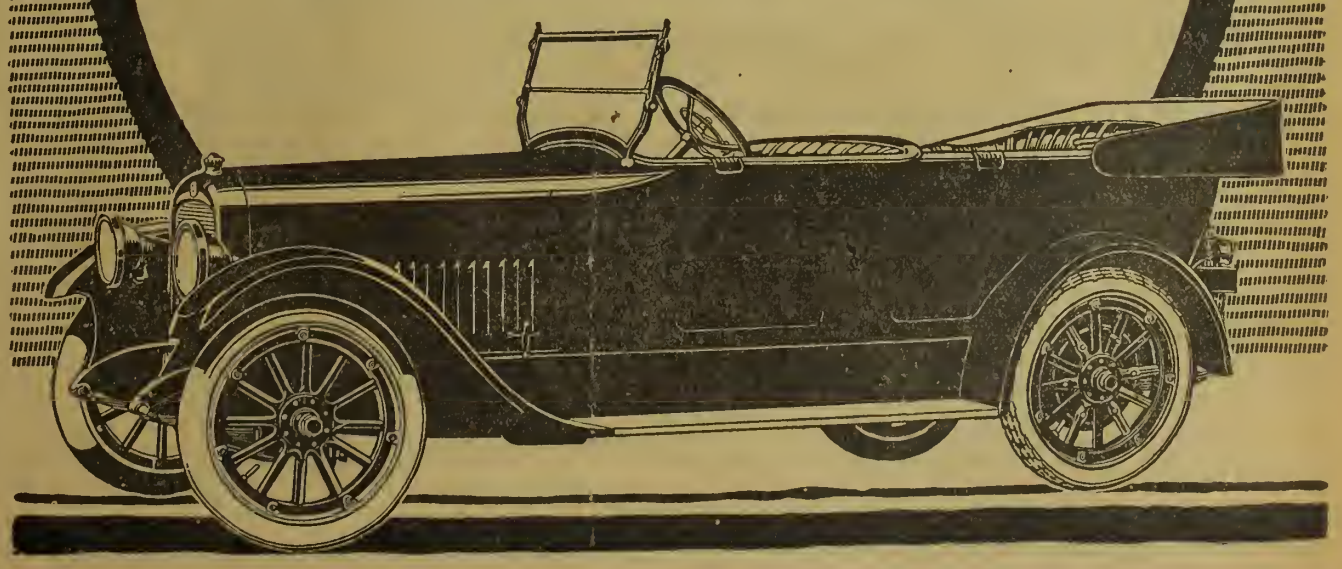
All prices f. o. b. Detroit

The Studebaker Corporation of America

Detroit, Mich. SOUTH BEND, IND. Walkerville, Canada

Address all correspondence to South Bend

Ask any Studebaker dealer for a demonstration ride in this LIGHT-SIX



Heider

15% to 20% Fewer Parts —Years Added to Tractor Life

HEIDER Friction Drive does away with clutch, transmission gears and bevel gears. All three units are in one. Power ordinarily used up by these parts is put into drawbar pull or belt work. Steady, resistless power under perfect control. **Seven speeds forward, seven reverse,** for traction or belt work with one motor speed, one lever. Saves wear because of fewer parts. Easier operation—the simplest drive known. **No transmission gears mean no gear stripping.**

11 Years Actual Field Work

You do not have to take a one or two days' "demonstration" as proof of Heider. America's leading power farmers have been using Heiders for 11 years. Many of the original Heiders are in faithful use today.

Write for our new illustrated catalog of HEIDER, which also describes the famous Rock Island CTX Tractor Plows and the Rock Island No. 38 One-Man Tractor Disc.

Rock Island No. 38 One-Man Tractor Disc

Close-up levers. One man easily operates both tractor and disc.

What Users Are Saying

"I bought a Heider 9-16, with plow attached, last spring and am highly pleased. Would not exchange it for any other." Eugene Sites, Elyria, O.

"Have used my Heider 12-20 for two years; the longer I use it the better I appreciate its value." Henry Adam, Warren, Minn.

"I purchased my Heider three years ago. I farm 350 acres, and if I was purchasing another it would be a Heider." A. L. Barnes, Chappell, Neb.

Rock Island One-Man Outfits

Heider Model D 9-16 with No. 9 Rock Island C T X two-bottom Power Lift Plow directly attached. Your hands guide the tractor. Your feet controls the plow.

Burns Kerosene

E. P. BOSBYSHELL CO.
725 N. Los Angeles St., Los Angeles, Cal.
Manufactured by
Rock Island Plow Company
Rock Island, Ill.

Model C
12-20
With No. 19
Rock Island
2-3 Bottom
CTX Power
Lift Plow
Attach.

Sanguinetti's Quality Brand
(1919 Crop)

Alfalfa Seeds

Grown on Certified Fields

Unexcelled for Germination, Purity, Color and Productiveness

VARIETIES:

Chilean (Common) Smooth Peruvian
Hairy Peruvian

Orders Shipped Same Day Received

It will be to your interest to ask for our prices and samples before placing your order elsewhere

E. F. SANGUINETTI - Yuma, Arizona
"THE HOME OF THE HAIRY PERUVIAN"

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency." Tells You Why.
Hauser Packing Company
Los Angeles, Cal.

When writing advertisers, mention The Cultivator.

Cover Crops in Tehama County

The following statement of methods in Tebama County appears in the September issue of the "Farm News" published by tbe county farm bureau. We take it that tbis is written by County Farm Agent E. W. Curtis:

Are you planning on a cover crop this winter?

What crop shall be grown?

When shall it be planted?

These are pertinent questions and now is the time to answer them. Numerous orchards in the county already have a heavy winter growth of bur clover and alfilaria, commonly called "filaree." These orchards perhaps do not need a cover crop though tbe growth of these crops is not always certain without seeding.

There are numerous crops grown for cover crops, tbe principal ones being Canada Field peas, common vetch, purple vetch, sweet clover, bitter clover, fenugreek, besides such crops as rye or oats.

By far tbe most desirable cover crops are the various legumes, for, besides furnishing humus to the soil they take free nitrogen from the air and store it in the soil.

Of all leguminous crops grown for this purpose, vetch, bitter clover or Melilotus indica, and purple vetch are probably the best. Common vetch is the oldest and best known though Melilotus indica is at present proving to be a superior cover crop. The indica reaches a heavy tonnage earlier than vetch, thus making it possible to plow it under before the rains cease in the spring.

Melilotus indica has a very extensive root system, six months old plants having shown tap roots that reach a depth of eight feet. In this respect it excels both vetches and cereals.

Melilotus indica is best seeded broadcast and then harrowed in. Irrigation furrows are then made close enough so that the entire surface of the soil will be wet when irrigated. Where the rains do not come early, it is necessary to irrigate to start the crop. About 25 pounds of seed per acre is recommended. From five to 20 per cent of the seeds are hard and do not germinate until the second season.

All legumes bave the power of taking nitrogen from the air indirectly througb the bacteria which are naturally present in the nodules on the roots of this group of plants.

While most legumes will develop to a fair degree without the presence of these bacteria, their development will be much hastened if the bacteria are present. Melilotus indica grows wild over much of the state and is normally well inoculated.

The same bacteria that are found on the roots of common bur clover also inoculate sweet clovers and alfalfa. Where bur clover has grown it is not necessary to inoculate. However where orchards have been clean cultivated for a considerable time the organisms may not be present in sufficient number. On such soils artificial inoculation is desirable.

Use and Waste of Water

Where does the irrigation water go? We know it is applied to the soil for tbe benefit of the crops, but how large a percentage is actually used by the crop is a puzzle, and one of the greatest problems is how to prevent waste after irrigation. It has been estimated that in some cases 80 per cent of the water is lost after its diversion from the stream. Of course a lot of water from every irrigation is transpired by the crop but this we must supply and it cannot be counted as waste.

The heavy losses, as the water goes from stream to field run as follows: Seepage from canals; seepage from field laterals; evaporation from the fields also canals and laterals; seepage downward from the fields. Added to this is the guilt of wilful or careless waste. The heavy loss by seepage in light soils may in part be overcome by the application of no more water than is needed to fill the soil within reach of the plant roots. It is folly to fill the soil where none of it can be recalled. Some of this is hard to control but that lost through evaporation could largely be saved by a little care. The Arizona Experiment Station in a late bulletin (No. 88) gives the following methods available to the farmer, for preventing losses by evaporation.

1. Deep plowing. A shallow seed bed underlain by packed soil tends to cause a high evaporation loss. From seven to nine inches of soil should be turned over by the plow.

2. Cultivation. In the case of crops planted in rows, such as corn, the ground between the rows should be cultivated as soon as possible after each irrigation. In the case of orchards, the ground should be furrowed just before irrigating and cultivated just afterward. If the furrows are six inches in depth, one may expect to save 60 per cent or more of the loss which would occur without the mulch. Even alfalfa needs cultivation at least twice a year, and particularly after the soil has been packed by winter pasturing.

3. Increase in soil fertility. It is difficult to make a mulch when humus is lacking. A fertile soil takes water readily and, if cultivated, retains it with comparatively little loss by evaporation. Straw should be spread on the ground and plowed in. Weeds, trash, and perhaps a green manure crop can be utilized to improve the fertility. All stable manure should be spread and plowed into the soil.

4. More thorough and less frequent irrigation. This practice, besides saving water, tends to establish deep root feeding, while frequent light irrigations encourage shallow roots. For alfalfa one irrigation per cutting is ample except for sandy soils, where two lighter irrigations are preferable.

5. Irrigation at the right time. Irrigate heavily before planting, and withhold water after the planting for a considerable time. In the case of alfalfa, irrigate about a week before cutting. This will supply the water when it is most demanded for plant growth, and after cutting, the ground being still moist, the new crop will spring up quickly and shade the ground. Wheat should be planted in thoroughly irrigated ground, and, with the aid of good winter rains, no irrigation is needed until the boot or flower stage. Cotton should be irrigated sparingly in the early stages of growth.

6. Irrigation at night. Evaporation is much restricted in the night compared with the day time. It is a great mistake to shut down pumping plants each evening.

7. Elimination of weeds. The waste of water to raise weeds should be included with evaporation losses. Weed farming is unprofitable.

8. Windbreaks. They should be planted along the ditch banks and the road sides. Every farmer should raise his own fence posts and fire wood. Wind movement in the Salt River Valley is greatly reduced by the long rows of magnificent cottonwoods with which the landscape is checkered. The nearby fringes of fields require additional fertilization, but tbe net result of the windbreaks is beneficial.

JUNE DROP

Dr. J. Eliot Coit of the college of agriculture, University of California, writes:

"I am just now beginning a tabulation of the results achieved by orange growers in controlling the June drop by planting summer cover crops. We are sending circular letters to all whose addresses we can secure, but there will be many whom we will never hear from. I wish there was some way we could prevail on people who have made trials to write to us of the results, whether successes or failures. We hope to make as complete a tabulation of results as possible, and the results should be ready for publication the first of the year if not earlier."

If citrus growers could realize the real value of cooperation in securing

Since 1902

Pomona DUPLEX-PLUNGER Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right" Irrigation Gates and Valves

PRICES RIGHT-QUALITY RIGHT
SEND FOR BOOK C.

POMONA MFG. CO.
POMONA, CAL.

The New 16 Valve

Twin City Tractor

Pays Big Dividends

For the first time in the history of the tractor industry, the 4 cylinder, 16 valve engine (valve in head type) is now applied to a tractor. The TWIN CITY 12-20 with its 16 valve motor actually develops 25 per cent more than its rated horsepower.

This new 12-20 is a light weight tractor that will out-pull, out-last and out-dividend other tractors of equal rating.

Not built down to a price, but built up to a fixed ideal—to do the work assigned to it better than it has ever been done before.

The highest grade tractor will unfailingly prove the least expensive and pay the biggest dividends.

Frank Renstrom Co.
DISTRIBUTORS
Van Ness at Golden Gate
San Francisco, Cal.
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PIPE

10,000 FEET OF NEW AND SECOND-HAND PIPE AND CASING

PE—Practically all sizes from ⅛ to 15 inches.
ASING—Practically all sizes from 3 to 14 inches.
l pipe and casings have good threads and couplings on each joint.
VETED PIPE — 4 to 12 inches, as good as new. We also carry valves and fittings.
MAIL ORDERS GIVEN PROMPT ATTENTION
Write, phone or wire for quotations.

Adams Pipe Works
ay and Mateo Sts. Los Angeles, Cal.

To keep thoroughly posted subscribers should read ery advertisement in the California Cultivator umns.

and in giving information as well as in marketing products a great increase in production would be secured. Busy people appealed to to increase production in order to save hungry people are inclined to put off answering letters or requests such as the above, and once put off, always put off, at least nearly always. We wish subscribers to the Cultivator would contribute more liberally of their experiences and aid in gathering together definite and positive information in cultural practices.

THE ECONOMIC LOSS FROM THE MOSQUITO

California owes a large part of her envied reputation among the states to her agriculture and fruit growing industries, and there is possibly no greater source of loss to the farmer and fruit grower than that occasioned by the inroads of insidious malaria, carried and disseminated by the mosquito. This is according to report just sent out by Mr. Hecke's department at Sacramento.

It has been proved that this one feature is largely responsible in retarding the more rapid development of the Southern states wherein, favored by soil and climatic conditions, greater results should have accrued. The actual losses in money from lost time, liability and depleted energy, due to active and latent malaria, are almost beyond the powers of computation.

The approved line of attack to be employed in combating the mosquito is that of oiling, draining or filling in ponds and ditches in which the mosquito breeds.

It is not intended to overemphasize the value of natural agencies such as bats, birds, toads and dragonflies in mosquito repression, for there is no evidence at hand to prove that they materially lessen the number of mosquitoes or modify the degree of malaria in a given locality.

It should be remembered that the mosquito larva lives only in water, and that as small an amount as a teaspoonful in a broken crock or tin can will furnish one domicile in a short time with enough mosquitoes to make the night hideous, as well as involving the danger of sharing your neighbors' malaria through infection. A little oil on the stagnant pond or in the rain barrel will work wonders for when the mosquito larvae rise to breathe the film of oil cuts off their air supply and they die. Figures showing losses to the American nation through the inroads of malaria carried by the mosquito appear so extravagant as to be almost unbelievable. It has been said that the present swarthy dark haired Greek is an example of the insidious working of malaria over a period of several hundred years, for we are instructed by history that the ancient type of Greek was fair haired and light complexioned, whereas the present day type represents that most resistant to the inroads of disease, hence the survival of the strongest.

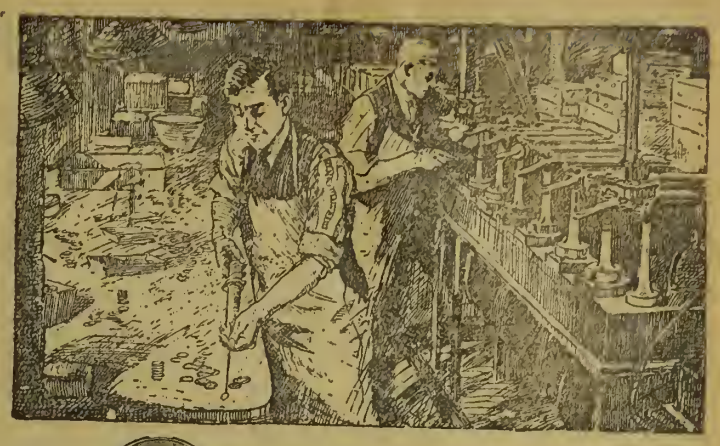
REMARKABLY FINE PRUNES

We have just seen and tested fresh specimens of the "Coates French Prune 1418". It is a remarkably large prune, 10 of the fresh ones weighing a pound (and after some days from the tree), and this we are assured was orchard run and not specially selected specimens. Best of all the size did not result in coarse flesh or a fruit lacking in sugar. On the other hand it is a fine textured sweet fruit. Mr. Coates writes: "The sample is the ordinary orchard run, a remarkable feature in this French prune sport being the almost absolute uniformity in size of fruit. The comparative test, in an orchard of 1000 trees, with this prune in alternate rows with several other types of French, proves conclusively all that is claimed for it. D. W. Strickenbery, Manager Sawyer Drying Plant, reports that it dries even better than the ordinary French prune, being wonderfully firm and heavy. In an orchard this year it bore much more heavily than any other type of same age."

BACK TO NATURE

Old Father Hubbard went to the cupboard
To get his poor self a drink,
But as he drew nigh, the country went dry,
So he got him a drink at the sink.
—Pittsburg Post.

WALTHAM THE SCIENTIFICALLY BUILT WATCH AND THE FOREIGN BUILT WATCH



Know Something About the "Works" in the Watch You Buy

IF you open your watch and examine its mechanism, you will find it consists substantially of two supporting plates, between which is mounted a gearing of meshed wheels to take care of the movement, recording time. This is called the train, which we will speak of in our next advertisement.

The lower supporting plate in a Waltham watch is the foundation upon which every unit revolves and is fixed. It is bored with minute holes to take the pivots, screws, pinions, etc.

This lower plate is drilled and threaded by one of the most exclusive and wonderful machines ever designed by the genius of man—an exclusive Waltham invention from the master-mind of Duane H. Church.

Many operations are accomplished with such methodical, automatic regularity that one instinctively imagines that a marvelous human brain guides the extraordinary operations of this machine.

It makes every operation (and there are 141) with infinitesimal exactness to the ten thousandth part of an inch—flawless, beautiful in its complex simplicity—every plate a replica of every other plate, proving Waltham standardization to be one of the miracles of American mechanical genius.

The plate of the foreign-built watch is subject to the variations of hand process. Made to variant sizes and models without precise relation to the parts which they are to contain, which parts are made elsewhere in many homes and small shops, by hand.

No hand work could ever approximate the beautiful and flawless exactitude of this Waltham drilling and threading.

So when you buy a Waltham watch you are assured of a standardization of quality and leadership which has placed the Waltham watch on the pedestal of world dominion.

This story is continued in a beautiful booklet in which you will find a liberal watch education. Sent free upon request. Waltham Watch Company, Waltham, Mass.

Waltham Colonial A

Extremely thin at no sacrifice of accuracy
Maximus movement, 21 jewels
Riverside movement, 19 jewels
$150 to $275
or more
depending upon the case

WALTHAM
THE WORLD'S WATCH OVER TIME

Send for This Wonderful One-Man Puller

and pull your stumps 30 days FREE. One man alone handles and operates. No horses needed—no extra help required—wonderful leverage principle gives a man giant's power to pull big, little, rotten, low-cut tap-rooted stumps and brush. Patented quick take-up for slack cable. Several speeds—when stump loosens increase the speed and save time. Works in any position. Easily moved around field.

Pull Stumps Free

Single! Double! Triple Power!

Kirstin One-Man Stump-Puller

The Kirstin will clear an acre from one anchor. All-steel construction—unbreakable. Sent anywhere on promise to give puller a fair trial. If satisfied, keep puller. If not pleased, return at our expense. You don't risk a penny. Four easy ways to pay. Priced as low as $49.50. One-man style or HORSEPOWER—all sizes. 3-year guarantee, flaw or no flaw.

Big Free Book! Send for most valuable stump puller book—pictures—prices—terms—letters from Kirstin users—also full details of Special Agent's Proposition. Don't miss it! ALL FREE. Write today.

A. J. KIRSTIN CO., 226 E. Morrison St., Portland, Ore.

Shipment From nearest of following distributing points saves time and freight:
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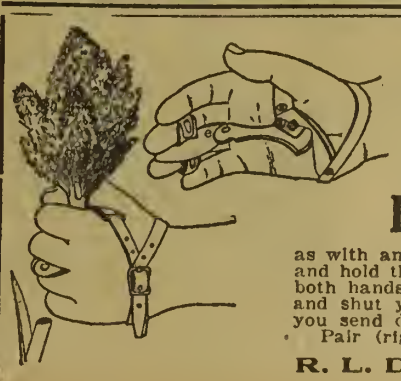
Portland, Ore.
Soo, Canada

Factory and Gen. Office, Escanaba, Mich.

Send No Money
Not even a penny! After 30 days' FREE trial you are to be the judge. Your word is final.

Half Year to Pay
Buy on easy payments if you wish. This way the Kirstin pays for itself from the fine profits it makes you.



FOR HARVESTING

Egyptian Corn

You can use both hands and cut twice as much in a day with the

David Heading Knife

as with any other instrument. You cut off the stalk and hold the head with the same hand—and you keep both hands at work, cutting as fast as you can open and shut your fingers. If your dealer cannot supply you send direct to the manufacturer.
Pair (right and left) $2.50, postpaid.

R. L. DAVID Dept. D. San Jose, Calif.

Economical Fertilization

The Beet Sugar Lime Fertilizer

costs $7.00 to $8.50 per 2,000 lbs. in bulk, f. o. b. cars points north of Rialto, south of Red Bluff. It is most readily available form of lime, being burnt, hydrated and composted in perfectly precipitated form, quick acting, immediately effective. Further, contains percentage of moist organic matter, analyzing a little nitrogen, potash, phosphoric acid, also trace of sulphur.

Stockyard Manure Mixture, $8

SHEEP MANURE, $11

largely from cottonseed, alfalfa meal and other rich feeding.

CHICKEN MANURE, $12-$13

largely from tankag, dried blood, fish and meat scrap feeding. The plant food values of manures depend upon the feed. At present cost of labor, teaming, trucking and freight, above highly concentrated manures from such rich feeding are most economical, unsurpassed plant food values. Latter prices are per 2,000 lbs. in bulk f. o. b. cars points south of Chico and north of Fresno.

A. M. Blumer

SOLE DISTRIBUTOR
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License No. J. 764
433 CALIFORNIA ST. SAN FRANCISCO

Do You Want $100? Could You Use $50? How about $25?

Well then, put on your thinking cap and submit a name for our finest brand of California Canned Fruits. Remember, we are a co-operative growers' organization and we want a striking, distinctive, easily spoken, easily remembered name, which can be registered as a trade mark.

We are now operating three growers' canneries and expect to extend our operations into every part of California where the growers want to can their own fruit and we intend to make our brand as famous as Sun Maid on Raisins, Sun-Kist on Oranges or Sun-Sweet on Prunes.

For the best name selected we will pay $100.

For the next best name (which we may use as a subsidiary brand) we will pay $50.

For the third neme we will pay $25.

If two or more submit the same name, preference will be given to the one sending in the name first.

If interested in Co-operation, write us and we will tell you all about our $400,000 canneries in San Jose, our plant in Tulare and our plans for further extensions all over California.

ADDRESS

California Co-operative Canneries

San Jose, California

Have You Seen the INTERNATIONAL DEHYDRATOR?

You are invited to inspect a Real Working Dehydrating Machine.

GET YOUR ORDER IN

We are now booking orders for next season's deliveries. Save all of your fruits and vegetables and get Dehydrated prices for them.

MAKE MORE DOLLARS.

Write for demonstration appointment.

The International Dehydrator
506 Chamber of Commerce Bldg.,
Los Angeles, Cal.

IRISES

A very large and choice collection. Send for latest price list.

THE DEAN IRIS GARDENS
MONETA CALIFORNIA

STRAWBERRY PLANTS

The kind that produce results on the Western Coast. From Santa Cruz County, California:

"Your shipment of plants came thru in about one week's time, and in fine shape."—H. H.

From Francis, Nev.:

"The strawberry plants that you shipped me arrived in good condition, and are the nicest plants that I ever saw."—J. B. C.

Good Plants and Quick Service.

V. R. ALLEN, Wholesale and Retail
Seaford, Delaware

More Exhibits at the Demonstration

Owing to the immense number of engravings made necessary by the great tractor exhibit at Los Angeles some of the photos were like passengers who would travel on Los Angeles street cars at the time of the strike—simply crowded off the steps. Those on this page were crowded off last week, but we hope will now serve to call attention to the large number given at that time. The Cultivator always tries to give as graphic report as possible of these educational events.

Union Sure Grip Tractor made by Union Tool Company, Torrance. Demonstration in charge of J. V. Smith, assistant sales manager.

Little Bear attached to cultivator adapted to work under trees. Those standing from left to right are: Walter S. Brush, Harry H. Fouch, C. B. Rhodes. The driver is Harold Brush.

The Stockton, a new tractor manufactured by the Stockton Manufacturing Company. A light weight tractor with a drawbar pull of 1456 pounds according to official tests made by the University of California.

The Toro Motor Cultivator Handled on the Pacific Coast by Douglas Boswell Company. Left to right: S. J. Clapper, president Toro Motor Cultivator Company, Minneapolis, Minn.; Bruce Mitchell, Southern California distributor Wallis and Toro tractor; Douglas Boswell, president Douglas Boswell Company.

The Merry Garden, one of the newer introductions at this demonstration. Fine for the garden and very easily guided.

Demonstration of the National Automotive School. The school occupied a large tent filled with an exhibit of itself educational.

One corner of the tent of B. Hayman and Company. The Roderick Lean Manufacturing Company of Mansfield, Ohio had a most complete exhibit of harrows. The western manager for the company, R. B. Wheeler, whose headquarters are at Salt Lake City, came to Los Angeles to install and oversee this great exhibit.

An automatic ridger and blocker. This was the first exhibition of this feature. The ridger is the same as the regular long used ridger familiar to every irrigator. The two shovels are fitted with trip connected with cord to lever at operator's foot. J. M. Cook was in charge of this exhibit.

Holt 45 Doing Heavy Duty

Land Grader and Leveler. Those standing from left to right are: J. A. Hymer, assistant Los Angeles manager; T. H. Luke, factory sales manager; H. C. Hubbard, the first man to plow, seed and harrow in one operation with a Holt Steamer; Mrs. J. L. Egbert, daughter of H. C. Hubbard; Benjamin Holt, president Holt Manufacturing Company; O. H. Eccleston, assistant factory sales manager; J. L. Egbert; M. W. Hubbard.

Roeding's Fruit Growers' GUIDE

A book that tells you what you need to know (not a catalog)—just issued.

101 pages—142 illustrations—endorsed by the horticultural press and prominent fruit growers everywhere.

You actually have to get this book in your hands and examine its contents to appreciate its real value.

Sent Postpaid for $1.00. Money cheerfully refunded if not satisfied.

Geo. C. Roeding

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FRESNO, CALIFORNIA

ARCADIAN

Sulphate of Ammonia

Don't delay making arrangements for your next year's ARCADIAN Sulphate of Ammonia that is to be used on grain.

ARCADIAN Sulphate of Ammonia is the well known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼ per cent. Made in U. S. A. Arcadian is the great American Ammoniate.

For sale by all the principal dealers.

For information as to application, write

The Barrett Company
Agricultural Department
510 First National Bank Bldg.
BERKELEY, CALIF

Teague's Thorobred

Citrus Trees

Are especially Grown for Planters desiring the Best. If better trees could be grown we would grow them. May we have your order?

The R. M. Teague Citrus Nurseries
San Dimas, California
Founded in 1880

Tizit Spray

The premier insecticide and fungicide
Since 1914

Tizit Spray Mfg. Co

1344 Willow Street
Los Angeles

Exchange members may be supplied through the Fruit Growers Supply C

GET-A-WITTE

At Reduced Price

Buy on your own terms. Save $15 to $200. Catalog FREE.

WITTE ENGINE WORKS
3100 Oakland Ave., Kansas City, Mo.
Empire Bldg., Pittsburgh, Pa.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Contract to Buy

A enters into written agreement with B to purchase a lot represented to be forty-five feet by hundred and twenty-five feet and deposits ten per cent of the purchase price under a provision incorporated in the agreement, that if the lot is not of the size stated, B will return the deposit. Upon survey, the lot is found to be forty-four and a half feet by hundred and twenty-five feet; B states that his owner is trying to buy one-half foot from the adjoining property in order to complete the transaction, and refuses to refund money. In case this one-half foot is purchased, would A be compelled to take the lot?—Subscriber, Santa Barbara.

The question is one which upon the more thorough statement of the facts can easily be seen to have two possible answers. The particular circumstances relative to the property might make an answer diametrically different from that which is here given. In the absence of any agreement providing a limited time for the investigation or making time the essence of contract, and in absence of any other circumstances, it would seem that if A receives for the price he agrees to pay, the full and exact amount of land which he agreed to purchase, that the prospective vendor has fulfilled all the obligations and could require A to complete the purchase. It will be necessary for him to do this within a reasonable time however, and if there were disadvantages arising from the part ownership of the other lot, that might decide the question the other way.

Willing of Community Property

Can a wife will one-half of the community property to her children by a former husband without consent of the present husband? If the mother should die, would the children inherit any of the property without will? I put my separate money into the purchase of property which is held in my second husband's name. He has no children. What would be the rights of my children?—Subscriber, Orland.

Under what is termed the community property amendments, the wife would be entitled to will one-half of the community property to the children by the former marriage without the consent of the husband. These amendments have, however, been rendered inactive until after the general elections in 1920 by the referendum. At the present date, therefore, the original rule governs, so that upon the death of the wife, the whole of the community property devolves upon the husband without administration. In the stated case, however, apparently there was separate property at the time of marriage, which the children would be entitled to inherit and might maintain some action to prove it was your separate property. The outcome of such action under the insufficiency of facts stated could not be given with any degree of accuracy.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Pigs Caught Cold

We had three sows to farrow 26 pigs about two weeks apart. Sows and pigs were kept in separate pens until the oldest pigs were two weeks old and were growing fine when we turned them all out together.

The pigs all piled up in a heap and did not suck their own mothers.

We separated them again the best we could but eleven of the 26 sneezed, sniffled and got lame and died. The others seem to have colds but are doing fairly well. We fed them corn, sorghum and separator milk. Some say it was feeding the corn that killed them. What do you think was the cause and what is the remedy?—Subscriber, Bryson.

The pigs must have felt cold to make them huddle together and no doubt did catch cold. Put them in a warm, dry place with plenty of straw. A good cough remedy for them would be syrup of cocillana compound which your druggist could probably furnish you. Half a teaspoon of this twice a day for a few days would probably cure them. Separator milk is not good for pigs or calves. It has air in it and causes indigestion. If the milk was allowed to sour it would be better. Corn is pretty strong feed too while they are so young. Too bad they were not kept right with their own mothers until they were five or six weeks old.

Bog Spavin

I have a large, overgrown colt a little over a year old that has a soft swelling on the front of each hock joint, toward the inside as large as a man's fist. Also some fullness on the sides of the joints. The swelling seems to be just under the skin.

Is it blood or bog spavin? Have used a standard blister without result. What would be the result if I should lance it? He got out with some loose horses several months ago and ran three or four miles which may have cause it.—Subscriber, Artois.

It is bog spavin usually seen in large, overgrown colts and caused by overexertion just as you describe in your colt. Do not think of opening it. It is an oversupply of joint oil and you might about as well shoot him as to let out the joint oil.

Do not overfeed him. Let him get a little thin and harden up. He must have some exercise but not be allowed to overdo.

Blisters and liniment are useless. It will absorb in time and a little iodide of potash internally will help.

Get your druggist to prepare a solution of three ounces of the iodide of potash in a pint of water and give a teaspoon of the solution in the drinking water or on a little feed once a day. This may seem to be a small dose but it is enough.

Closed Milk Duct

I have a cow that has a growth in her teat that feels like a sack that interferes with the flow of milk. The veterinary opened it and the milk flowed freely but now it seems to be closing up although I have used a milk tube to open the hole. Is there any help for it?— Subscriber, Escondido.

There is very little more that can be done for it. Sometimes in healing, the parts that have been cut will draw together more than we want them to but there is no help for it but to cut them again and then they may contract more than before. You might try injecting about a teaspoon of the tincture of iodine into the teat once a day after milking. That would have a tendency to absorb the thickening. Get along without the milk tube if you can as that irritates the parts and keeps up the swelling.

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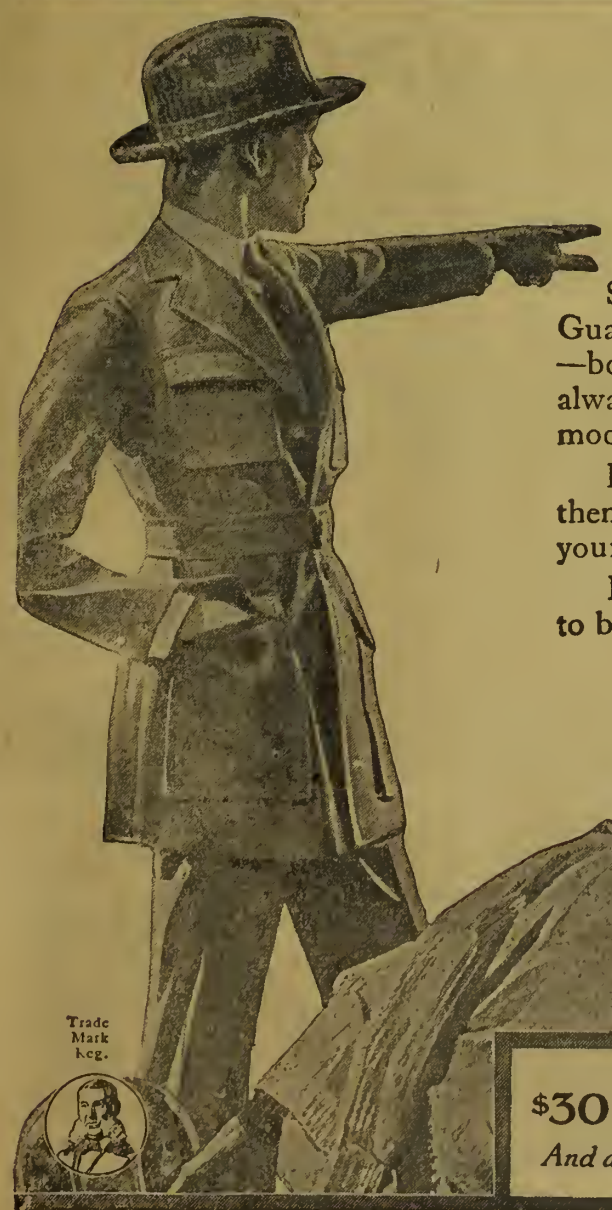

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This Month in the Vegetable Garden

Northern California

By A. R. Gould

As was the case last year we were favored with slight rains last month which helped out and acted as a gentle reminder that we were getting near to the wet season which we all hope will give us an above-the-average rainfall, which should bring us great prosperity. Seed collecting from selected types, harvesting root and other crops and preparing plots for next season are the most important duties for this month. In the preparation of plots for the coming season it will be a wise plan to secure farmyard manure in quantity and trench deeply and any decomposed vegetable matter can also be used with advantage. This added to the soil makes all the difference as this organic matter increases the water-holding capacity of the soil which is an all important matter to us in California. The careful study of soil conditions is essential and when we take into consideration the fact that certain organisms which include bacteria are busy working in the soil to keep in circulation the plant foods especially nitrogenous compounds we must do our share to assist. Soil bacteria are the gardener's best friends, they have the power of fixing gaseous nitrogen from the air and changing it into protein, other bacteria then attack the protein and change it into nitrites and so the process goes on in a very wonderful way. Our unseen friends are busy while we sleep improving our soil conditions and as many of the valuable food elements are taken out of the soil by our crops we must return something to aid in the work of reconstruction. Hence vegetable refuse, green manures, etc., are plowed in the soil to advantage.

Collecting Seed

Where desirable qualities have been observed and the grower is anxious to perpetuate them seed should be saved carefully from the types required. It may be corn, melons, cucumbers, tomatoes, squash, or beans. Any of these may be taken care of this month. Keep a record of the type, etc.; it may be very useful in the future.

Peas

It will not be too early to make a sowing of some of the dwarf varieties this month. Little Marvel, Alaska, Nott's Excelsior, are all suitable for the purpose. The ground should be well prepared and the seed sown in rows 18 to 24 inches apart using one pound to 100 feet.

Beets

Thin out the crop sown last month to at least six inches apart in the row. Crowded plants give poor results. Keep the hoe or cultivator at work in the plot between the rows.

Beans

Complete the picking of this crop. The Broad Windsor and Canadian Wonder sown last month will be making headway, especially the last named. Keep these well cultivated.

Lettuce

Transplant varieties White Paris Cos and Los Angeles, sown last month, to rows or trenches well irrigated. Rows should be 18 to 20 inches apart. Big Boston and the other varieties mentioned may still be sown.

Carrots

Those sown last month will require thinning to six inches apart in the row.

Onions

Early varieties White Bermuda, Early Pearl, and California Early Red should all be sown this month and the plot must be richly manured and the surface firm before sowing. Sow in rows 18 to 20 inches apart very thinly.

Cabbage

Plant out the winter varieties we advised sowing last month, Autumn King and American Savoy. There is still time to make a sowing. Transplant sturdy seedlings to irrigated trenches 18 inches to 20 inches apart.

Radish

Winter varieties Long Black Spanish and Chinese Rose Winter should be sown in rows in a deep rich soil.

Tomatoes

Complete the picking of this crop and remove any diseased vines or fruits from the plot.

Leeks

Continue to supply this crop with liquid manure at frequent intervals.

Kale

Another sowing of this useful green feed may still be made.

Parsley

Sow Moss Curled for winter use, later transplant.

Southern California

By D. F. Reichard

This October brings us toward the close of one of the driest seasons Southern California has experienced. The highly developed water and irrigating systems have saved the market gardener but the dry farmer (one who depends entirely on winter rains to make his crops) had very short crops.

During the last 20 years such goodly supplies of water have been developed that there never need be worry about crop failures for those who have lands under pumped water systems.

The things in the garden that have not come to maturity will have to be kept irrigated and cultivated to keep up steady continuous growth. Where crops are matured and harvested, clean up the old plants and trash and burn all that cannot be used for stock feed. By keeping all old plants and litter cleaned up danger of carrying over insects and fungi is minimized. On ground that is not to be replanted at once it would be a good idea to give it a good dressing of manure to be worked in during the winter. For ground that is to be planted right away thoroughly soak even a larger space than is anticipated to be planted so that you will be sure to get it all wet well. Work it up well and thoroughly pulverize. Plant the seed or set the plants at once after the ground is put in shape so as to lose the least moisture possible. Be sure to put water at the roots of plants as they are set, to settle the dirt around the roots.

During October plant seed of Egyptian beets; Oxheart or half long carrots; Round White Six Weeks and Purple Top Globe turnips; parsnips; Early and Winter radishes and salsify in drills and when the fourth leaf is formed thin out so as to give the individual roots room to develop their natural size and shape. Spinach and lettuce are also planted this month. If the spinach is sown at the rate of an ounce to 30 or 40 feet it will not need thinning and will be ready for use in about 75 days, while lettuce must be thinned out to 10 or 12 inches apart. The small plants that are pulled up when thinning may be transplanted and will make heads about two weeks later than that grown directly from seed. Sow cabbage and cauliflower seed for plants to set out for March and April crops. Set out plants started in August, also set out plants of kale and Swiss chard for greens. Plant seed of Early White Queen and the Bermuda onions. It is advisable to sow the seeds of onions in beds and transplant them when they are about the size of a lead pencil into the rows where they are to develop. Put out garlic and onion sets this month for early spring crop.

Plant dwarf and semi-dwarf varieties of peas. The Laxtonian is a new large podded dwarf variety that will mature in eight weeks at this time of the year. The Senator or Admiral is the best semi-dwarf for this season and takes about ten weeks to mature.

The nights are now too long and cold for planting squash, cucumber, corn, melons, or pole beans. Canadian Wonder and Ventura Wonder Wax will develop in warm frostless places.

If sweet potatoes are growing in the garden harvest them before any frost touches the vines. Even the least bit of frost greatly deteriorates their quality. Winter squash and pumpkins should be gathered and stored before nipped by heavy frosts. With the first frost pull up peanut plants and turn over with the roots up and nuts to the sun to cure until they are dry.

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This Month in the Ornamental Garden

Southern California

By Ernest Braunton

In the "dead of winter" everyone desires some flowers and during the very coldest snaps of cold winters hardly any flowers are available. Even the roses freeze on the bushes and so do nearly all flowers. But there is one that endures, one that may always be depended on. Its name is not Legion, but Calendula.

The family is one of fifteen species ranging from the Canary Islands to Persia, but we are concerned with one only, and its varieites, C. officinalis, native to South Europe. It is the marygold of Shakespeare's time and more commonly known as pot marigold, but it should be called simply Calendula, its only right name. The colors range from a yellowish white to deep orange. The flower-heads are sometimes used for flavoring stews, soups, etc., but we are recommending them for flowers at times when no others are to be had. The time to plant the seed is now, or any time in the next three months. There are some fine named varieties of which Prince of Orange is one of the best. The name Calendula is from the same Latin root as our word calendar and means the same—throughout the months—and Calendula lives up to its name.

Sowing and Planting

Hardy annuals and perennials may be sown now for all will grow readily and with the first rains will develop rapidly. Some of them are: Canterbury bells, centuarea, coreopsis, larkspur, forget-me-not, foxglove, mignonette, pansy, phlox, scabiosa, snapdragon, stocks and the first lot of sweet peas.

If you have on hand or purchase plants of the following, plant them out: Calendula (easiest of plants to handle), cineraria, columbine, pansy, primrose or verbena. This is but a few of the more common, but there are many that are seasonable for October is essentially a planting month on the Pacific Coast. Dealers and growers put in their tree seeds of all kinds this month, and much transplanting is done for it is not cold enough to check growth or warm enough to cause wilting or loss of moisture through rapid evaporation. Thin out the rose bushes of all weak spindly growth and head back any very long slender canes but do not prune heavily until spring; it is too late for fall pruning.

Standard Stocks

Stocks are one of the main winter crops of flowers and may be planted now, either as seeds for later plants or the young plants now ready at the dealers may be set out for early flowers. Stocks are generally of but one form but of many shades of color. They begin with white and lean towards a yellow and stop there. But running toward red and purple or violet we have every shade possible. Next to whites the pinks are most desirable. Stocks are of easy culture and will thrive in any good soil of a friable nature. They are wonderfully hardy and produce good flowers during the coldest days of winter.

Northern California

By A. R. Gould

The dull months are ahead; at least we expect to get cloudy skies and much less sunshine than we have experienced during the last six months. But it is quite possible for us to have a good supply of bloom even in the winter and fortunately we have a wide choice. This month we plan for our winter and spring flowering subjects and the bulb season is also at hand, hence we must look through the list and get the order in. Bulbs will not be quite so plentiful this year for various reasons and it will be first come first served. The same will be true of rose bushes and many other things ornamental. The quarantine laws have shut out most of the foreign grown stock and our gardens must be maintained from home grown supplies. Whether this will put the entomologists out of business and give the nurserymen larger profits is an open question. We do know that those who plan to plant extensively should get their orders in early as there will be a large run on the stock this season. Those who plan to build a home should be careful to have their garden plan worked out to every detail. Plant only those subjects that will be suited to the locality and get the best specimens and place them correctly. There is only one time to do a thing right and that is in the first instance and if this is carefully studied mistakes can be avoided. Study well your exposure and soil conditions. If your soil appears to be poor add plenty of farmyard manure, trench your ground deeply, and prepare it thoroughly before planting. During this month many seeds can be collected, untidy flower beds cleaned off, flowering shrubs and trees manured and dug around the roots, a few subjects can be propagated by root division, etc., and lawns may be re-made and attended to. Seeds of spring flowers may also be sown.

Bulbs, General Selection

Most people are at a loss to know what to order from the bulb catalog, and many of our readers like to add each year to their collection, hence the following remarks on the best varieties may act as a guide which we trust will prove helpful. Among the most beautiful are hyacinths and there are miniatures as well as the large flowering. The former are very fragrant and known as Roman hyacinths. Best varieties are Grand Maitre, lavender; L. Innocence, pure white; Lady Derby, pink and yellow; Hammer, golden yellow. These bulbs, five in number, placed in five inch pots filled with rich soil, will make fine house plants for winter flowering, and as we advise with all pot grown bulbs, they should be placed as soon as planted in the dark for several weeks to encourage root action. A good watering at potting time will suffice. Passing to the larger type the best are Gertrude, pink; King of the Blues; Enchantress, light blue; City of Haarlem, golden yellow; La Grandesse, pure white. These may be planted one and one-half times their depth and the soil should have been well prepared with well rotted manure or a commercial fertilizer such as bone-meal. Hyacinths should be given the best care and attention and spaced four or five inches apart in the rows.

Daffodills and narcissus are among the most popular of bulbs as they lend themselves to planting in so many situations. Planting in the grass, under trees in large groups, naturally provides a wonderful display and these may be left in year after year undisturbed and under good soil conditions they increase very rapidly. The best for the feature just mentioned are Narcissus Poeticus and Poeticus Almira, also the double daffodil Von Sion, and among the singles, Leedsi and Mrs. Langtry. For general garden planting or pot culture we advise daffodil Sir Wotkyn, Golden Spur, Emperor, Victoria, and the largest of all, King Alfred. In the polyanthus group which have several flowers on a cluster the best are Soleil d'Or and Grandiflora. These may be grown in bowls of water filled with pebbles and charcoal.

Tulips come next and there are quite a number of types of these such as early tulips, parrot tulips, cottage or May-flowering tulips, and Darwin tulips which are late flowering and have long stems. They are as satisfactory as any, and we give the best as follows: Clara Butt, Erguste, Farncombe, Sanders, La Tristesse, Rev. Eubank, Inglescombe Yellow. Loveliness, and Europe, early flowering, have rather short stems but they have a range of beautiful colors and Sir Thomas Lipton, Cottage Maid, White Beauty, Ophir d'Or, and Thomas Moore are all good singles. The May-flowering are also worthy of a place and the most popular of these are Bouton d'Or, Gesneriana, Major, Picotee, Fulgens, La Reve, and Ingles-

Continued on Page 461.

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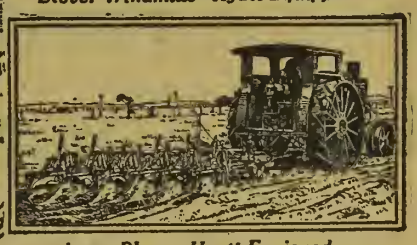

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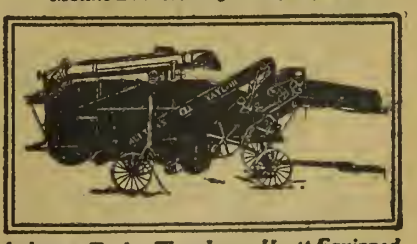

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Kings County Fair

By R. P. Royce

WHAT was declared to be one of the most successful fairs in Kings County was held in Hanford, September 22-27. Kings County has had a prosperous year, and the prosperity was reflected in every department of the fair just closed. Exhibits of fruits, grains and live stock representing the best produced in the "Home of Plenty" were as varied and fine as can be produced in any county in California and suggest why Kings County claims to be the "Home of Plenty".

They are real folks living in Kings and they don't do things by halves. The county is famous for so many of the good things that are possible in this state that they are just naturally out to earn the reputation for having the best fair in California, and when Kings County starts after any laurels that might be lying around loose other communities had better take notice.

Perhaps no fair held in California is more deserving of the characterization that it is "A fair for farmers—not fakers". At least the farmers were there and the fakers were not. Kings County turned out en masse and broke all attendance records.

The exhibits in the horticultural hall were varied and complete. Several of the farm centers made highly creditable displays in competition for the prizes offered for the best display of farm products produced in Kings County. Grangeville won first; The Island, second; Lemoore, third; and Corcoran, fourth.

The automobile and tractor and implement show would have been a credit to a fair of much larger proportions.

Live Stock

Keen interest is always manifested in the exhibits of live stock at the fair, and the show this year was a real credit. The Holsteins were represented by the herds of W. J. Higdon, Tulare; Fred D. Ross, Hanford; G. W. Clark, Hanford, and A. B. Comfort, Guernsey; Jersey cattle by the herd of J. E. Thorp, Lockeford.

In the swine department J. E. Thorp had the only exhibit of Duroc-Jerseys, while the following breeders showed Poland-Chinas: M. Bassett & Son, W. L. Haag & Son, John Bernstein, Wm. Bernstein, Fred D. Ross, W. T. Dice, H. D. McCune, C. A. Vaughn, Mrs. C. A. Vaughn, W. D. Trewhitt, H. A. Baily, and A. Buckland & Son. The Poland-China show was remarkable both as to number shown and quality displayed, some classes outranking even the state fair. The keenest competition was in the senior and junior boar pig classes and the senior yearling and senior and junior sow pig classes. M. Bassett won grand champion boar on King's Timm and grand champion sow on Big Model Maid.

J. E. Thorp was awarded all prizes on Duroc-Jerseys. Thos. F. McConnell, San Francisco, was the judge.

The Poland-China awards were as follows:

Aged boar—1, McCune on King's Massive Orange; 2, W. L. Haag & Son on Young Jumbo.

Senior yearling boar—1, Bassett on King's Timm; 2, Buckland on California Jumbo Buster.

Junior yearling boar—1, Bassett on Model Fellow Jr.; 2, Vaughn on Model Jumbo.

Senior boar pig—1, Bassett on Golden Model; 2, Dice on Big Square Orphan; 3, Ross on California Buster.

Junior boar pig—1, Trewhitt on Jumbo Model; 2, Bassett on Gerstdale California; 3, Vaughn on Sam Jones.

Aged sow—1, Buckland on Miss Big Bone; 2, Vaughn on Queen of San Joaquin; 3, Wonder Kings.

Senior yearling sow—1, Bassett on Big Model Maid; 2, Vaughn on Model Maid; 3, Wm. Bernstein on Golden Gate Queen 2nd.

Junior yearling sow—1, Dice on Young Rosehud; 2, Ross on Big Bob's Esther; 3, Dice on Miss Smooth Orphan.

Senior sow pig—1, Bassett on Big Princess Model; 2, Bassett on Big Princess 2nd; 3, Trewhitt on Trewhitt's Mammoth.

Junior sow pig—1, Bassett on Gerstdale Best; 2, Mrs. C. A. Vaughn on Queen 2nd; 3, Bassett on Gerstdale Queen.

Produce of dam—1, Mrs. Vaughn; 2, Buckland; 3, Bassett.

Breeding herd—1, Bassett; 2, Haag & Son; 3, Buckland.

Two pigs under six months—1, Mrs. C. A. Vaughn; 2, C. A. Vaughn.

Grand champion boar — Bassett on King's Timm.

Grand champion sow—Bassett on Big Model Maid.

Dairy Cattle

The show of dairy cattle at the Kings County fair this year was considered by the breeders present the largest and of the highest quality of any in the history of the fair. W. J. Higdon of Tulare won all the championships on Holsteins, and J. E. Thorp on Jerseys. The Holstein exhibitors were W. J. Higdon, Tulare; Fred D. Ross, Hanford; G. W. Clark, Hanford, and A. B. Comfort, Guernsey. The judge was P. B. Thornton, Fresno.

Following are the awards:

Aged bull—1, Higdon on King Korndyke Pontiac 20th; 2, Clark on King Juliana Korndyke; 3, Clark.

Senior yearling—1, Higdon on Model Bonnie Fohes De Kol; 2, Comfort.

Senior bull calf—1, Higdon on Prince Bonnie Walker; 2, Higdon on Prince Walker Bonnie; 3, Clark.

Junior bull calf—1, Higdon on Madrigal Sarcastic Pontiac; 2, Higdon.

Cows—3 years or over—1, Higdon on Model Bonnie Echo; 2, Higdon on Queen Pontiac Burke; 3, Comfort on La Polka Pietertje Piebe.

Two year olds—1, Higdon on Fay Tritomia Hengerveld Walker; 2, Comfort on Meg O' the Mist 2d; 3, Ross on Rossmead Pietertje De Kol.

Senior yearling—1, Higdon on Miss Bracelet Fohes Korndyke; 2, Ross on Rossmead Canary Yorha; 3, Higdon on Bianche Nudine Clothilde Walker.

Junior yearling—1, Higdon on Hengerveld De Kol Segis Cornucopia 2d; 2, Higdon on Miss Tulare Champion; 3, Ross on Rossmead Holland Dot.

Senior heifer calf—1, Higdon on Eloise Ormsby Walker; 2, Ross on Rossmead Wayne Holland; 3, Comfort on Creamelle Juliana Segis.

Junior heifer calf—1, Higdon on Pearle Segis Burke Pontiac; 2, Higdon on Miss Hertinga Pontiac; 3, Comfort.

Senior champion bull—Higdon on King Korndyke Pontiac 20th.

Junior champion bull—Higdon on Prince Bonnie Walker.

Grand champion bull—Higdon on King Korndyke Pontiac 20th.

Senior champion cow—Higdon on Model Bonnie Echo.

Junior champion cow—Higdon on Hengerveld De Kol Segis Cornucopia 2nd.

Grand champion cow—Higdon on Model Bonnie Echo.

The Glenn County Fair

The Glenn County fair, held at Orland September 22-27, stands out prominently as one of the finest examples of what well directed community effort can accomplish and serves in a large way to answer the question as to why Glenn County is forging ahead as an agricultural and live stock center. It takes enthusiasm and cooperation to get results, and they seem to have a large supply of both up in Glenn. The writer knows of no community where a finer spirit exists than was manifested at the recent fair.

The fair was started by a few men who felt that such an exposition would stimulate better methods of production provided that all agencies in the county could be brought together. This they succeeded in bringing about. At least it appeared that everyone was taking a part and playing it will. The farm bureau, the farm centers, the various live stock associations, the schools and the business interests combined to make the fair a success and a real educational institution.

The main exhibit tent was really a miniature replica of the county exhibit building at the state fair. Every foot of space in the large tent was occupied with exhibits covering the entire range of production of the county. Seven farm bureaus had assembled exhibits of a character so unusual as to call forth expressions of pleased surprise from all. The Codora center was awarded first prize, Ord was second and the Capay Rancho center was third. Professor W. L. Howard and Herman Hatfield made the horticultural awards.

The Willows and Orland schools staged complete exhibits of their work, and the keenest sort of friendly competition existed between the two institutions for the beautiful cup offered by Anchorage Farm. The cup was won by the Orland school.

The farm bureau had an extensive exhibit outlining its work, with special emphasis on the service that the

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IT HAS NO EQUAL

For the Human Body — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. DEYER.

Price $1.75 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet L.

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A fine straight one, bred right, priced right
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Member Orland Jersey Cattle Club

Venadera Herd
Offers two Register of Merit cows. Bred to Altama Interest and Jap's Perfection Owl. Due Dec. 13 and Jan. 1.
Guy. H. Miller
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All My Records
Are made under ordinary dairy conditions
The Farmers Cow is
The Jersey
Young Bulls For Sale
C. D. Hayworth
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Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
Modesto Cal.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

10 Jersey Bulls
We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.
Arden Dairy, Certified
El Monte, Cal.

Brighton Farm Herds
Registered Shorthorns
and
Berkshires—Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

marketing division is rendering. Farm Agent Heileman stated that the business of this department of the bureau amounted to $42,000 during the month of August and that four men are required to handle the work. Heileman said that during the past three months over 20 cars of concentrates were purchased for the members, at a saving of five to eight per cent.

The exhibit of farm machinery was varied and quite complete. Secretary E. S. Kirk said that the attendance was double that of last year.

As was to be expected the show of live stock was one of the outstanding features of the fair. Glenn County has made rapid progress as a live stock center and the growth of the industry was reflected in the well filled barns.

The Orland district is noted for the many high class herds of Jerseys and the exhibit was in every way in keeping with the standing of the breed. A feature of the show was the winning made by M. Fortini, whose herd of three proved quite invincible in the female classes. Several years ago Fortini purchased a heifer from the Embree herd that was dispersed at Orland. This heifer, Noble Peer's Jewel, has quite a show record, having been grand champion at the California state fair in 1914 and at the Oregon and Washington state fairs the same year. She is the dam of the sensational junior champion at the 1919 California state fair, Jewel of Tintagel. She was made champion Jersey female and later was declared the winner of the prize offered for the best cow of any breed on the grounds. Dr. H. W. Hand made a splendid showing with his Keep On herd and was the largest exhibitor.

The awards follow:

Exhibitors: Dr. H. W. Hand, Orland; M. Fortini, Orland; W. G. Gurnett, Orland; John Button, Orland; C. A. Whitsett, Orland; Mrs. C. E. Barrows, Orland; Arthur Erickson, Orland; Hugh Dodd, Orland; J. N. Cook, Orland.

Aged bull—1, Nelson on Dairy Maid's Gay Prince; 2, Cook; 3, Gurnett.

Two year olds—1, Erickson on La Creole Oxfords Ganick; 2, Hand; 3, Button.

Junior yearlings—1, Whitsett on Raleigh's You'll Do.

Senior bull calf—1, Hand; 2, Whitsett; 3, Button.

Junior bull calf—1, Hand on Jolly Boy.

Aged cow—1, Fortini on Noble Peer's Jewel; 2 and 3, Hand.

Three year olds—1, Hand; 2, Erickson; 3, Barrows.

Two year olds—1, Hand; 2, Dodd; 3, Hand.

Senior yearling—1, Fortini; 2, Whitsett.

Junior yearling—1, Hand; 2, Button; 3, Gurnett.

Senior heifer calf—1, Fortini on Jewel of Tintagel.

Junior heifer calf—1 and 2, Gurnett; 3, Hand.

Senior champion bull—Dairy Maid's Gay Prince; reserve, Erickson.

Junior champion bull—Jolly Boy; reserve, Whitsett.

Grand champion bull—Dairy Maid's Gay Prince; reserve, Jolly Boy.

Senior champion cow—Noble Peer's Jewel; reserve, Hand.

Junior champion—Jewel of Tintagel; reserve, Hand.

Grand champion—Noble Peer's Jewel; reserve, Jewel of Tintagel.

The J. S. Gibson Company of Willows made an extensive showing of Holsteins and had easy sailing in all classes except that for two year old bulls, which was won by Guy O. Williams.

For the first time in the history of the show Shorthorns were on exhibit. During the past year a number of new herds have been started in Glenn County as a result of the public sales held by the Butte City Ranch, and it is predicted that within a few years the showing at this fair will be one of the important events aside from the larger shows. O. L. Raper had the champion cow and Dr. Theodora Purkett had the champion bull. Butte City Ranch showed the winning senior yearling heifer that was also reserve grand champion. The same firm exhibited the champion steer. This steer made quite an impression on the cattlemen; he was sired by Victor Stamford and out of a scrub dam, and the result of this first cross told a story that was not hard to grasp and pointed out the possibility of improving the cattle stocks of this state through the use of pure bred bulls.

George Clark made an exhibit of Red Polls.

Professor J. I. Thompson judged the beef cattle and Professor C. V. Castle passed on the dairy breeds.

The swine exhibit included Berkshires, Poland-Chinas, Duroc-Jerseys, Hampshires and Chester Whites.

Anchorage Farm, Orland, was the only exhibitor of Berkshires, but this well known breeding establishment

Continued on Page 453.

THE NEXT BIG SALE OF
Kings County Poland-China Breeders Association
will be held in
Hanford, Saturday, Oct. 11, 1919
80 Bred Sows and Gilts
In this sale some of the best Poland-Chinas on the Pacific coast will be sold.
Don't Forget the Date

IT IS HARD
to find two greater sires than
Matchless Big Bob and Lakeside Defender
In any herd of Big Poland-Chinas. From our herd of large sows we are developing a fine lot of spring pigs, some of which we will sell reasonable and guarantee satisfaction. Write for particulars.
Geo. V. Beckman & Sons, Lodi, Calif.

Big Model Fellow
The boar the judge could not fault. At State Fair he was 1st senior yearling and reserve grand champion boar. Notice his length, his height, his smoothness and how he stands on four good feet. This boar is all boar.
J. F. McSwain, Merced, Calif.

Wakeen Herd
The home of the Grand Champion Poland-China boar of California. Young stock by King's Big Bone Leader is limited—get your order in early.
Les McCracken Ripon, Calif.
Bred Sow Sale in October

COME TO THE
Poland-China Ranch for your Big Type Polands. These are the only kind we have and satisfaction goes with each sale. Inspect our herd boar BLUE VALLEY MODEL, then you'll know the reason for our success.
Poland-China Ranch H. B. Peake Mgr. San Bernardino, Calif.

Prize Winning Boars
Just a few—very few—left, of top young boars. I was the largest winner at State Fair. I am breeding Poland-Chinas that our best judges say are the right kind. Get one of these now. Let me describe one to you.
J. F. LEHMAN LODI, CALIF.

Big Type Poland-Chinas
that are strictly big type. Big type sires—big type dams produce for me real big type animals. Usually sold down close but frequently have an exceptionally good one for sale. It will pay to keep in touch with me.
Eugene Miner Lodi, Calif

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We make a specialty of furnishing dairy cows and beef cattle registered and grades and are prepared to carry liberal time loans on such stock.
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GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

Economy Stock Powder
will keep your pigs in condition by acting on the liver, kidneys and blood. Will keep the stomach sweet, expel worms, aid digestion and prevent white scours and thumps.
Send for a free sample and our booklet "Economize Your Farm."
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SHENANDOAH, IOWA

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

The Los Angeles Livestock Show

Horse lovers and racing enthusiasts from every section of the United States are expected to be in attendance at the Los Angeles Livestock Show, which will be held in that city from October 18 to 26, as the result of the high class equine display and race meeting that has been arranged under the direction of Judge Ed. R. Smith, the veteran turfman.

In addition to the California horses, which include representatives of the most famous stables in San Francisco, Santa Barbara, Los Angeles and San Diego, Judge Smith has announced that he has received nearly 100 entries from Lexington, Ky., Butte, Mont., Winnipeg, Can., Calgary, Can., Walla Walla, Wash., Gresham, Ore., and Salem, Ore.

The entry lists in the livestock departments of the big show closed September 20, with more than enough entries to crowd the spacious barns and stalls at Exposition Park, to overflowing. The horse show lists will remain open until October 1, and the dog show entries until October 11. The dog show will be conducted by John Bradshaw, the noted canine expert, who has directed some of the most elaborate events of the kind in the country.

Following is the list of livestock and horse entries received by C. R. Thomas, secretary and general manager, to date:

Fred H. Bixby, Long Beach, horses and cattle; S. H. Bowman, Los Angeles, Saanen goats; O. H. Brandt, Sonoma County, Clydesdale horses; Grant A. Brown, El Monte, Jersey cattle; I. M. Burdick, Glendale, Toggenburg goats; Burr Farm, Los Angeles, Holstein cattle; Caledonia Farms, San Francisco, Shorthorn cattle; George Junior Republic, Chico, Duroc hogs, Holstein cattle; Calla Grove Farm, Manteca, Hampshire sheep; Congdon and Battles, North Yakima, Wash., Aberdeen-Angus cattle; Mrs. F. M. Connor, Pasadena, Duroc hogs, Berkshire hogs; L. A. Denker, Saugus, Hampshire hogs; Thomas B. Dibblee Estate, Santa Barbara, Shorthorn cattle; W. H. Dupee, Santee, Guernsey cattle; Fairbanks Ranch, Redlands, Guernsey cattle; Archie E. Ford, Hawthorne, Nubian goats; Falfadale Farm, Perris, Duroc hogs; Frampton Brothers, Artesia, Holstein cattle; C. J. Gilbert, Lancaster, Hampshire hogs; T. S. Glide, Davis, Shorthorn cattle; Gordon and Langdon, Perris, Hampshire hogs; Donald H. Graham, Lancaster, Duroc hogs; Robert H. Gudgeon, Santa Barbara, saddle horses; Hall Brothers, Perris, Percheron horses; F. L. Hall, Perris, Berkshire hogs, cattle, horses; J. L. Hall, Lomita, Poland-China hogs; E. L. Hass, Downey, Jersey cattle; Will Henn, Kansas City, Hereford cattle.

Hereford Corporation of Wyoming, Cheyenne, Hereford cattle; J. T. Hoggins, Fullerton, Toggenburg goats; A. B. Humphrey, Escalon, Guernsey cattle, Berkshire hogs; Minnie B. Kiggins, El Monte, Toggenburg goats; Emma Kraft, Los Angeles, Anglo-Nubian goats; L. Leest, Van Nuys, Duroc hogs; John N. Linden, Los Angeles, Toggenburg goats; Thaddeus Lowe, South Pasadena, saddle horses; George I. Lytle, Perris, Hampshire hogs; John E. Marble, South Pasadena, saddle horses; James Marwick, Santa Barbara, Percheron horses, Guernsey cattle; A. McMinn, Phoenix, Ariz., Ayrshire cattle; Merritt and Bowers, Tulare, cattle and horses, Shetland ponies; J. Henry Meyer, Watsonville, Ayrshire cattle; Keystone Ranch, Lankershim, Duroc hogs; C. D. Miller, La Crescenta, Nubian goats; Belle F. Miller, La Crescenta, Nubian goats; M. L. Montgomery, Simi, Poland-China hogs; E. Avery Newton, Los Angeles, Duroc hogs; J. Francis O'Connor, Santa Rosa, Berkshire hogs; D. H. Ogden, Alpine, San Diego County, Hereford cattle; Pacheco Cattle Company, Hollister, Shorthorn cattle; Mrs. L. O. Rhodes, Pasadena, Toggenburg goats; Margaret E. Rock, Santa Barbara, riding ponies; C. T. Thompson, Bishop, Duroc hogs; J. E. Thorp, Lockeford, Duroc hogs, Jersey cattle; J. E. Wherrel, Riverside, Jersey cattle; Winsor Ranch, Bonita, Duroc hogs; A. J. Stalder, Riverside, Holstein cattle; Charles W. Winter, Alhambra, horses; W. B. Wilson, Lankershim, Toggenburg goats; University of California, Davis, cattle, sheep and hogs; Ireland Ranch, Los Angeles, Duroc hogs; Hewitt Brothers, Van Nuys, Duroc hogs; M. and A. L. Bassett, Hanford, Poland-China hogs; Conejo Ranch, Newberry Park, Hampshire hogs; Duroc hogs, Hereford cattle; Santa Anita Rancho, Santa Anita, Holstein cattle, Percheron and Arabian horses, Thoroughbred horses, jacks and jennets.

Probably no sales attract a larger number of buyers than do those held by the Kings County Poland-China Breeders' Association. Their eighth semi-annual sale of bred sows and gilts will be held in Hanford Saturday, October 11. In this sale will be included a few top boars, as it has become a custom to make such an offering as there are always a few buyers in attendance looking for good sires. The sows and gilts will be bred and every sow or gilt is guaranteed a breeder.

Can an inexperienced man run a billion dollar meat business?

Under the proposed Kenyon bill the packing industry would be placed at the absolute command of a government official who would probably be without practicable experience.

The packers have never been able to hire enough brainy executives of life-long experience to do the work and make the decisions this one man would have to make.

This political appointee will have the privilege of experimenting—with other people's money.

He can try out schemes that may ruin the stock-raising industry—because if the packers suffer, so will the country's livestockmen.

He is to be placed despotically in power over property owned by thousands of stockholders—with the owners getting the privilege of paying for the losses that may occur.

Is this fair to a business it has taken fifty years to build up? Fair to thousands of people who have invested their money? Is it safe, too, for the live stock industry to have the business tampered with by an amateur?

Swift & Company, U. S. A.

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San Diego Hog Show

The big livestock feature at San Diego County fair last week was the hog show. The Winsor Ranch Durocs were there to fill all classes; W. Moore of Fallbrook also showed some fine Durocs; Stirling Spotswood Smith of La Mesa likewise got into the money about right in several classes with his big-type Durocs; C. K. Mitchell & Son of San Diego showed one of the great senior boar pigs.

In the Poland-China section competition centered in two outstanding exhibits; that from the Cloverdale herd at Escondido and that from the County Farm herd. These were the modern day big-type Polands, but a few classes only were filled.

Ringside comment would indicate that next year's swine exhibit at this fair will be three or fourfold in numbers the size of the present one. Mr. R. K. Walker of Winsor Ranch authorizes the statement that there was a larger and keener interest centered in the swine exhibit at San Diego than that shown at Sacramento and Walter T. Gatton, who tied the ribbons at San Diego, emphasized the fact that the aged sow class in Durocs at San Diego outclassed that at Sacramento. The senior boar pig class was likewise a hot show.

Following are the awards in Duroc classes:

Aged boar—1, Winsor Ranch on Winsor's Giant Orion; 2, Winsor Ranch on Great Model.

Senior yearling boar—1, Winsor Ranch on Golden Defender.

Junior yearling boar—1, Moore on Long Model Defender.

Senior boar pig—1, Winsor on Top Sensation 3d; 2, Smith on Pathfinder's Orion; 3, Mitchell on Mitchell's Great Model.

Boar under six months—1 and 2, Winsor on Model Sensation 2d and Model Sensation 1st.

Aged sow—Winsor on Model Defender Lady; 2, Moore on Defender's Ohio Maid; 3, Winsor on Great Lady.

Senior yearling sow—1, Winsor on Miss Pathfinder 12th.

Junior yearling sow—1, Winsor on Model Defender Lady 1st; 2, Winsor on Model Defender Lady 2nd.

Senior sow pig—1, Winsor on Golden Sensation; 2, Smith on Solano Wonder; 3, Winsor on High Sensation Lady.

Sow under six months—1, Model Rose; 2, Model Rose 2d.

Senior champion boar—Winsor's Giant Orion.

Junior champion boar—Top Sensation 3d.

Grand champion boar—Winsor's Giant Orion.

Senior champion sow—Model Defender Lady.

Junior champion sow—Golden Sensation.

Grand champion sow—Model Defender Lady.

Sudan Grass Experiments

Extensive experments for the purpose of determining the relative value of Sudan grass as a forage crop for swine are now in progress at the University of California Farm, Davis, where the grass is being pasture-fed to swine for purposes of comparison with cowpeas, soy beans, and honey sorghum. Comparisons on non-irrigable lands are being made also with the grass as a substitute for alfalfa. Alfalfa is the ideal forage crop for swine where irrigation water is available.

Sudan grass was obtained by the United States department of agriculture from Sudan, Egypt in 1909. Closely related to the cultivated sorghums, and like them an annual, Sudan grass in general appearance resembles Johnson grass except that it lacks the undesirable feature of the underground root-stalks. Reports on the presence of impurities in Sudan grass seed, including Johnson grass, may now be had from the branch seed laboratory of the United States department of agriculture, at the college of agriculture of the state university in Berkeley.

Under favorable conditions two or three cuttings of Sudan grass may be had. The yield varies from one to eight tons of cured hay per acre, dependent upon the length of the frostless period, the temperature, altitude, soil and amount of available moisture; either by natural precipitation or by irrigation. It will grow in a wide range of soils from sand to clay, but prefers a rich, well-drained, sandy loam.

The seed may be sown broadcast or drilled, but should not be put in the ground until damage by frost is past and the soil has become thoroughly warm. After seeding it takes from 75 to 80 days to secure the first cutting, about 45 days more for the second cutting, and fifty days more for the third.

The yield of seed has been found to be quite variable, according to the character of the soil, the supply of moisture, and the general seasonal condition for growth. A seed crop can be procured in from 95 to 100 days. Yields at Davis have ranged from 95 to 2030 pounds per acre, but where one seed crop is obtained, 1000 pounds or more may be considered an excellent yield, while an average production will probably range from 600 to 800 pounds per acre.

Sudan grass is easy to grow and handle, grows during the summer, gives large yields, and is said to be well liked by stock.

DUROC BREEDERS ORGANIZE

A meeting of breeders interested in the breeding and development of Duroc-Jersey swine in San Fernando Valley was held at Van Nuys on September 17, according to prearranged plans on the part of all concerned. There were less than 16 persons present and ready to become charter members. In the valley proper there are now from 25 to 30 breeders of this popular breed of swine, and it is believed that this community holds the record for interest displayed in the improvement of the Duroc-Jersey hog in this state.

The officers of the new association are J. C. Craig, Van Nuys, president; J. L. Stevenson, Van Nuys, vice president; and Dr. M. Creamer, Owensmouth, secretary-treasurer.

Those taking part in the meeting were: J. C. Craig, Van Nuys; L. R. Hitchcock, Van Nuys; G. W. Nance, Van Nuys; Dr. M. Creamer, Los Angeles; L. W. Serrell, Van Nuys; N. W. Grahn, Owensmouth; C. F. Seccombe, Van Nuys; Dect & Mourner, Van Nuys; Hewitt Bros., Van Nuys; E. F. Meyers, Lankershim; J. L. Stevenson, Van Nuys; Mrs. Ross Whitley, Van Nuys; A. V. Austin, Van Nuys; T. T. Middleton, Lankershim.

BIG TULARE DUROC SALE

One of the most important transactions ever made in California Duroc-Jersey circles was closed last week when a number of breeders in Tulare County sold to the Boston Land Company of Henrietta over 231 head of pure bred Durocs. Included in the lot were 90 fall pigs and the entire lot brought over $15,000. R. C. Sturgeon of Tulare, secretary of the Tulare County Livestock Association, and a director of the county Duroc-Jersey association, made the selections from the following herds: Allen Thompson, Tulare, 97; D. G. Cummins, Visalia, 93; S. A. Williamson, Visalia, 13; J. W. Stewart, Visalia, 13; W. J. Higdon, Tulare, 12; R. C. Sturgeon, 3.

The sale of such a large number leaves many of the breeders sold down to a point that they will have nothing to offer for some time.

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For Water—Wine—Oil
Stock Feeding Troughs

PIPE

For Domestic Water Supply—
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Shipped on one day notice

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GRAND CHAMPION HAMPSHIRES

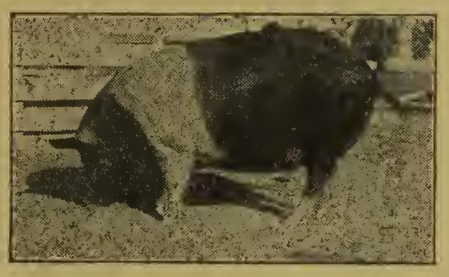
Herd Sires...

Goldmine,
Prince
and
Honest Lad

Blood Lines of
Gen. Tipton
Again,
Director,
Pat Maloy,
Sioux Queen
and
Hawkeye Lad

200 Pigs for season's trade. Bred sows and sows with litters for sale. Write or call.

Llano Vista Rancho, F. A. Langdon, Mgr; Perris, Calif.



Hampshire Headquarters

The big boar, The Harvester Again at head of herd. Home of Wavelet, the noted senior yearling, 1918; also Leading Wave 3d, Mary Pickford—both prize winners. See our show herd at Riverside and Los Angeles. Young stock for sale.

C. J. Gilbert Lancaster, Calif.

A Few Big, Roomy, Arch-backed Sows and Gilts of Choice Breeding For Sale—Bred For Fall Litters

O.U.R.
Hampshire Swine

Weanling pigs of both sexes at very reasonable prices. Visit the ranch and see these animals.

Ortega-Underhill-Rancho THOS. T. DINSMORE, Mgr. Santa Barbara, Calif.

Three fine Junior Yearling Boars of unsurpassed breeding and high individual merit.

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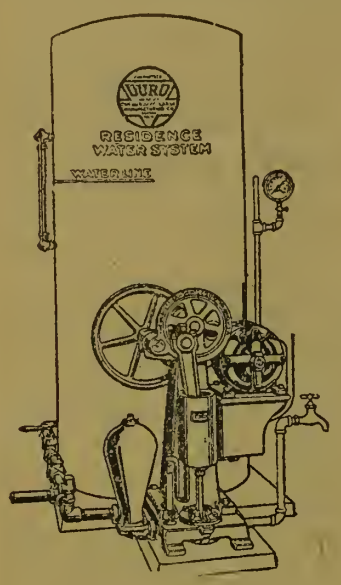
Farm and Dairy Equipment

"Less Labor" "Bigger Profits" "Better Work" "More "Comfort"

Invest some of this year's fine profits in better equipment that will not only help to produce a big season next year, but that will add comfort and pleasure to your living this year, next year, year after, and through all the years that lie ahead. We specialize in modern equipment for farm and dairy, and handle more lines of farm machinery than any other farm equipment concern on the coast. Our years of experience are at your command. Write us about any of the equipment described on this page, or any other equipment in which you may be interested. Every inquiry answered promptly and fully. WRITE TODAY.



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Just the thing to bring suburban or country home right up to date.

Pump water from wells, where depth to water level ranges from 22 to 150 feet, and supply it under pressure for all purposes about the house or grounds.

"Built like a battleship," economical and entirely automatic in operation.

Send for Duro booklet.

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We are distributors for American Standard Horizontal and Vertical Pumps—and Turbine Centrifugals.

They're the best pumps on the market. They cost a little more—but last longer and are decidedly cheaper in the long run.

American Pumps are famous for their large capacity and high efficiency.

We also have special pumps for direct connection to motors.

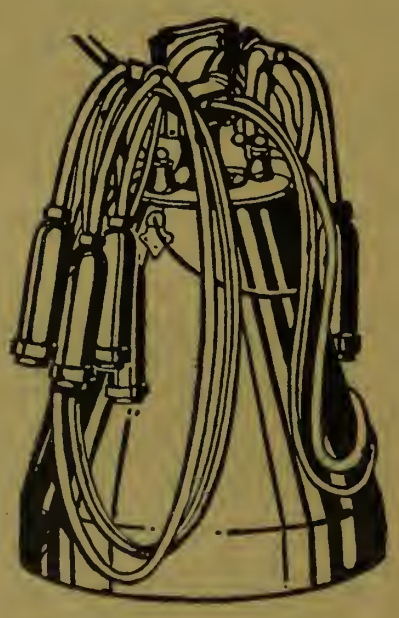
Write for Pump Catalog.

LOUDEN FEED AND LITTER CARRIERS

With a Louden Carrier, one man can do the work of four with wheelbarrows—and the man with the Louden will be less tired, at the end of the day.

That's the way to keep your help and cut your labor cost. The dairymen who make money are the dairymen who use modern equipment like this.

Send for Louden catalog and free book of barn plans.



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With a Universal outfit one man can do the work of three, thus actually eliminating the work of two men. You can solve your labor problem, save time and inestimable hard work, and do the milking better with a Universal.

Milks with alternating action, massaging and relieving two teats while the other two are being milked—the natural way. Fits any cow.

Write for Universal catalog.

Save $5 a Day While You Make Hay!

When help is scarce and high priced, and all the horses are needed in the field, the Louden Power Hoist comes to the rescue. Does the work of both a team and a man, and does it in half the time.

There's nothing complicated about the Power Hoist; it's just a plain, common-sense, sturdy machine, built to handle big loads easily, and to save time and labor in hay harvest. Can be used with any kind of power. Anybody can operate it. Try it out this season.

Write for Catalog

ALAMO Electric Light Plant

Most efficient plant of its kind on the market. No vibration. No noise. Solid, substantial, highly perfected. Will give many years of service. Write for Alamo booklet.

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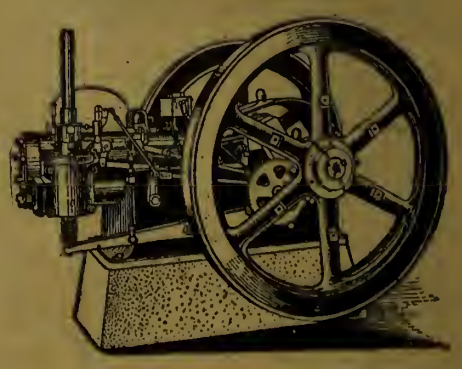

We have engines in every type and size—from 2½ H.P. to 100 H.P., operating on distillate or low grade fuel oil. Our lines include Western, Faultless, and Muncie Oil Engines. We'll show you how to get the most power and the best results at least cost—and that's what you want.

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by using Parke, Davis & Co.'s scientifically prepared

Blackleg Vaccines

BLACKLEGOIDS

The Reliable Blackleg Vaccine in Pill Form.

25 MILLION SUCCESSFUL VACCINATIONS.

BLACKLEG AGGRESSIN

(Germ-Free Blackleg Vaccine)

A Natural Aggressin

WRITE FOR FREE INSTRUCTIVE BOOKLET ON BLACKLEG PREVENTION.

Animal Industry Department of

PARKE, DAVIS & CO.

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CAUTION

Do Not Be Deceived

There is only one GENUINE O. M FRANKLIN Blackleg Aggressin (commonly called Vaccine).

Beware of imitations. You cannot afford to have anyone experiment on your animals.

Accurate use of the GENUINE O. M. FRANKLIN Blackleg Vaccine positively protects against Blackleg.

Be absolutely safe in using the ORIGINAL and GENUINE manufactured by THE KANSAS BLACKLEG SERUM CO., under the direct supervision of Dr. O. M. Franklin the ORIGINATOR.

This Seal on Every Bottle

The Kansas Blackleg Serum Company

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GUERNSEYS

196 — 368

These figures represent the average butter fat production of a grade herd in Minnesota before and after the use of a pure bred Guernsey bull. The improved herd brought the owner prosperity, — the original, only drudgery Write to breeders for descriptions and prices and send for our free booklet "The Grade Guernsey."

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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states References The leading breeders in the state Write or wire for dates and terms

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1501-A-8 South Main St

Los Angeles Calif

HOLMES STOCK FARM

Registered Holsteins of best breeding Young bulls for sale

R. L. Holmes Modesto Cal.

THE GLENN COUNTY FAIR

Continued from Page 449.

had a splendid showing, headed by the state fair grand champion, Natomas Baron Duke. This herd has the distinction of owning its own pens at the fair. A feature of the Anchorage Farm display was a miniature hog farm.

Largely through the efforts of R. J. Yates, pioneer Poland-China breeder of that county and president of the Glenn County Poland-China Breeders' Association, the members of the association had out an especially creditable showing. Because of the fact that he has sold most of the members their foundation stock, Yates very generously declined to compete for prize money, although he had an extensive exhibit. W. G. Gurnett showed the grand champion boar and Ferguson & McKaig had the champion sow.

The awards follow:

Exhibitors: R. J. Yates, Orland, not competing; Frank Reisman, Orland; W. G. Gurnett, Orland; Ferguson & McKaig, Orland; R. M. Rankin, Orland; D. H. Ward, Orland; Penfield & Penfield, Orland; Adam Lachenmeyer, Orland..

Aged boar—1, Frank Reisman.

Senior boar pig—1, Gurnett on Bob's Pride.

Junior boar pig—1, Gurnett on King Hadley; 2, Gurnett; 3, Ferguson & McKaig.

Aged sow—1, Rankin on Orphan Maid; 2 and 3, Rankin.

Senior yearling—1, Ward on Stella Chief; 2, Ward.

Senior sow pig—1, Ferguson & McKaig on Big Orphan's Pet; 2 and 3, Lachenmeyer.

Junior sow pig—1 and 2, Penfield & Penfield; 3, Ferguson & McKaig.

Senior champion boar—Reisman.

Junoir champion boar—Gurnett; reserve, Gurnett.

Grand champion boar—Gurnett; reserve, Gurnett.

Senior champion sow—Rankin; reserve, Ward.

Junior champion sow—Ferguson & McKaig; reserve, Penfield & Penfield.

Grand champion sow—Ferguson & McKaig; reserve, Rankin.

Four Duroc-Jersey breeders were in competition and the quality of their exhibits was excellent. F. D. Burr showed the grand champion boar and Hollingshead & Son were the owners of the champion sow. C. D. Bright won first on litter.

The awards follow:

Exhibitors: F. D. Burr, Orland; W. T. Hollingshead & Son, Orland; C. D. Bright, Glenn; A. W. Mudd, Orland.

Aged boar—1, Burr on Orion Model 1st.

Junior yearling—1, Bright on Uneeda Orion B; 2, Hollingshead; 3, Johannsen Bros.

Senior boar pig—1, Hollingshead on Uneeda Sensational Defender; 2, Bright; 3, Bright.

Junior boar pig—1, Mudd; 2, Hollingshead; 3, Bright.

Aged sow—1, Burr on Beauty 8th; 2, Hollingshead.

Junior yearling—1, Hollingshead on Uneeda Orion Lena 3d; 2, Burr; 3, Hollingshead.

Senior sow pig—1, Burr on Miss C. M. K. Lady; 2, Bright; 3, Bright.

Junior sow pig—1, Bright; 2, Bright; 3, Hollingshead.

Litter—1, Bright.

Senior champion boar—Burr; reserve, Bright.

Junior champion boar—Hollingshead.

Grand champion boar—Burr; reserve, Bright.

Senior Champion sow—Hollingshead; reserve, Burr.

Junior champion sow—Hollingshead.

Grand champion sow—Hollingshead; reserve, Burr.

William Hoskins was the only exhibitor of Hampshires and W. J. Beck made the only showing of Chester Whites.

Professor J. I. Thompson made all the swine awards.

Sheep and Goats

The exhibit of sheep was particularly encouraging. Glenn County boasts of having the largest number of individual breeders of Shropshires of any county in California, and while only one flock was represented, that of Guilford Farms, Orland, the interest around the sheep pens indicated that the ranchers of Glenn County are keenly alive to the possibilities of small flocks of pure bred sheep.

The famous flock of Rambouillets owned by Bullard Bros., Woodland, represented the only display of this breed. This flock won the prize offered for the best pen of four of any breed.

W. R. Graves exhibited two pens of Karrakules. Ellenwood and Ramsay of Red Bluff had a small showing of Corriedales, and another breeder exhibited specimens of the "Thribble Cross" that he has developed.

A small show of Angora, Toggenberg and Saanen goats was made by local breeders.

Professor James F. Wilson of the University Farm made the sheep, goat and wool awards.

Great Orion Sensation Jr.

offers the opportunity to breeders of Duroc-Jersey swine on the Pacific Coast to secure the blood of the world's most famous boar, Great Orion Sensation. See this great junior yearling boar at head of our show herd at Riverside and Los Angeles.

Falfadale Farm

Perris Calif.

B. H. Wilkinson, Mgr.

Great Sensation 3rd

A Duroc-Jersey senior boar pig with the largest bone, for age, of any boar in America. To carry weight we must have bone. You can put more bone in your herd through this boar. We have a few sows and gilts bred to him at a price that will return a profit to their purchaser We were big winners at the state fair. Write us for what you want in Duroc-Jerseys.

Winsor Ranch R. K. Walker Manager Bonita, Calif.

Again! Again! Again!

Uneeda Glenn Co. Herd of Duroc-Jersey Wins Grand Champion Boar on

SENSATION WONDER 1st

Also senior champion boar and junior champion boar. Come to

The Key Herd of the Pacific Coast

for your foundation stock. We have on hand a number of high-class bred sows and gilts and spring pigs. Our business has grown through our ability to sell at reasonable prices. Write us.

H. P. Slocum and Son

Willows, California

WHAT DO YOU WANT?

We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.

George Junior Republic Chino, Calif.

also Breeders of Holsteins

Butte County Herd

Of the right kind of Duroc-Jerseys. Butte's Golden Pet a 700 lb. sow. with the largest bone and best feet of any sow on the Coast. More in the herd of like calibre. Write me for young stock.

W. V. BENNETT Nord, Calif.

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam: ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—
Milk 338 days 18,849.40
Butter 866.28
At six years—
Butter seven days 34.13
Milk 532.40
At five years—
Butter seven days 28.85

She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia

Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd Put one of his young sons at the head of your herd.

Santa Anita Rancho

Anoakia Breeding Farm

Santa Anita, California

Anita M. Baldwin, Owner W. H. Taylor, Supt.

This One Is Great

Kounias Menlo Ormsby Fayne whose dam made 19 lbs. as a senior yearling and whose sire is from a 33 lb. cow. Here is a royal combination of blood lines. This young bull is for sale at a reasonable price. He is the kind you need. Full particulars on request.

Kounias Pure Bred Stock Farms

Modesto, Calif.

Expert Information

on breeding and caring for livestock, as well as the new methods being used in agriculture, will be expounded at the

Los Angeles
LIVESTOCK SHOW

Exposition Park

October 18 to 26

Horse Racing Daily Will Entertain You

$55,000 in Premiums

THIRD SALE OF
SHORTHORNS
Under the Auspices of
California Shorthorn Breeders Association
will be held at
California Building, Exposition Grounds, SAN FRANCISCO, in conjunction with the San Francisco Livestock Show, on

Thursday, November 6th, 1919
at 1.30 P.M. Sharp

30 Head Registered Cows and Heifers. 10 Head Registered Bulls

For Catalog Address **California Shorthorn Breeders Association**
222 Sharon Building San Francisco, Calif.
Auctioneer, Earl Gartin of Greensburg, Indiana

BREEDERS OF MILKING SHORTHORNS
Senior Herd Sire Oxford Duke 2nd No. 396933, a splendid type of the dairy Shorthorn
Junior Herd Sire Grand Wapsie No. 641734, sired by the 17th Duke of Wapsie
We are offering some young bulls and females of extra breeding and individuality from these sires and the choicest dams in our herd. Tuberculin tested. Write for particulars.
THE JOHN LYNCH RANCH
P. O. Box 321 Petaluma, Calif.

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When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.
George W. Bell Tulare, California

Hauser's Digester Tankage
Gives Greatest Value for Least Money
It Makes Them Fat
Hauser Packing Co. Los Angeles

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OF EVERY DESCRIPTION
Bought, Sold and Rented
BUTTRESS & McCLELLAN
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Breeding Date Book---FREE
We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.
CALIFORNIA BREEDERS SALES & PEDIGREE CO.
C. L. Hughes, Sales Manager
Sacramento Cal.

Shorthorn Sale at San Francisco

By M. C. Holman

The third sale of Shorthorns under the auspices of the California Shorthorn Breeders' Association will be held at San Francisco in conjunction with the San Francisco Livestock Show on Thursday, November 6, at 1:30 p. m. A splendid sale arena is under construction in the California Building, and ample seating facilities are being provided to accommodate a large attendance. Special committees of merit have selected the Shorthorns entered in the sale and have approved only animals possessing outstanding conformation and individuality as well as high class breeding.

The impress of the Shorthorn toward production of better quality cattle in California is beyond comprehension, and the development of this great breed continues. A recent visitor to the high Sierras was amazed at the improvement of local cattle over his prevlous visit of seven years ago and attributed this wholly to the introduction of pure bred Shorthorn sires into that locality. It behooves all those interested in the production of more and better Shorthorns, and resultingly better beef, to give their support to this sale, at least by their attendance.

Forty animals will be entered in the sale, comprising 30 head of cows and heifers and ten bulls, all registered, and tuberculin tested. Auctioneer Earl Gartin of Greensburg, Indiana, will cry the sale. Mr. Gartin handled the big Calgary, Canada, sale in 1917, with great success and is himself a breeder of no little distinction.

At the Fair

The illustration on this page gives an idea of some of the stock which will be at the Riverside fair. We do not know whether this animal is to be offered in the pure bred auction sale but without question there will be some fine top notchers in the ring. stock which will be offered at this sale has been, in practically every case, personally selected by the livestock committee of the fair. They come from some of the very best herds in the state and include animals of intensive breeding and of great individual merit. This is the initial sale and

Meet Me at the Riverside Fair

Raleigh's Lady Flossie, Jersey, average first two months after calving, 50 pounds fat. Owned by George Thomas and Sons, Arlington. She will be amongst the aristocracy at the Riverside fair, October 7-11.

Secretary Van Pelt writes regarding the sale that:

"The auction sale of pure bred live stock which will be held on the two last days of the Southern California Fair is a feature of wonderful interest and advantage to ranchers and dairymen in this part of the state. The the committee is bending every effort to make it a successful one. Pure bred stock of all breeds and kinds are included and one of the greatest sales ever held in this part of the state will be a feature of the fair at Riverside on Friday and Saturday, October 10 and 11."

Milk Producers Buy Creamery

The Milk Producers' Association of Southern California met in Los Angeles last Friday and discussed the matter of purchase of the Burr Creamery of Los Angeles. This association produces about 200,000 pounds of milk daily and the purchase of the creamery is made in order to handle the surplus and at the same time to make a start in the general plan of "producer to consumer" in order to save one profit and give better prices to the consumer and better return to producer. The capacity of the Burr Creamery is about 70,000 pounds daily though at present it is running with one shift around 35,000 pounds. While this is only about one-third of the output of the association it is thought that its purchase will give control of surplus and will be sufficient to stabilize prices and put the association on a steady footing. Though the vote was entirely unanimous, there were occasional dissenting voices as to methods of procedure after the purchase was made. The Burr Creamery people have a valuable route and goodwill but the board of directors of the association felt that the plant would invoice up to the price made, $100,000. The goodwill is practically a bonus to members of the association. The board of directors was instructed to proceed at once with the details of the transfer but it is thought that it will be January first before the new management will have entire charge of the plant.

BELLER & BORDEN DUROCS

It was last spring that Beller & Borden at Carlsbad, purchased from Hewitt Bros. of Van Nuys the big prize winning senior yearling boar, Golden Cherry 5th. Fred De Vore pronounced this to be the largest yearling boar seen on the Coast. He is a son of the noted sire, Great Model. Today Beller & Borden have 18 high class sows bred to the service of Golden Cherry 5th. Perhaps half of this number will be reserved for the home herd but a number of these crack young sows will go out as foundation stock for other herds. These gentlemen have purchased foundation blood from the noted Slocum herd, as well as from other prominent Duroc breeders. They have fine alfalfa pastures and other facilities for the proper development of useful breeding stock. It is worth while to see those young sows and the boar to which they are bred.

ROSELAWN
Shorthorns at Public Sale
Thursday, October 16, 1919

ROSELAWN STOCK FARM

H. M. ELBERG
PROPRIETOR

WOODLAND, CALIF.

The sale of some of the choicest breeding animals from this noted herd provides one of the richest opportunities yet afforded in California for the purchase of high class Shorthorns to found new herds or to strengthen herds already established.

The herd itself needs no introduction to the buying public, for during its thirty years of development and ownership in one family the excellence of its cattle and the sound business principles of its managment have earned for Roselawn a commanding position in the breed's affairs in the west.

45 Scotch and Scotch Topped Shorthorns

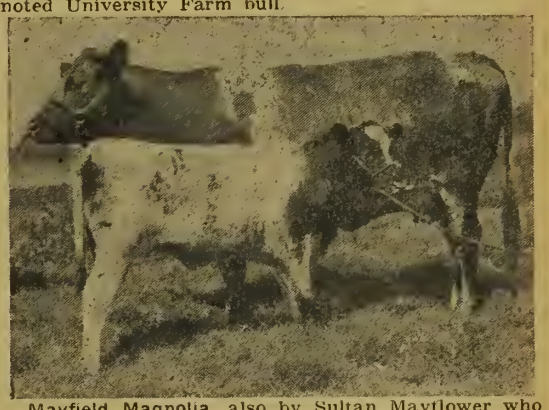
will constitute the offering in this sale, an offering that seems advisable to the owner at this time due to the settlement of an estate and the readjustment of some farm leases.

The females in the sale list are a group of notable average quality, including a large number of individuals that would be real attractions in any sale ring. Among them are MISCHIEF E 3D, the great show and breeding cow, undefeated in Canada, Grand Champion at 1918 California State Fair, and the dam of ROSELAWN CHAMPION, junior champion bull at the same show; ROSIE MAYFLOWER, an exceedingly good show prospect of rich breeding, her sire being Sultan Mayflower, the University Farm bull that sired the 1918 Chicago International champion Shorthorn steer, and the $5500 bull, California Model; MAYFIELD MAGNOLIA, also by Sultan Mayflower and selling with a promising roan heifer calf at foot by White Knight; PRIDE'S LOVELY 3D, a beautiful roan heifer of the Cruickshank Lovely family, bred to Roselawn Champion; PEACEFUL 5TH, by Golden Goods and selling with bull calf at foot by Crescent Dale; and a long list of cows and heifers of popular breeding and splendid quality. Among them are about 15 with calves at foot, and all of breeding age are in calf to Roselawn Champion or Crescent Dale. These are real foundation females.

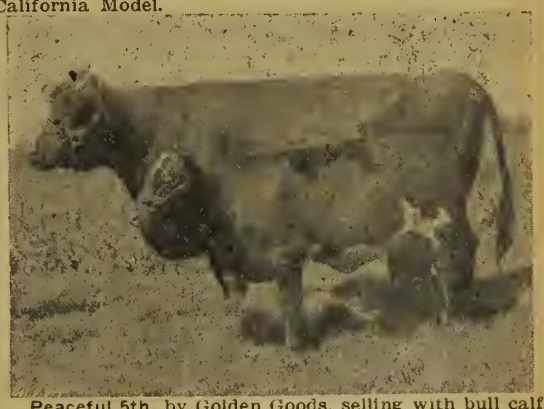
CRESCENT DALE

Mischief E. 3d, undefeated in Canada, Grand Champion 1918 California State Fair, and dam of Roselawn Champion, junior champion bull in same show.

Rosie Mayflower, one of the most promising heifers of the breed in the west. By Sultan Mayflower, the noted University Farm bull.



Mayfield Magnolia, also by Sultan Mayflower who is sire of California Marvel, champion Shorthorn steer at 1918 Chicago International, and the $5500 bull California Model.



Peaceful 5th, by Golden Goods, selling with bull calf at foot by Crescent Dale.

An Extra Choice Offering of Bulls

The exceedingly satisfactory list of bulls is headed by CRESCENT DALE who is being sold owing to the material reduction in the size of the herd. He is bred in the purple, being by Whitehall Rosedale, son of Avondale, and out of a daughter of Ruberta's Goods and the imported cow Crescent 8th. Crescent Dale is unusually smooth and thick fleshed, with a great deal of breed character, and already has a very promising lot of calves at Roselawn, a number of which will be in the sale. His combination of breeding, individuality, and proven ability as a sire stamp him as a worthy candidate for herd heading position in any breeding herd in the west. The list of bulls is completed by an especially well balanced offering of Scotch and Scotch topped individuals, presenting a most satisfactory selection for breeders and rangemen alike.

Every animal guaranteed to be a breeder. **Every animal over six months old tuberculin tested.**

Sale Begins Promptly at 1 P.M., Thursday, October 16

Catalog Free on Request

Auctioneers:
Col. Ben. A. Rhoades, Los Angeles;
Col. H. C. Cranke, Nez Perce, Idaho.

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Calif.

Clara's Dale, by Crescent Dale out of Roselawn Clara by Gibson's Goods.

Roselawn Dale, by Crescent Dale out of Roselawn 49th.

Ringleader's Best, by Ringleader, he by Ringmaster; dam, Roselawn 69th, by Gibson's Goods.

A NEW LAW

Every Dairyman should make a special effort to familiarize himself with the new State Feed Stuffs Law which becomes effective November 1st, 1919. This law was passed for your benefit, to protect you in the selection of your feed stuffs. It makes it possible for you to feed more intelligently and base the buying of your feeds on actual feeding value.

You know what you are feeding in roughage and no doubt what you should feed in a concentrate to strike the proper balance that gives a maximum milk yield.

What you want—is to know the analysis of the concentrate you feed and what simples are used in its manufacture.

You should know what kind of feed you are buying and buy a feed that will return a greater profit to you by way of increased milk yield.

Besgrade Dairy Feed is just such a feed—you can judge its real value, it comes to you tagged, showing analysis and ingredients.

Post yourself on the new feed law, passed for your benefit and also on the value of Besgrade Dairy Feed. Use the Coupon, it does not obligate you.

Great Western Milling Co., Los Angeles

Great Western Milling Co.,
Los Angeles, Cal.
Gentlemen:

Send me a copy of the New Feed Stuffs Law, also your pamphlet on Besgrade Dairy Feed containing analysis and ingredients of same.

Name.....

Address.....

.....

C.C.

Pure Hawaiian Cane Molasses

Pork Production

By actual test will increase pork production five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price.

Milk Production

One of our customers writes: "We are out of molasses and our cows are falling off in their milk badly, hence we would appreciate immediate shipment. Kindly ship us two tons more in addition."

We supply it in barrels or tank cars for shipment anywhere. Attend the California International Livestock Show, San Francisco, Nov. 1 to 8.

W. H. Young Company

Holbrook Bldg. San Francisco

When writing advertisers, mention The Cultivator.

—Photos by McCurry.

Berkshires of Quality

Four Berkshire sows recently sold to the Italian Vineyard Company, Guasti, by Sandercock Land Company, Sacramento, for $2000.

IMPORTANT BERKSHIRE SALE

W. F. Sandercock has announced the sale of four exceptionally high class Berkshire sows to the Italian Vineyard Company, Guasti, for an average price of $500 each. The sale included the following: Wilsonia Princess Laurel, sired by Laurel Champion, and a litter mate to the Barker boar, Real Type. She is bred to Baron Duke, champion at the 1917 National Swine Show, Duke's Natomas Princess, sired by Baron Duke and out of Riverby Princess 3d. She was first prize junior yearling and reserve senior and grand champion at the recent state fair. Baron Duke Princess 11th, sired by Baron Duke and out of Riverby Princess. Riverby Princess was grand champion at the P. P. I. E. Duke's Natoma Rio Rookwood, sired by Baron Duke and out of Rookwood Lady 100th. Rookwood Lady 100th was champion at the National Swine Show in 1917. The purchase of the above sows will at once place the Italian Vineyard Company in the forefront of Berkshire interests in Southern California.

Live Stock News Notes

SALE CALENDAR

Holstein Cattle
October 8, Agee Brothers, Brawley.

Shorthorns
October 16, Dr. H. M. Elberg, Woodland.

Hereford Cattle
November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine
October 7, Bassett, Ross and Crawshaw, Hanford.
October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.
October 18, Trewhitt, Vaughan and Nehis, Hanford.
October 21, Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine
October 22. Western Berkshire Congress, Los Angeles Livestock Show.

Professor J. I. Thompson of the animal husbandry department, University of California, is attending the National Swine Show at Des Moines as judge of Berkshires. Thompson is considered one of the keenest swine judges in America.

A. D. McCarty, secretary of the California Poland-China Breeders' Association, is a visitor at the National Swine Show at Des Moines. While East McCarty expects to purchase several high class sows and perhaps a boar to add to the Riverina herd maintained near Modesto by McCarty & Starkweather.

Clayton N. Slocum of H. P. Slocum & Son, Duroc-Jersey breeders, Willows, has been invited to judge all classes of swine at the live stock show to be held at Tulare October 8-11.

The Western Berkshire Congress will hold a sale of Berkshires October 22 at the Los Angeles Livestock Show. About 40 head of bred sows and gilts will be offered. The sale will be managed by Frank B. Anderson, secretary of the congress, and Ord. L. Leachman will act as auctioneer.

Announcement has been made of a Poland-China sale to be held in Tulare, Tuesday, October 21, by the Tulare County Poland-China Breeders' Association. This sale will be held in the new live stock pavilion and is the first held by these breeders. Hugh C. Shinn, secretary, states that the sale will consist of 46 bred sows and gilts and four young boars. Every animal consigned to the sale has been selected by their committee and every animal will be a worthy representative of the breed. The animals consigned are by such boars as King's Timm, King's Big Bone Leader, King of the Golden Gate, King's Gerstdale Jones, President, and Big Bone Bob, and the offering will be bred to boars of equal note.

Guy Miller of Modesto reports the following sales: To John P. Daggs of Modesto the Jersey heifer calf Naomi of Venadera, a daughter of Altama Interest, to S. D. Kee of Bodega the yearling heifer Rosalpha of Venadera a daughter of Altama Interest. To F. D. Kimball of Chowchilla the Register of Merit cow, Fern of Venadera, test 401 pounds of fat in a year as a three year old.

Castleview Ranch, Santa Rosa, re-

Continued on Page 461.

From the State Fair

Mission Chief, the precocious junior calf that won grand champion Hereford honors at the recent California state fair. Mission Chief was bred, developed and shown by John A. Bunting of Mission San Jose. He was sired by Hopeful Prince 2d and his dam was Anxiety Clarice, a cow purchased by Bunting for $590 and which has produced $4000 worth of offspring.

BIG TYPE POLAND-CHINA DAY

You Are Invited to Attend the

Trewhitt, Vaughn, Nehls

Big Sale of

Big Type Poland-China Sows and Gilts

Hanford, Calif., Saturday, Oct. 18th, 1919

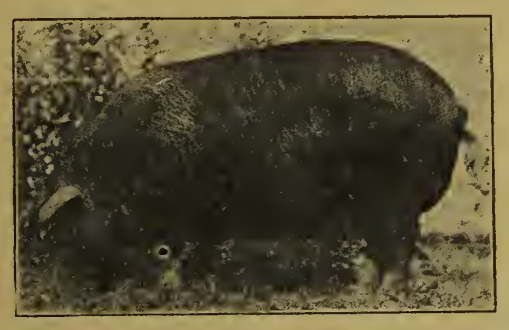
No Sale in the history of California has ever offered Poland-Chinas of such size, breeding, type and quality as you will find in this Sale. All bred to some of best Poland-China boars.

Mr. Trewhitt will offer My Giantess, by My Choice, by Big Fred out of a Jumbo Equal sow. This sow is high, long, deep, smooth, farrowed 10 last litter and bred to Model Jones by Giant Jones.

Hanford Belle, a large 700-lb. sow by Joe Wonder, has everything needed and bred to Iowa Wonder, by Big Long Wonder. 10 last litter.

E. Choice 1st, one of those big, typy sows by A. A. Wonder and bred to Iowa Wonder. You will like this sow. 9 last litter.

Another is T's Wonder by My Choice, and is one of those deep, typy, prolific sows we all want and she is bred to Model Jones by Giant Jones. 10 last litter.



THIS KIND WILL SELL

Mr. Nehls will offer 12 long, stretchy gilts, sold open, old enough to breed for spring litters and the kind that will make big sows. A combination of the blood of King's Model Longfellow, Frazier's A. Wonder and California Wonder.

Mr. Vaughn will sell Miss Orphan and Miss Orphan 2nd by Orphan Bob out of Big Bob's Beauty 2nd. These have the size and type demanded.

Sunlight Giantess and three litter sisters by Giant Jones, dam Jumbo Sunlight. Better ones don't grow. These were all purchased in the east last winter, personally selected and bred to Model Jumbo, by Walter's Jumbo Timm, from a Big Bob Wonder dam.

The above sows are just a few of those we will sell but gives you some idea of the character, approved type, prolificacy and wonderful blood lines—the greatest blood the breed affords will be found in this sale.

Don't overlook the importance of this sale of real breeding animals and another important fact, they all have good mothers as well as great sires.

Now this is the sale you have been *waiting* for, *longing* for, so make your arrangements now and attend this, the

Greatest Big Type Poland-China Sale Ever Held on the Coast

Due to the size of the offering the Sale will start promptly at 10.30 A.M. Lunch at noon. Geo. W. Bell, Tulare, is the Auctioneer.

Write for a Catalog of this great Sale to

W. D. Trewhitt **C. A. Vaughn** **G. H. Nehls**

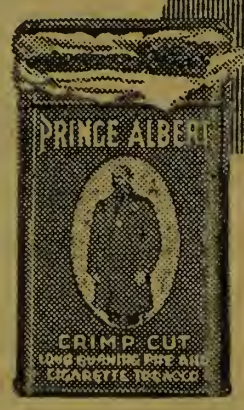
Hanford . . . California

NEVER was such two-fisted-smokejoy as you puff out of a jimmy pipe or home rolled cigarettes packed with Prince Albert! *That's because P. A. has the quality!*

Your taste apparatus certainly cannot be fooled! So, when you smoke Prince Albert and get a lot of delight *you know* you've got the big first prize on the end of your line!

Prince Albert's quality alone puts it in a class of its own, but when you figure that P. A. is made by our exclusive patented process that cuts out bite and parch—*well*—you realize why P. A. is so unlike other kinds.

No matter what your past luck has been on pipe smokes or makin's cigarettes, you put your confidence in Prince Albert for it certainly makes good every time the clock ticks.

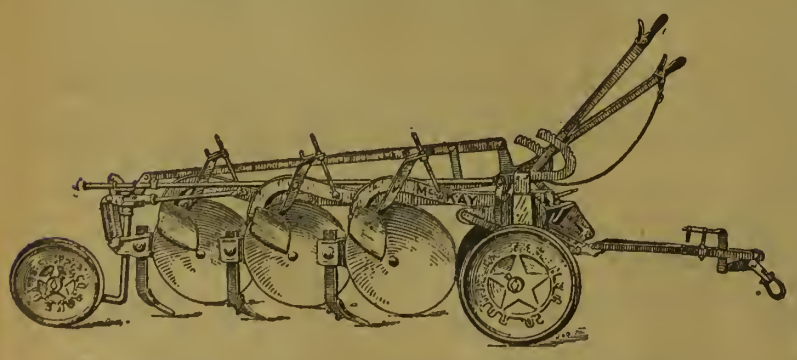


Toppy red bags, tidy red tins, handsome pound and half pound tin humidors—and—that classy, practical pound crystal glass humidor with sponge moistener top that keeps the tobacco in such perfect condition.

R. J. Reynolds Tobacco Company, Winston-Salem, N. C

The McKay Disc Plow and Subsoiler

The Sensation of the 1919 Tractor Show



Especially adapted to hard ground and difficult plowing.

No shares to sharpen—no sprung beams. If you want a real plow see our agents or write for full information.

ARNOTT & COMPANY, INC.

112-118 South Los Angeles St. Los Angeles

When writing advertisers, mention The Cultivator.

Peanut Raising

By J. W. Mills

THE peanut crop is a valuable one as the entire plant may be used. The vines are nearly equal to alfalfa hay in feeding value, and the nuts have a food value for both the human family and livestock. The peanut is very easy to grow and is not subject to disease or injury from insects.

Climate and Soil

Peanuts do best in a light sandy, loamy soil which is well drained. The season should be long without frost as the peanut is susceptible to injury from frost.

Variety

The Spanish peanut is more extensively planted in the West. It is a small podded variety and has a heavy growth of vine desirable for forage. The nuts have a high percentage of oil. This variety is very hardy and particularly adapted for dry farming. The Valencia is another variety with nuts more desirable for commercial purposes.

Seed

Peanuts should be saved from hardy well matured vines, cured and kept dry during the winter.

The Spanish peanut may be planted in the pod, but large podded varieties are usually hulled. If the pods are soaked in water over night it hastens the germination, but they must be planted immediately. About two bushels of pods or one-half bushel of shelled nuts are required for an acre. If mice are bad the pods may be soaked in an emulsion of soap water and kerosene. Do not soak the shelled nuts.

Time for Planting

Plant the nuts in the spring, a little later than beans. The Spanish may be planted as late as June.

They are usually planted in rows from 28 to 36 inches apart and 9 to 12 inches apart in the rows. Cover with two inches of soil in light sandy soil, and less in heavy soils.

Cultivate the same as for beans. Keep the soil loose to prevent the loss of moisture. After the peanuts begin to form "pegs" stop all cultivation. In the later cultivation the soil should be worked to the plants so the pods may have a bed of loose earth in which to form.

Ripening

The yellowing of the vines is an indication of maturity, but care must be taken not to harvest too early as the nuts shrivel in curing when immature. In digging the peanuts, cut the tap roots below the nuts. Lift the vines and shake the soil from the roots. Turn the vines over and let the nuts dry in the sun. After a few hours place the vines in small shocks to cure. Vines dug late in the afternoon should be stacked the next morning as soon as they are dry. Too rapid curing is not desirable as the pods discolor and shrivel.

Antelope Valley Fair

An old fashioned fair with modern trimmings was that staged at Lancaster, the thriving metropolis of the Antelope Valley section of Los Angeles County, last week. It was not a live-stock show nor a pumpkin show; nevertheless there were on exhibition some of the biggest and finest hogs in the state, and some of the swellest pumpkins and squashes that California sunshine, soil and water can produce—all attesting the wonderful fertility of that section of Los Angeles County that has been fittingly dubbed the "milk bottle" of the city of Los Angeles.

Agricultural hall was well filled with a surprisingly large variety of products representing the output of alfalfa ranches, apple, pear and almond groves, as well as the grain growing sections of the valley.

A most novel feature of this fair was to be seen in the alfalfa palace, a structure designed to emphasize the leading feature of the valley's agricultural activities. The dimensions of the building were 55 by 100 feet, and about 700 bales were used in its construction, the pioneer rancher, J. L. Rector, being the designer and builder. As a public speaking and dancing hall the alfalfa palace made for itself a degree of popularity far beyond the anticipations of its most ardent admirers.

Among the general farm products exhibits may be mentioned the Harold True exhibit as having won first in the special prize contest instigated through the enterprise of the C. H. Lippincott Co. of Los Angeles. In this contest the True exhibit stood first, winning a $20 prize; the A. C. Pickens exhibit second, $15; the Elias Munz ranch third, $10, and the John Meder ranch fourth, $5.00. Among the highly commended were the Fred Godde exhibit, the A. C. Cissell exhibit, the Sunshine Ranch exhibit (O. F. Goodrich).

It was a splendid array of fruits, grains, grasses, roots, etc., commanding the admiration of sightseers, and calling into play the very keenest and best powers of the judges in making their final decisions as to comparative merits of all exhibits.

The Lancaster Feed & Fuel Co., and the Nicholls-Loomis Co. of Los Angeles were conspicuous with attractive displays in the line of alfalfa and other kindred products. The Globe Mills of Los Angeles had a fine display of their products.

A big tractor plowing demonstration was staged by Frank D. Waish, local distributer in the implement trade.

C. J. Gilbert had on exhibition his fine herd of registered Hampshire swine, and likewise Donald H. Graham showed a fine lineup of Durocs, with the noted Liberty Fair junior champion boar, Orioris King Gano, at the forefront. Both these are local herds. There were also smaller exhibits of Poland Chinas and Berkshires.

A public register kept at newspaper headquarters showed a registration of visitors from more than fifty towns outside the Antelope Valley. Many touring parties took occasion to visit the alfalfa and fruit growing sections of the valley. Also a big airplane from the Mercury aviation field ran on a 15-minute schedule on "bird's-eye" sight-seeing trips over the valley.

Secretary Frank B. Rutledge deserves credit for his efforts toward making this fair the success it has been against many odds not generally understood. However, the Antelope Valley Fair is a fixed institution that will grow bigger and better with each year of its existence.

IMPURE AND ADULTERATED SEEDS A MENACE

By G. H. Hecke, Director of Agriculture, Sacramento, California

One of the great sources of loss to the farmer, and one that is difficult to reckon in standards of money is the single item of "Impure Seeds."

1. They disseminate various fungous diseases.
2. They may carry the seeds of noxious weeds.
3. They may not be true to name, variety, or germinating quality.
4. They cause loss in weight through the admixture of trash.
5. The valuable strains of a given plant, which have won reputation for quality, may be broken down and destroyed through cross-pollination in the field and by careless admixtures of inferior seeds. Thus the period of life of any valuable commercial variety is lengthened or shortened according to the care that is exercised in keeping the original stock pure. The present condition which prevails to some extent in the Imperial Valley with regard to cotton seed is an illustration of this point. While we have succeeded, by strict quarantine regulations, in keeping out the boll weevil, yet the growers complain that pure varieties have been destroyed by cross-pollination. This demonstrates the

necessity for cooperation among the farmers and growers toward preserving the purity of desirable types.

The British government in Egypt has recently determined that more rigid regulations are necessary in the growing of cotton, for investigation shows that the qualities which made Egyptian cotton world-famous are being broken down through cross-pollination in the field and careless mixing at the ginneries with inferior varieties.

In our efforts toward big production we must not lose sight of the importance of maintaining the purity of standard types, in order that quality may result as well as quantity.

The old state commission of horticulture has endeavored to secure state legislation which will regulate the seed trade. but so far such efforts have been unsurressful. As to the department of agriculture, we intend to keep working at this important measure. Fully one-half ef the states in the Union now have seed laws preventing the sale of weed infested seed and seed of low vitality; the result is that seeds which can not be sold in such states will very likely be disposed of to states having no regulations against impure seeds. In order to protect the farmer in his efforts to maintain pure varieties he should be assured of a supply of pure seed, and this necessitates care on the part of both the growers and the dealers.

Let us compare this situation, impure seeds in interstate traffic, with other commodities that are marketed —and, too, regulated by law. Take, for instance, pharmaceutical preparations—under the pure food and drugs act of June 30, 1906!

Why do thousands of cases receive condemnation every year?

(1) Misbranded — the label sets forth ideas and statements that are misleading and untrue!

(2) They contain matter deleterious to health of man or animals!

(3) They contain an excessive amount of inert or worthless matter to give them bulk!

Then what of seeds, exploited by seed houses, that enter interstate traffic?

(1) They are misbranded as to quality and germinating power!

(2) They may, unless sterilized or fumigated, carry noxious insects, weeds or diseases!

(3) They may be adulterated with straw, chaff, hulls, or other inert or worthless matter, to give them bulk!

FAIR DATES

Tulare County Live Stock Show, Tulare, October 6-11, Secretary R. C. Sturgeon.

Southern California, Riverside, October 7-11, Secretary W. W. Van Pelt.

Monterey County, Salinas, October 10-11.

California Industries and Land Show, San Francisco, October 14-19, Secretary E. H. Brown.

Los Angeles Live Stock Show, Los Angeles, October 18-26, Secretary C. R. Thomas.

California International Live Stock, San Francisco, November 1-8, Secretary Gordon H. True.

Arizona State, Phoenix, November 3-8, Secretary Chas. F. Price.

CORN BORER A REAL PERIL

The European corn borer undoubtedly is a serious menace to American agriculture. The United States department of agriculture has for some time called attention to the extreme danger from this pest, which has become well established in both Massachusetts and New York. Now comes this reinforcement of that judgment:

"We, the National Association of Commissioners of Agriculture, with official entomologists from many states and representatives of the United States department of agriculture, together with representatives of the Canadian government, present as experts in conference upon the situation, express ourselves, after examining the infested area, as thoroughly convinced that this pest is one of the most dangerous insects which has become established in America, and we hereby place ourselves on record in favor of most energetic efforts on the part of federal and state agencies to control and, if possible, to exterminate this insect, including in the program vigorous quarantines to prevent its distribution."

That is a part of the resolutions adopted by the European corn-borer conference, begun at Albany, New York, on August 28 and concluded at Boston, Massachusetts, on August 29. The state commissioners of agriculture, state entomologists and others went over the corn fields around Schenectady, New York, and Boston, Massachusetts, and saw the methods of destruction practiced by the United States department of agriculture and the state agencies, together with the damage caused by the borer.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Burned Orange Trees

Our house burned a few weeks ago. Facing the site of the building, and about thirty-five or forty feet distant is a row of orange trees. For some time it seemed that the scorching of the leaves and twigs on the side of the trees next to the fire was the extent of damage done but lately the bark on the trunks of three of them has split and fallen off while still another one, that showed no signs of being scorched, is drying up. We have kept them as well watered as usual. Is there any sort of treatment that will save them?—Subscriber, Fresno.

There is nothing that can restore the tissue which has been destroyed by the burning building but if the greater part of the tree is still living removal of the dried and cracking bark and coating the trunk over with grafting wax will probably prevent undue cracking and will undoubtedly heal over the wound. As an aid in preventing the decay of the trunk it might be well to coat over the wound with Bordeaux or some other antiseptic mixture before the grafting wax is applied. If, however, the heat has destroyed the greater portion of the bark on the trunk it might be impossible to save sufficient of good bark to heal over quickly.

Diseased Liver in Rabbit

We are raising a few rabbits for our own use and when we killed one found the liver coated with white spots. What is the cause and what can be done to cure it or prevent it? I feed barley once a day and some alfalfa and they have plenty of water to drink. Their cages are always kept clean.—Subscriber, Aromas.

"Practical Rabbit Keeping" recommends the following:

"Rabbits suffering from this complaint have difficulty in breathing, which is heavy and quite audible. They, however, eat well, and with the exception of a dull, listless appearance seem in good health. With correct feeding and green food in season, particularly dandelion, rabbits rarely suffer from liver complaints. Should the liver become diseased or chronic inflammation set in, the patient had better be destroyed and thus put out of its misery, as the chances of permanent cure are exceedingly remote."

YOU
Can Use It
Every Day
Big jobs, little jobs, long jobs, short jobs—you can do them all with a
FULLER & JOHNSON
Model "K"
Throttling Governor Kerosene Engine
Because of their wonderful service users pronounce these engines the best engines to be had. All they are doing for others they will do for you. Built in desirable sizes up to 25-H. P., you can choose an engine to suit your work. Send for Catalog No. 22A.
FULLER & JOHNSON MFG. CO.
Builders of Farm Engines
100 Clinton St. Madison, Wis.
EASY TO START

When Writing Advertisers, Mention The Cultivator.

THE GOODRICH
MORE MILEAGE MESSAGE
Adjustments
Fabrics ----6,000 Miles
Silvertowns-8,000 Miles
GOODRICH is making the burliest, sturdiest, most lasting tires the rubber industry has ever seen; and Goodrich knows it.
In every test of road-roughing to which tires can be put, Goodrich Tires have unfolded an endurance, an ability to take punishment, which has run into phenomenal mileage.
Confident in this knowledge and belief, Goodrich desires that all tire users share in the confidence of Goodrich, and the big mileage Goodrich Tires assure.
Therefore, Goodrich announces to Dealers and Users—to present and future owners of its pneumatic tires—an adjustment basis of 6,000 miles for SAFETY TREADS, and 8,000 miles for SILVERTOWN CORDS, instead of the 3,500 and 5,000 miles, respectively, heretofore in force.
Remember that a Goodrich adjustment is a fair one. Goodrich knows the mileage is in its tires, and more; and to make you realize you lose money in being without Goodrich Tires, the new Goodrich adjustment is proclaimed broadcast.
Buy Goodrich Tires from a Dealer
The City of GOODRICH Akron, Ohio
GOODRICH SAFETY TREAD
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TIRES
"BEST IN THE LONG RUN"

Classified Liners

The direct selling m[illegible]om producer to consumer, and a clearing hous[illegible]er 33,000 readers, weekly.
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FARM LANDS FOR SALE

FOR SALE—IN SAN DIEGO COUNTY—RANCHES AND STORES

38 acres; 4 acres in olives; crop averaged $750 for the last 3 years; 1½ acres grapes and other fruit; two houses, barn, small warehouse; store building with fixtures, etc.; good location. Price $3000.

122 acres; 50 acres plow land, 20 acres in olives, fruit and shade trees; 5-room plastered house, barn, garage; place all fenced; faces on 2 roads; 3 wells, windmill, water piped to house and store. Store, stock and goods, business $20 a day; good business could be done in hay, grain, etc. Price $8000.

Mountain Apple Ranch—160 acres; good 3-room house, outside kitchen, woodhouse, barn, cold spring, place fenced and cross-fenced; about 500 bearing apples, 100 young trees; 900 boxes of apples last year; 3 acres meadow; much hill pasture; most of land covered with oak, fir and cedar timber; more land could be planted to apples; elevation 5200 feet. Price $4000, $1000 cash.

A. G. HAYES, Nellie, California.

140-ACRE MONEY MAKER $2800
4 EXTRA GOOD COWS

Poultry, wagons, walking and sulky plows, mowing machine, full line machinery, quantity wheat, corn, hay, other crops included for quick sale. Stores, churches, creamery near, convenient R. R. town. 70 acres heavy loam tillage, clay subsoil; wire-fenced pasture; estimated 1000 cords wood for near market, much timber, fruit. Excellent 12-room house alone worth more than whole price; 26-cow basement barn, etc., $2800; easy terms gets all. Details page 25 Fall Catalog, just out, farm bargains Maine to Florida and west to Nebraska; copy free. STROUT FARM AGENCY, 831 A. G., New York Life Bldg., Kansas City, Mo.

CASA GRANDE VALLEY ARIZONA

For sale or exchange for California—320 acres improved with good water supply developed sufficient for irrigation; fine cotton, alfalfa or fruit land. Small payment will handle this. This is all cleared ready to farm. Can offer another 320, all improved, some water, for a larger trade, or will sell for very small payment to responsible party. Will sell teams and implements if desired. Price $42,000 for each 320 acres. This is the best in the Casa Grande Valley. Come or write.

CASA GRANDE FARMS & DEVELOPMENT CO.
F. L. Davis and F. J. Goodrich, Sales Agents, Casa Grande, Arizona.

Washington "The Evergreen State" has splendid openings for more farmers. Fruit growing, dairying and live stock raising, as well as grain growing show great results. Here is a mild climate, ample rainfall or irrigation and many valleys of fertile soil. Land prices range from $25 an acre upward, depending on location and development. Good roads, schools and churches. Full information in new book by State Agricultural College and United States Railroad Administration, just off press. Ask for Washington book and give your name and address plainly. J. L. Edwards, Manager Agricultural Section, Room 677, United States Railroad Administration, Washington, D. C.

CASA GRANDE VALLEY LANDS

Indications are that the San Carlos dam is going to be built. CASA GRANDE VALLEY is now the land of opportunity. We have lands under the San Carlos, as outlined by the board of army engineers' report. Deeded lands, $25 to $50 per acre, unimproved. Improved ranches with water developed, $75 to $150 per acre. We have relinquishments on desert lands, $10 to $30 per acre. We stand back of every representation made. We solicit correspondence.

CASA GRANDE FARMS AND DEVELOPMENT COMPANY.
F. L. Davis and F. J. Goodrich, Selling Agents, Casa Grande, Ariz.

For Sale—Fruit and Poultrymen—It will be to your advantage to write today for information about the Paradise district—deep rich soil—ideal mountain climate. (Above frost and fog.) Electricity and an abundance of pure water.
Choice tracts $100 per acre.
PARADISE LUMBER CO.
Paradise, Butte County, California.

For Sale — 160 acres west quarter of Hutchinson ranch, nine miles south of Yuba City, two miles northeast of O'Banion Corners. Price $200 per acre. Terms, one-half cash. Balance 5 years with interest at 6 per cent. Address M. J. Hutchinson, 858 Fourth St., Santa Rosa, Sonoma County, California.

Attention Ranch Owner! 2 modern apartment buildings, consisting of 4 3-room apartments in each building. Hardwood floors, built-in features, garages, large lot, central location. Total income, $260 per month. Price $10,000 each building. Will exchange either or both for income ranch. BARNUM & CO., 625-26 First National Bank Bldg., Oakland.

For Sale—80 acres 2 miles east of Earlimart in Tulare county. Domestic well is only improvement. Splendid soil in settled section. $90 an acre. W. F. Marks, 226 So. Main St., Los Angeles. Phone Main 1499.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles

For Sale — $1200 Relinquishment — 160 acres with well 114 ft. Water stands 28 ft. of surface. Deeper drilling would douhtless get flowing well. A. C. Vestal, Wagner, California.

For Sale—160 acres sandy loam, suitable for any kind fruit. At a bargain price. Twenty dollars acre. Write for particulars. Box 235, Casa Grande, Arizona.

FARM LANDS FOR SALE

If you want to sell or exchange your property write me. John J. Black, 116 St., Chippewa Falls, Wisconsin.

17 Acres—3 excellent houses; motors; barn; vineyard; orchard. Mrs. Kate Rae, Galt, Sac. Co.

CATTLE

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—35 head of fine dairy heifers, Holstein, Jersey, from 15 months to 2 years old; 20 to come fresh this fall. J. S. Smith, Box 515, San Jose, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also handpicked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Cory Thornless Blackberry—Extra strong, well rooted tips. No order too small and none too large. Send for descriptive price list now. Place your orders early. Ekstein Nurseries, Modesto, California.

Cory's Thornless Mammoth Blackberry plants for January delivery. Dealers order early, supply limited. G. S. Wills, Mountain Pass Ranch, Jamestown, California.

Write for Circular and Prices of Seeds. Wanted Sudan, Halry, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

For Sale—Everbearing Strawberry Plants—Progressive, $1.50 per hundred; Superb, $2.50 per hundred, postpaid. G. M. Hawley, La Mesa, California.

MUSICAL INSTRUMENTS

PIANOS—PLAYER PIANOS
Paige Piano Co., 1600 Clay Street, Oakland California

MACHINERY

Tanks, Tanks—100 used redwood, iron tanks, no profiteering in these prices, which are same as before war: 200 gallons, oak cask, $4.75; 1000, $27.50; 1600, $32.50; 2000 redwood, $28; 3000, $33; 4000, 5000, $48; 5600, $58; 25,000, $125; bunch galvanized tanks, 100 to 3000 gal., make new galvanized tank, 22 gauge, 1000, $39.75; 2000, $53.75; go in car door. Cheap freight. Also 50 windmills, 25 pumps, 50 cylinders; ranch tools, surface irrigating pipe. DEMMITT CO., 120 N. Main, upstairs. Yards, 816 Yale, Los Angeles.

For Sale—Titan Tractor 10-20. Being rebored and new pistons—will be good as new. Cheap. 901 E. Eighth St., Wardrobe Laundry, Los Angeles.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

RABBITS

For Sale—You will be satisfied with my high grade New Zealand Reds, Pedigree and Utility Stock at reasonable prices. F. R. Caldwell, Broodmoor, San Leandro, California.

Money in Rabbits—We are having a special sale of very fine bucks and does at reduced prices. Write us for particulars. H. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

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Giant Type Berkshires.

We are booking orders for spring pigs from Grand Champion sows and sired by Mayfield Rookwood, sire of Champion barrow at 1919 Western Berkshire Congress.

Castleview Ranch, Santa Rosa, California.

BERKSHIRES BERKSHIRES

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We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

BOAR
Sired by Baron Duke 201st
Weight 780 pounds
Grand National Champion
Damed by Rookwood Lady 100th
Weight 712 pounds
Grand National Champion
one and one-half years old. Big boned, vigorous boar. Half-brother to 1919 Grand Champion that sold for $1000. I do not need this great breeder and he is being offered at a very low price. Sandercock Land Co., 23 Montgomery Street, San Francisco. In Charge of Natomas Land Sales.

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are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. High class stock for sale at all times.
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Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

For Real Good Berkshires, cholera immune, write for my catalog that gives complete information. Frank B. Anderson, Box 724, Sacramento, California.

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Durocs—A few very fine gilts and boars five months old, about 175 pounds, Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

Echo Ranch Duroc-Jerseys offer for sale two young boars and three gilts, February farrow, from crack litter of 11, nine raised; got by GREAT MODEL, noted sire of the Duroc-Jersey breed, dam by ORION MODEL. They are big, smooth and straight. Gilts priced open or will breed. Write J. L. Stevenson, Van Nuys, California.

Duroc-Jerseys—Just now we are offering some choicely bred young sows, with plenty of size, mated to our big senior yearling boar GOLDEN CHERRY 5th—a son of GREAT MODEL and the prize winning sow GOLDEN BLOSSOM 2nd. For particulars, prices, etc., write Beller & Borden, Carlsbad, California.

We Have 100 Young Gilts and Boars, bred in the purple, which we are selling for about half their value. Money back if not satisfied. Derryfield Farm, Capital National Bank Bldg. Sacramento

1 Have a Few Registered Duroc-Jersey boars farrowed February 15, 1919, sired by P. & L. Great Model No. 233141. If you are looking for something good see them. F. C. Richey, Jr., R. F. D., Box 120, Hemet California.

Ireland Ranch Durocs—the big 1918 grand champion Cherry Volunteer II heads herd. Spring pig and bred sow prospects coming fine. Owensmouth, or 1219 Brockman Building, Los Angeles, California.

Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow. Inquiries solicited Prices reasonable. Harvey M. Berglund, Dixon, California.

Our Fairfadale Farm big-type Durocs, for 1919 are the best ever. Great Orion Sensation, Jr., at head of herd—a $2000 boar, with sows in same class. Write: B. H. Wilkinson, Mgr., Perris, California.

Jersey Queen Farm will stand for QUALITY in future. Write your wants or call. Garden City Sanitarium, Inside City, San Jose, California.

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The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address R. K Walker

A. R. Bardrick, breeder of Duroc-Jersey hogs. Stock for sale. Oceano, California

POLAND-CHINAS

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big both winners—a combination of the greatest blood of the breed. Breed big type Polands Start right by using this blood Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare October 21st OXBONE Herd Poland-Chinas Tipton California

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Pure Bred Poland-China pigs for sale. J. R. Carhart, Fullerton, California.

POLAND-CHINAS

Strictly Big Type Poland-Chinas: El Profito heads herd at 900 lbs.—a line bred Big Timm. Viola L. Renwick, Santa Barbara, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

Poland-Chinas—Registered and well developed. Ranch adjoins town. Moramarco Bros., Van Nuys, California.

The Pacific Herd of Big Type Polands, King Hadley & Chief. Price breeding. Mrs. C. H. Andrews, Modesto.

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Chester Whites—Billiken Type. Big winners at the State Fair. 15 extra spring boars sired by the Grand Champion and out of Billiken sired sows. A few spring sow pigs, same breeding. Three bred sows—two bred gilts. Billiken blood. Write for special catalogue and price list. C. B. Cunningham, Mills, California.

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Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet, California.

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Fall Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heavliest laying (Hoganized) stock. Price during August: 25, $4.00, 50, $8.00; 100, $14.00. Price during September. 25, $4.50; 50, $8.50; 100, $15.00. Special prices 500 and 1000 lots. Safe delivery guaranteed; you pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

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Order Baby Chicks Now, for immediate or spring delivery. Several varieties. Safe arrival guaranteed. Write for free circular. R. I. Red, Buff Orpington and White Rock cockerels now ready for shipment. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto, California.

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Baby Chicks—Order fall chicks now from our large heavy laying S. C. White Leghorns. Tupman Poultry Farm, Ceres, California Box 7 "C."

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For Sale — Silver Campine Cockerels — also eggs for setting. Roy Ward, Lindsay, California.

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Send Your Order for Rock Red or Leghorn chicks to MADERA HATCHERY, Madera, California.

For Sale—25 Pure Mammoth Pekin Ducks, 6 months old, $2 each. Geo. E. Radeleff, Springville, California.

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Want Responsible and Experienced fruit, alfalfa or grain irrigation farmers to work on crop share basis. Land is river bottom tule land, plenty of water, good living conditions and good markets. Will enter into one or two years contract with right men and might extend same into option of purchase. Party should have some implements, live stock or money with which to buy them. Please state age, farming experience, from whom you have rented, amount of livestock and implements you own, financial condition, and size and age of family. State when your services will be available and amount of land you can handle. Address Herman Janss, San Joaquin, Fresno County, California.

An Experienced Dairy Herdsman, now employed in one of the leading Holstein herds of this state desires to make a change where a greater opportunity is afforded. Lifetime with Holsteins. Wisconsin agricultural college training. Capable of managing a first class herd where official records are made and where show herds are fitted. Best of references from several of the leading breeders of this state. Single. Address Wellington H. Nees, Box 238, Sacramento, California.

Wanted — Management of farm by Californian, thoroughly familiar with fruit, alfalfa, grain and stock growing. An expert in irrigation. Address Lock Box 944, Fontana, San Bernardino County, California.

Experienced man to take complete charge of 15 acre lemon ranch near San Diego. Good pay to right man. State age, salary expected, whether married or single, and state references in reply. Clement B. Stern, San Diego, California.

Wanted—50,000 strawberry plants for immediate planting. Klondyke, Brandywine, New Oregon, Banner preferred. Give price and sample. Mission Oak Nursery, Santa Barbara.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California

Wanted to hear from owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

Wanted by experienced hog hand job on hog ranch in Tulare or Fresno County. Write—1214 E. 23rd St., Los Angeles.

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Real Home-Made Tobacco—Lb., 68c; 5 lbs. $3.30; 10 lbs., $6.30, postpaid. Free flavoring with smoking tobacco. Write for particulars. Randolph Tobacco Co., Paducah, Kentucky.

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Made of Redwood. Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California

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SHEEP

Sheep For Sale—Young Merino and Rambouillet ewes; North California Stock. Apply, write or wire ANDREW H. McINNES, wool and sheep broker, 408 Bank of Italy Bldg., 550 Mont. St., San Francisco.

PHEASANTS

For Sale—Golden Pheasants in full plumage. E. Borchert, Garden Grove Road, Anaheim, California.

GAME LAWS FOR 1919

The United States department of agriculture is mailing to all who request it Farmers Bulletin 1077, "Game Laws for 1919." It is a 78 page bulletin giving a summary of the provisions of federal, state and provincial statutes.

THIS MONTH

Continued from Page 447.

combe Pink. Tulips thrive only in good rich soil and they should be planted one and one-half times the depth of the bulb and spaced three inches apart in the row or group.

Other bulbs which deserve mention are the earliest of all: snowdrops, crocus, and the little known grape hyacinth. These may be planted near the edge of the border as they are not giants. Last but not least in importance are the freesias, those very fragrant flowers in white, yellow, and lavender shades recently developed. They are valuable in the garden or grown in pots, if the last named method is adapted six to eight bulbs are planted in a five-inch pot and treated as advised for the other bulbs. Iris, liliums and anemones will be dealt with next month; in the meantime get your order in for the selections named.

Subjects for Sowing Now

Alyssum saxatile; Anchusa, Perry's Variety; Bellis perennis; Aubretia hybrids; Myosotis or forget-me-not; pansy and viola, Sweet William and hollyhock. Sow all these in a well prepared border in a warm situation.

LIVE STOCK NEWS NOTES

Continued from Page 456.

ports the sale of their prize winning six months old boar, Castleview Rival Duke to D. J. Bastanchury, Fullerton. The price was very satisfactory considering the age of the boar and he will be developed to head the herd now in the process of formation by Mr. Bastanchury on his ranch near La Habra.

J. Francis O'Connor, proprietor of the Castleview herd of Berkshires, plans to exhibit at the Riverside fair, the Los Angeles Livestock show and The California International Live Stock show to be held at San Francisco. O'Connor was one of the successful exhibitors at the state fair.

California cattlemen who attend the Los Angeles and San Francisco live stock shows will probably have an opportunity to see the two year old Shorthorn bull, Gainford Matchless, recently brought to this state by Edward Cebrian to serve in the Caledonia herd. Gainford Matchless is counted one of the best bulls ever brought West. He was first prize senior yearling at the 1918 International.

Tilly Alcartra, the famous Holstein cow owned by A. W. Morris & Sons of Woodland, has gained such a national reputation that her owners have been put to quite a test in answering the hundreds of inquiries regarding this remarkable dairy machine. Accordingly the Morris' have issued a 12 page booklet detailing the story of Tilly up to her tenth year. The story is written under the following chapter headings: "Tilly's Production Records"; "Tilly's Prize Winnings"; "Tilly's Individuality"; "Tilly as a Breeder," and "Tilly as a Dairy Cow."

L. J. Belknap, M. D., of Jersey Queen Farm, San Jose, has just purchased from Jack Borge of Dos Palos eight head of Duroc-Jersey sows and gilts that represent some of the best of the Elmer Lamb breeding. Included in the purchase were two junior gilts out of Lulu Wonder and four sows by Orion Model. These sows, together with those recently received from the East, give the Jersey Queen Farm a herd of 20 high class sows. Most of the sows have been bred to a grandson of Golden Uneeda, an exceptional brood sow.

The 6500 acre Tagus ranch, near Tulare, owned by H. C. Merritt of Pasadena, has been sold to Morris & Trexler. This ranch is regarded as one of the most valuable in California and the purchase price was near $1,000,000. For a number of years it has been the seat of extensive live stock operations and during the past year has been the headquarters for the Merritt-Bowers Company.

California Hereford breeders will have an opportunity to measure their strength with one of the good herds of the East when the show herd of the Wyoming Hereford Corporation of Cheyenne, Wyoming, comes West to exhibit at the Los Angeles and San Francisco livestock shows. The Wyoming herd is not only one of the largest collections of the breed owned in America but is rated as an exceptionally high class herd. The herd was seen at Los Angeles last year.

R. J. Yates, Poland-China breeder of Orland, has recently sold to J. L. Long of Bend two senior gilts sired by Long Jumbo, the Yates herd boar.

W. J. Higdon, Holstein breeder of Tulare, has recently sold to L. E. Prestage, Porterville, an 18 months old bull out of the 34 pound cow Caloma Beauty Butter Maid by a son of Segis Pontiac De Kol Burke.

"All About Roeding's True TREES"

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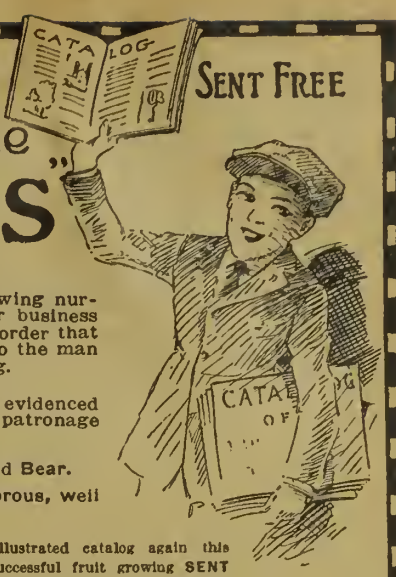

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How well we have succeeded, is evidenced each year by the ever-increasing patronage accorded us.

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It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight, and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Junior. Equipped with 1½ horse-power engine, battery ignition, 150-gallon tank with mechanical agitator, capacity of four gallons per minute with a steady working pressure of 200 pounds, and two 25-foot of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All for $315. *Delivered anywhere in this state*

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

The HARDIE ORCHARD GUN is $12.00, none better. Every one is guaranteed to give satisfaction to the user, or his money refunded.

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If you want *prize* cows of unquestionable, pure-bred breed and championship calibre — get Jerseys.
If you want cows that feed for their udder, the profit part of a cow, and not for beef and bone — get Jerseys.

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herd bull. We can be of material assistance to you in solving this question.

Sir Veeman Korndyke Pontiac

Our senior herd sire is a son of Sir Veeman Hengerveld, the sire of more 30 pound cows than any living sire. Five other sires bred for production. A good sire will increase your milk production. We have increased ours 100 per cent the past two years. We can sell you a young bull at a very reasonable price.

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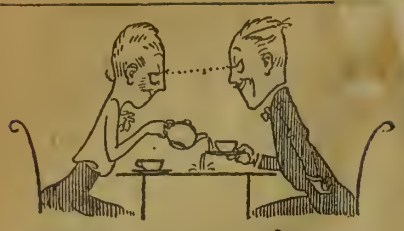
GOING FAST, SO ACT QUICKLY

Five young Holstein bulls have left Sunnyside Farm past month to head other herds. We have for sale a few select sons of Sir Veeman Korndyke Pontiac by Sir Veeman Hengerveld, the sire of more 30 pound cows than any other living sire. Full description and price on request.

R. F. Guerin Breeder of Holsteins Visalia, Calif.

Make the reading of advertisements in the California Cultivator a habit.

They will broaden your knowledge of the manufacturing improvements.



When you make your tea, the tea-flavor develops first—and that's what you want: tea-flavor, not tannin. Tannin then comes along and smothers the tea-flavor.

Common tea is older leaves with lots of tannin and very little tea-flavor.

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O lonely heart set thine own chords in tune;
With discord's self, divinest music jars;
Then shalt thou learn Love's everlasting rune,
And chant the anthem of the morning stars.

For thee shall all creation have a voice.
And flowers and birds and angels round the throne
In one glad chorus sing to thee, "Rejoice"!
The heart that loveth never is alone.
—Lucy Fountain.

VALUES

I little care how tall you are,
Nor if you're small how small you are,
The thing that matters most to me
Is not how big your body be,
Nor how much cash you've stored away,
Nor on the scales how much you weigh,
But how much Soul you've set apart,
And what's the measure of your heart,
And in your share of stock preferred
What is the value of your word?
If these be always kept at par
It matter not how small you are,
Nor on what lowly planes you press
You've won success!
—John Kendrick Bangs.

SKATING TO COLLEGE

IN MY sophomore year I undertook to skate from my home on the Salmon River seventy-five miles to my college at Fredericton, New Brunswick. I never made a second attempt.

I had come home to a mild Christmas, but shortly before the end of the holidays the weather turned cold, and thick ice formed on the little Salmon. I should have to cross a wide lake and finish on the St. John River; as I felt sure that the lake ice would be as thick as that on the Salmon, I persuaded my family to let me undertake the trip.

The early sun was sparkling on the house roof and the frosted haystacks when I started. The morning was fine, and the ice, although half a foot thick, so clear that I could see stumps and leaves through it as clearly as through glass.

I saw also some floating cakes of ice, which told me that a break had occurred upriver. This caused me my first anxiety; I wondered if, after all, the lake might be open.

I was not long in suspense, for in 25 minutes I had covered the six miles of the Salmon and got a glimpse of the lake—solid as steel and glistening in the sun.

"Good enough!" I exclaimed in satisfaction; and soon I was clear of the mouth of the river and skimming over the smooth inland sea.

In one of the coves I saw some boys playing hockey. Over to my left, two men with poles came sweeping in long, graceful strokes toward the mouth of the Salmon. Now and then they would raise their poles and bring them ringing down upon the ice.

Their caution made me suspicious, although I could not see that the ice was becoming any thinner. As they neared me one of them shouted:

"Did you come down river?"

I nodded.

"Ice all right?"

"It is for six miles, anyway," I answered.

"That'll do," said the man, and he threw his pole down on the ice, as if he were glad to be relieved of it.

I picked it up, thinking it might be useful in testing the ice, and then struck out for a low point of land seven or eight miles below on the western shore of the lake. The wind that had helped me down the river now blew stiffly on my right shoulder, and sometimes veered round and stung my face.

Halfway to the point, I came suddenly on a strip of open water about four feet wide. I approached the edge cautiously, striking hard with my pole. The ice seemed perfectly strong, and I thrust my pole under the edge on the other side of the gap. It seemed six inches thick.

Although I had known of the ice bulging in ridges, sometimes seven or eight feet high, this open lane mystified me. However, I did not waste much time trying to account for it. I skated back some fifty yards; then, darting forward, I crossed the crack at a leap, and sped on toward the point.

But as I neared it I found another lane of open water stretching across the lake from the tip of the headland. As this was too wide to jump, I made for the shore, hoping that, after crossing the point, I should find solid ice on the other side.

The distance across was short, and my skates were so well strapped on that I did not want to remove them. So, on reaching land, I got down on my hands and knees and crawled.

When I saw that on the other side all was ice, I felt immensely relieved. Soon I was striking off again for another point ten or eleven miles below. The wind had increased and began blowing directly off the western shore.

Far in front of me and to my left a low mist hung over the ice. It lifted when I was well in toward shore, and I saw open water within a quarter of a mile. Then I began to hear the loose cakes grinding and the waves breaking on the edge of the ice.

I struck in toward the western shore intending to land and walk across to the St. John. And then I learned my true position—the whole body of ice was swinging off from the shore in the wind!

The blue line, stretching for miles along the land, was growing wider every moment, and I saw that my only hope was to hasten back to the point I had left a short time before and go ashore there.

I rushed off on my ten-mile skate, the wind helping me a little. Off to the east, as far as I could see, there was open water, and I realized that if the ice drifted out into the middle of the lake it would not be long before it was broken up by the swell. It was not altogether with exhaustion that my heart throbbed heavily as I at last neared the point. Straining my eyes I saw, not a narrow blue line shutting me off from shore, but the ice piling ten or fifteen feet high on the rocks.

This, however, was only at the extreme tip of the point; everywhere else along the projecting land was open water. I must take the risk of going ashore on the rocky horn with those grinding masses of ice.

Had it not been for the great ridge of cakes already deposited, the venture would not have seemed so hopeless. But sometimes a huge floe of the ice would rise on this embankment; then, as it broke, cakes almost as wide as the side of a house would lap back and smash into fragments on the oncoming crush behind. And all the time the ice seemed to be running faster and piling higher.

I noticed that when a big cake went up and fell back it was generally some minutes before the same thing happened again. I dashed forward, and in another moment felt myself upon the moving slope.

When I had struggled as far up as I could, I set my skates at a wide angle and stooped until my hands touched the cold, moving wall before me. If my skates should slip, it would be the end. The great cake bore me steadily up—higher, I thought, than any had gone before. The crunching, grinding and swaying, the roaring of the ice as it fell back on itself or as it plunged down fifteen or twenty feet into open water, were deafening and appalling.

The cake took me almost to the very inner edge of the great ice rampart. Then, as the floe broke behind and below me, I sprang in among the smaller pieces on the summit, and went rolling, clinging and tumbling down to the rocks. I was inside the wall of ice—safe!

Although I felt bruised, my bones seemed whole enough, and I was still determined to get to Fredericton, on skates. Finding a farmhouse near at hand, I paid the owner a dollar to drive me over to the St. John. There the ice was fine, and by seven o'clock that night I had covered the thirty miles to the college.—Youths' Companion.

A THIRST QUENCHER

To assuage thirst and cure feverishness, apple tea is a notable sick drink. It is made by slicing up raw apples into a jug, filling up the jug with boiling water, as in tea making, then sweeting to taste. When cold, this **apple tea** will be found pleasingly tart and refreshing.

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ABOUT CLOTHES

We recently saw in an exchange a bit of common sense advice as to clothes which appealed strongly to us so we pass it on to Cultivator readers:

How do you choose a pattern? One that you like the appearance of, to be sure. That method will prove satisfactory for the best frock, but more than appearance should be considered in a pattern for the play and work aprons and dresses and the everyday underclothing.

Next to appearance is simplicity in the making. Choose the pattern with few and simple seams. Consider the number of buttonholes. Not alone in the making but in the subsequent care is this worth considering, for buttons have a way of pulling off and buttonholes a tendency to tear out that means continual mending. One busy mother makes rompers that require six buttonholes. Another's pattern demands eighteen! Nor is it one bit more convenient or better looking. Think of this before buying the pattern.

The popular "slip over" garments are easily made and usually require no buttons or buttonholes. This style of pattern has many other advantages. It is ideal for little play dresses and aprons. Every mother knows that play dresses wear out first in the front where they are subject to hard washing and wear. Being exactly alike back and front the "slip over" can be worn so as to distribute the wear and will last much longer. This is equally true of "nighties" which usually wear out first at the back.

The objection is frequently made that the neck of slip-overs must necessarily be cut large to allow the head to pass through and consequently is too low for any except very warm weather. This objection may be overcome with any pattern by cutting the neck much smaller and leaving one or both shoulder seams open a few inches from the neck. Close with a button and buttonhole or a dress-snap.

Consider the ironing when choosing a pattern. The "alike back and front" garment is so easily ironed and is a boon when a mechanical ironer is employed. Next to this, the apron or dress which opens out single is easy to launder. Confined gathers and elaborate trimmings are out of place on the garment that pays a weekly visit to the washtub.

The wise choice of a pattern saves time and material in the making, and saves work in the care of the garment as long as it lasts.

CARE OF SHOES THAT PAYS

Have shoes carefully fitted. Well-fitting shoes look better and wear better, besides being more comfortable. Poor quality shoes are seldom economical.

Alternate two pairs; they last longer. Slip shoe-trees into shoes when you take them off; it makes them keep their shape longer.

Keep shoes clean and well-brushed; a dressing made with a little oil and well rubbed in prolongs the wear of leather and kid.

Clean canvas shoes on shoe-trees to prevent shrinking. Sponge with a little water and soap that contains whiting or use a commercial cleaner.

Dry wet shoes slowly on shoe-trees or stuffed with paper.

Protect shoes with rubbers in wet weather. Even with careful drying the moisture tends to rot the sewing threads.

Do not wear run-down heels; they spoil the shape of the whole shoe.

Have small rips mended at once; often they can be sewed at home.

TO MAKE THEM WEAR LONGER

Reinforce, in making, parts subjected to hard wear. Sew buttons on children's garments through several thicknesses of cloth to prevent tearing out. Run a few threads back and forth in the heel and toe of a new stocking.

Darn promptly small holes in stockings and other knitted underwear. A stitch in time saves the garment. Rub a piece of soap across the end of a run to stop the run until you can mend it.

Wash stockings frequently. It prevents continued strain on the same part of the stocking, and rotting and change of color from perspiration.

Wash new stockings before wearing to remove the sizing; otherwise holes may appear at once.

SANITARY FLOORS

We have arrived at the stage in civilization where we want everything else sanitary, so why not floors? The physician tells us that dust and dirt are prolific sources of disease. Cracks in floors, while being unsightly in appearance, harbor an unbelievable quantity of dirt.

A new floor, if properly laid, is free from this disagreeable feature, but in the course of time these cracks will begin to appear due to the shrinkage of the wood. For this identical condition paint manufacturers make and sell a specialty known as "crack filler." If all floor cracks are filled with this material, the accumulation of dust and dirt will not be in evidence. Thus you may be assured of a sanitary floor surface and sickness may be avoided. It is a simple matter to remedy; just clean out the dust and dirt from the cracks with some sharp pointed instrument and then thoroughly clean out with a scrubbing brush, soap and water. When dry, the crack filler may be applied. It is made in stiff paste form and should be applied with a putty knife in much the same manner as putty.

To make the job complete the floor should then be waxed, varnished or painted, depending, of course, on the present finish and the effect desired.

BURNING MONEY

Life is gay and blithe and sunny since the peace dove hit the breeze; every one is burning money just as though it grew on trees. I insist on thrift and saving, but there's none to heed my words; Johnnies say that I am raving, and throw money to the birds. Men are drawing princely wages, and their breasts are filled with mirth, and they jeer foreboding sages who predict a day of dearth; but that day will come as surely as tomorrow's sun will rise; things will then be going poorly with the giddy spendthrift guys. Things won't boom along forever as they're booming now, my friends; and the man who's truly clever saves as ably as he spends. It is patent to the knowing, in expansive times like these, that the kopecks won't be growing always on the shrubs and trees. There will come a day of trouble, when this boom is left behind, and the kopeck and the ruble will be mighty hard to find, happy then the lads whose wages have been safely placed in brine, who obeyed the seers and sages, when the saving graft was fine. And how sick will be the mortals who like spendthrifts now behave, who reply with jeers and chortles when we call on them to save.—Walt Mason.

LITTLE DIFFERENCE

A man said to a fisherman, with a bitter laugh:

"My friend, your time can't be very valuable. I've been watching you for two hours, and you haven't had a bite."

"My time's worth too much," the fisherman replied, "to waste two hours of it watchin' a man fish wot ain't ketchin 'nothin'."—Washington Star.

NO UMPIRE

"Are you in favor of protection or free trade?"

"It's a delicate question," relpied Senator Sorghum. "There is a difference of opinion among my constituents as to which I really favor. And I don't propose just now to break in and try to decide any disputes."

THE LAST LAP

Knicker—"How long does the cook promise to stay?"

Mrs. Knicker—"She says she will finish breaking this set of china."—New York Sun.

THE LOGIC OF IT

"De man dat looks out exclusive foh 'number one,'" said Uncle Eben, "mustn't be surprized if he finds himself cuttin' a purty small figger."—Washington Star.

SMILES

Charles Clees says: "Smiles are made to show the heart, not the teeth."—Philadelphia Cultivator.

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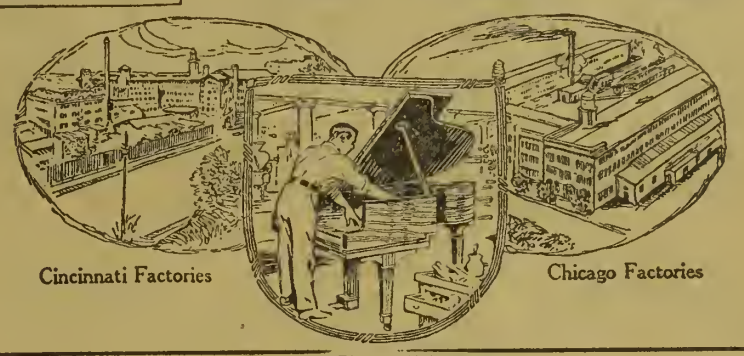

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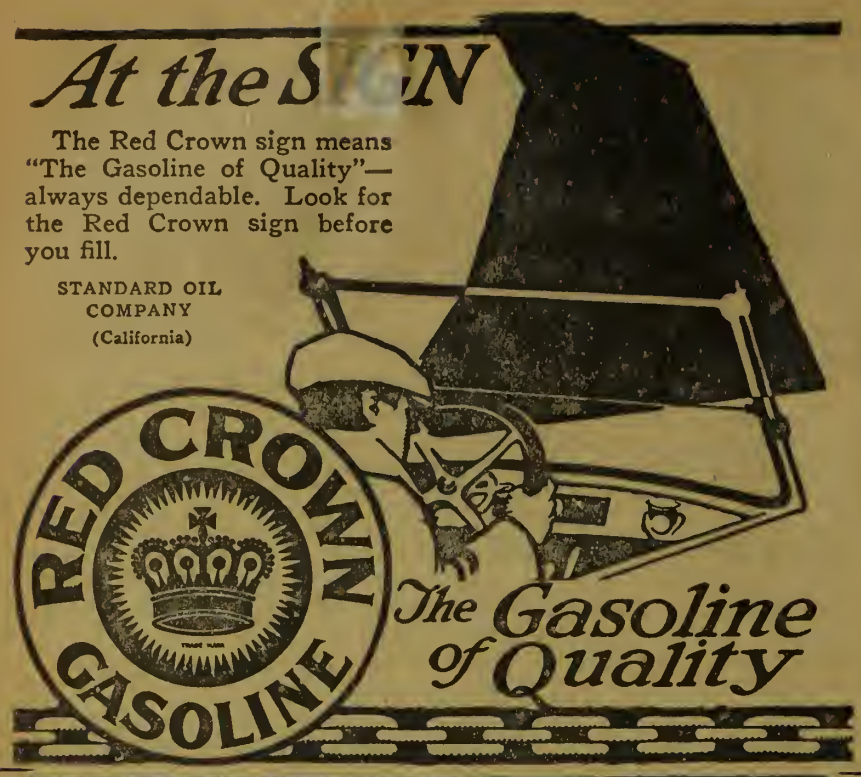
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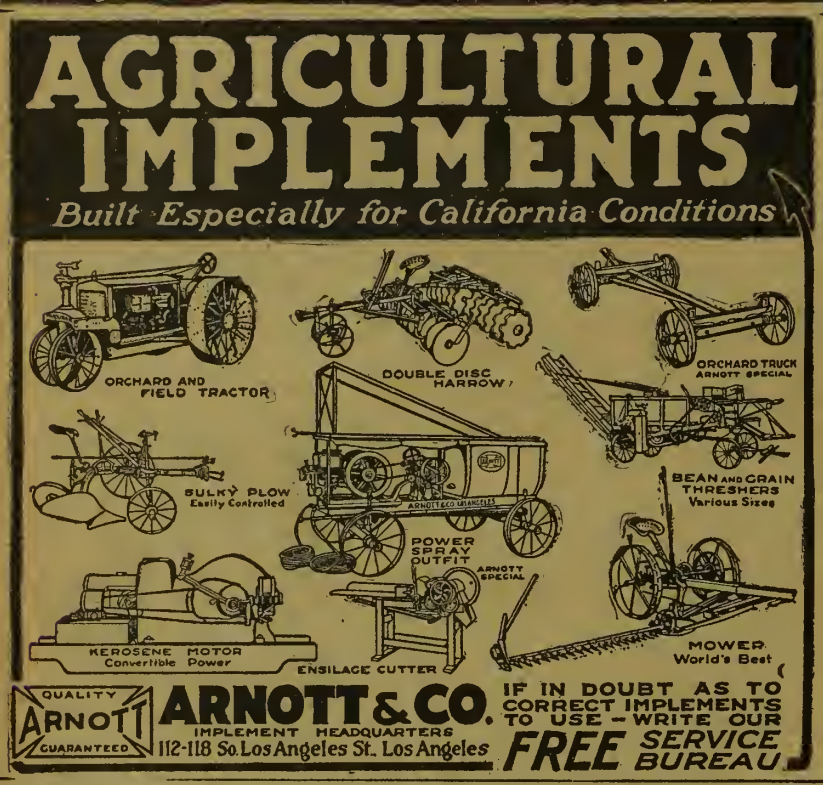
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Attend the California International Livestock Show, San Francisco, Nov. 1 to 8.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Los Angeles Markets

Los Angeles, October 1, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 68 lb.; prices to retail merchants in 1-lb. squares, 64@65.

Dairy Exchange prices last week on extras:

Sept.	24	25	26	27	29	30
'19	66	..	66	66	67	68

CHEESE

Brokers' prices:

California, fresh, lb., 35; price to retail merchants, 35@36.

EGGS

Fresh extras, Produce Exchange closing price, 68 dozen, price to retail merchants 71 dozen; case count, Produce Exchange closing price 60 dozen; price to retail merchants, 68 dozen; pullets, Produce Exchange closing price, 55 dozen; price to retail merchants, 52; pewee pullets, 43.

Dairy Exchange prices last week on extras:

Sept.	24	25	26	27	29	30
'19	63	..	64½	64½	68	68

POULTRY

Prices to producers: Hens, lt. 30, heavy, 30@33; colored over 4 lbs., 35; broilers, 40; fryers, 35; roasters, 31; old roosters, 19; capons, 42; ducks, old, 23; ducklings, 27; ducklings, Pekins, 3½ up, 29; geese, 25; turkeys, 34@42; squabs, 45.

Belgian hares, live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 16.00; 150 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.50; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 30, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Stockton Burbanks, 2.75@3.00; poorer, 2.25@2.50; local lug, 1.00.

Sweets, lb., 2½@3.

Onions: Homegrown and Stockton White Globes, 90@1.00 per lug box; 2.75@3.00 per cwt. Yellow varieties, 3.00@3.25 cwt.; lug boxes, 85@1.00.

Garlic: Local, per sack lots, 30.

VEGETABLES

These are the actual prics obtained September 30, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 7@12; Limas, 10@12.

Carrots, doz., 30@40.

Cauliflower: Local, per doz., 1.25; field crates, 1.75@2.00.

Cucumbers: Local lug, 60@75; best, 85@90; others fair quality, 40@50; pickles, 2.00.

Celery: Local, best, 1.10@1.25 dozen 4.75@5.50; others, 4.50@4.75.

Corn: Roasting ears, best, 75@85 lug; poorer, 60@80.

Eggplant, best, lb., 2@3½.

Peppers: Bell, lug, 40@60; Chili, 35@60; Pimientos, 6.

Lettuce, local, cr., best, 90@1.25.

Peas, local, lb., 11@13.

Rhubarb: Local, box, 1.00@1.35.

Squash: Summer, lug, 75@1.00.

Tomatoes: Lug, ripe, 85@1.00; shipping, 1.00@1.25.

Turnips, doz., 30@45.

FRUITS

These are the actual prices obtained September 30, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: Gravensteins, scarce; packed, 2.50@2.75; Bellefleurs, best packed, 1.60@1.65. Local: Jonathans, packed, 2.50@2.75; crab apples, 2.50@2.60. Northern: Gravensteins, scarce; packed, 2.50@2.75; large size, 2.85@3.00; loose, 5 per pound; Jonathans, 2.75@3.25. Utah, Jonathans, loose, 6½@7 per pound.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews, 65@85; Paul Rose, best pack standard, 1.25@1.50; Ponies, 75@1.00; loose pack, 75@95.

Grapes: Local and Northern: Tokays, 7@8 per pound; Muscats, 3½@4; Malagas, 5@6; Hamburgers, 3½@4; Concords, loose, lugs, 9 per pound; Black Cornichons, mostly 7.

Nectarines, lb., best, 6@7; poorer, 5@6.

Peaches: Demand and movement moderate. Local, various varieties, 5@6 lb.; others 4@5; lug boxes, best, 1.75@2.00; others, 1.00@1.50.

Pears: Northern Bartletts, No. 1, 7@9 lb.; No. 2, 5@6 lb.; lug boxes, 1.75@2.00; packed, 3.25@3.50.

Pineapples, lb., 12@13.

Plums: Hungarians, best, 5; Grand Dukes, 6 lb.

Quinces: Local lug, 1.40@1.50; lb. 5c.

Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1, small ½ lb.

Lemons: Valley stock: Fancy, packed, 6.50@6.75; loose, 5.50@5.75; local: packed, 3.65@4.00; best, 4.00@4.50; loose, 3.25@3.50, 4.75@5.50; best brands, 5.50@5.75; local pack, 2.50@3.00.

Oranges: Valencias, medium fancy, 4.75@5.50; local pack, 2.50@3.50.

Grapefruit: Fancy, 64s-80s, mostly 5.00@5.50; 46s and 96s, 4.00@4.50; choice, 2.50 up.

HONEY

Demand and movement good, good inquiry, market firm. Carloads f. o. b. usual terms: White Orange Blossom, mostly 20; White Sage 20; Extra Light Amber Sage 18½@19; Light Amber Sage 17½; Light Amber Alfalfa, 15@16 lb. Beeswax: l. c. l. sales, mostly 40 lb.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	19.00@21.00
Barley	16.00@21.00
Alfalfa	18.00@23.00
Wheat or Barley straw	9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, September 24:

Alfalfa Meal, per ton $35.

Alfalfa Molasses, per ton $35.00.

Eastern Kafir, 2.52½@2.57½.

Oats Red, Rustproof, 2.83¾.

Beet Pulp, per ton, $46.

Eastern Milo, 2.47.

Corn No. 1 Yellow, 3.27½.

San Francisco Markets

San Francisco, September 30, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	66
Firsts	Nominal

Prices extras last week and year ago:

Sept.	23	24	25	26	27	29
'19 ...	63½	64	64	65	..	66
'18 ...	..	..	61	61½	..	..

CHEESE

Dairy Exchange quotations:

Cal. Flats	37½
Ore. Triplets	32½
Jack, full cream	25@27

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	75½
Firsts	Nominal
Extra Pullets	63
Undersized	47

Prices extras last week and year ago:

Prices extras last wcek and year ago:

Sept.	23	24	25	26	27	29
'19 ...	68½	69½	71½	73½	..	75½
'18 ...	..	..	63	64½	..	..

POULTRY

Hens, W. Leghorns, 26@30; colored, 34@35; roosters, young, 34@35; old, 18@20; broilers, 30@34; fryers, 30@31; squabs, 2.50@4.00 dozen; ducks Indian Runner, 18@20; Pekin, 21@24; geese, 25@27; broiler turkeys, 38@40.

Don't Miss the Big Money
THE virgin soil that the stumps keep out of cultivation in the best soil you have You can pull out an acre or more of stumps in a day at a cost of from 3c to 5c per stump. No matter how big or tough the stump, it walks right out when the Hercules gets hold of it. With the stump come all the long tap roots that spread out in all directions. The land is left ready for cultivation
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Trappers Guide and Trap Catalog free

Belgian hares, live, 16@17; Jackrabbits, 1.50@3.00 dozen.

VEGETABLES

Wholesale selling price:
Beans: String, 3@4; Limas, 4@5.
Carrots, per sack, 1.00@1.25.
Cauliflower, 75@80.
Cabbage, doz., 40@55.
Celery, doz., 30@35.
Cucumbers; Large box, 75. Pickling, 6 per lb., No. 2 grade, 3 lb.; No. 3 grade, 1½.
Corn, doz., 10@20; sack, 1.50@2.25.
Eggplant, southern, ly., 65@75.
Lettuce, doz., 25@35.
Peppers, Bell, lb., 75@1.00; Chili, 40.
Peas, lb., 5@6½.
Pumpkins, per sack, 75.
Radish, 7@9 doz bunches
Tomatoes: Sacramento River, 75@90.
Spinach, doz. bunches, 25@35.
Squash: Summer, cr., 75@90; Italian, 75@90 bx.

RICE

Prices per 100 lb. bag:
California: Fy., 10.50; ch., 10.25; flour, 5.25.

DRIED FRUITS

Prunes:
Prune prices announced by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.
Peaches:
Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1, 1920, are as follows:
Standard yellows, 14¾c; Muirs, 15c.
Choice yellows, 15½c; Muirs, 15½c.
Fancy yellows, 16½c; Muirs, 17½c.
Extra fancy yellows, 17¾c; Muirs, 18¾c.
Slabs, yellows, 14½c.
For "practically peeled" add 1½c per pound (any grade).
Prices above are all bulk basis.
For packing in 50-pound or 25 kilo boxes add 1 cent per pound.
25-pound or 12½ kilo boxes, add 1¼c per pound.
10-pound boxes, add 2c per pound.
Blue ribbon peaches packed 2-pound carons, 12 per case, $10 per case.
Blue ribbon peaches packed 2-pound cartons, 24 per case, $10 per case.
Bakers' special, "practically peeled," 16¾c per pound, bulk basis.
Apples:
Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; Fancy (in 50s), 23@23½.
Figs:
White: Cooking (in 50s), 15@16; choice (in 50s) 17@18, extra choice (in 50s) 19@20, fancy (in 50s) 21@22, extra fancy (in 50s) 23@24. Bricks, 12 No. 10s, 1.60@1.67½; bricks, 24 No. 8s 2.55@2.65, bricks 50 No. 6s 4.00@4.15, bricks, 70 No. 4s 4.20@4.35, layers, No. 10 2.50@2.80. Calimyrna: Cooking (in 50s) 19, choice (in 50s) 23, extra choice (in 50s) 24, fancy (in 50s) 26, extra fancy (in 50s) 27½, bricks, 10 1-lb. 2.75, layers, No. 10 2.95@3.20. Black: Standard 14, choice 17@18, extra choice 18@19, fancy 19@20.
Pears:
Standard 20, choice 22½, extra choice 24, fancy 26@27.
Raisins:
California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package 15, fancy, 16s, package 15, fancy, 12s, package 11¾, choice, 16s, package 14½, choice, 12s, package 11⅜, bulk, fancy in 25s 14¼, bulk, bakers, in 25s, 13½, bulk, Malagas and Feherzagos, in 25s 13. Loose Muscatels: 4-crown, in 25s 14¼, 3-crown, in 25s 13¾, 2-crown, in 25s, 13¼, 1-crown, recleaned, in 25s 14. Seedless: Thompsons, 16s 15½, Thompsons, 12s 12⅛, Thompsons, bulk, recleaned, in 25s 14½, Thompsons, bulk, bakers, in 25s 15½. Bleached Thompsons: Choice, in 25s, sulfur 18, Fancy, in 25s, sulfur 18½, Extra Fancy, in 25s, sulfur 21, soda dipped, in 25s 17¾, oil dipped, in 25s 17¾. Sultanas, 16s 15¼. Sultanas, bulk, in 25s 14¼. Layers: 6-crown, flat pack, 20s, per box 4.05, 6-crown, flat, 10s, per box 2.20, 6-crown, flat pack, 5s, per box 1.20, 4-crown, flat pack, 20s, per box 3.20, 4-crown, flat pack, 10s, per box 1.75, 4-crown, flat pack, 5s, per box 1.00, 3-crown, tray pack, 20s, per box 3.10, 3-crown, flat pack, 20s, per box 2.95, 3-crown, flat pack, 10s, per box 1.60, 3-crown, flat pack, 5s, per box 95, clusters, 20-1s, cartons 3.45, clusters, 12-2s, cartons 3.80, clusters, 4-5s, cartons 4.50, vineyard run, 100s 13.00.

ALMONDS

California Almond Growers Exchange opening prices:
Nonpareil @32¼, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

Citrus Markets

Los Angeles, October 1, 1919.

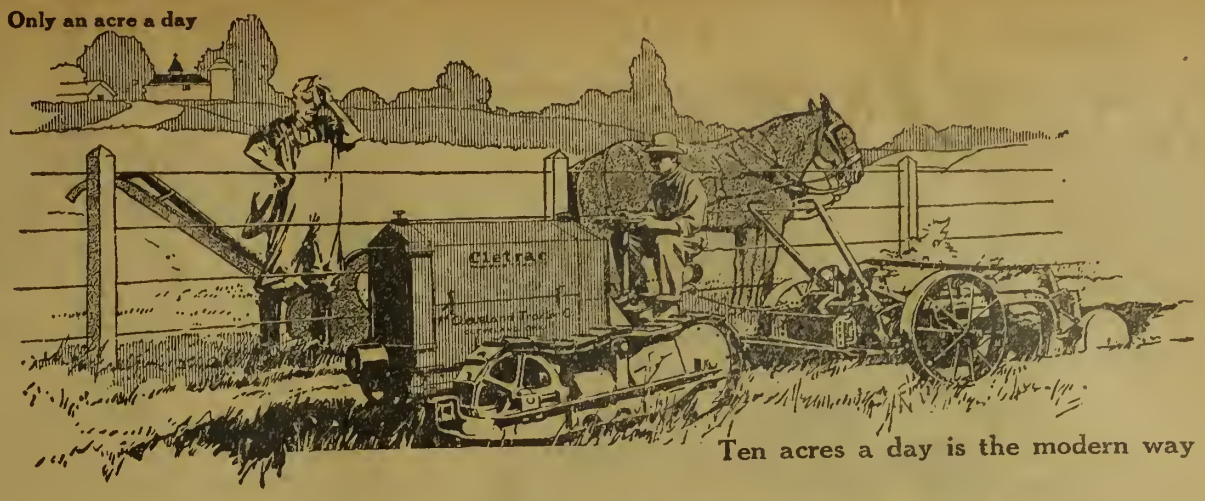
The car shortage has affected shipments, nearly 100 cars a week being cut off. This has resulted in creating a demand for the few which have gone forward and good prices are prevailing. St. Louis and other Middlewest points are, however, paying lower prices. There are still nearly 3000 cars of Valencias to go forward. The holdovers will, however, fill requirements when Navels are usually going forward. Navels will be later than last year.

Lemons are exceptionally strong, $7.00 and $8.00 prices being secured in auctions.

Shipment

Shipments of citrus fruits to date since November 1, 1918; Southern California: Oranges, 32,654 cars, lemons 9178, total 41,832. To same date last season: oranges, 12,862, lemons 6566, total 19,428. Central California this season: Oranges, 4427, lemons 354, total 4781. To same date last season: oranges, 2539, lemons 115, total 2654. Northern California: oranges, 244, lemons 2, total 246. Last year same date: oranges, 203.

Only an acre a day



Ten acres a day is the modern way

Which side of the fence are you on?

Are you a one acre *laborer*—or a ten acre *farmer*?

Do you cling to old, slow, out-of-date animal labor—or are you farming the modern way with the Cletrac?

The Cletrac Tank-Type Tractor enables you to do *more* work and *better* work *more* days in the year—with *fewer* men, *shorter* hours and *less* expense.

It produces *larger* and *better* crops at a *lower* cost thus materially increasing *your profits*.

It plows, harrows, plants, reaps, binds, threshes, cultivates, hauls, saws—does practically all the things that your horses, mules and stationary engine used to do—and does them *better, cheaper* and *faster*—requiring considerable *less man labor* to accomplish the *same amount of work*. You—or your wife—or your boy, can operate the Cletrac and do as much work with it as was formerly done by *three* men and *three* teams.

The Cletrac runs on metal tracks like a locomotive. It goes over the top of the ground,—doesn't sink in, doesn't pack down the earth even when it is freshly plowed. No power is wasted in moving the machine itself *through* the soil.

The Cleveland Tractor Co.
19007 Euclid Avenue Cleveland, Ohio
Largest producers of tank-type tractors in the world
Smith Bros., 1620 South Figueroa St., Los Angeles, Calif.
Southern California Distributor

Cletrac
TANK-TYPE TRACTOR
(Formerly known as the "Cleveland Tractor")

The Cletrac is the answer to the acute farm labor question. Call on the nearest Cletrac dealer and look it over carefully.

Send for our booklet "Selecting Your Tractor." It is full of good, sound, practical information that every farmer should have.

Hairy Peruvian Alfalfa Seed

Others Sell it! (You Pay the Commission.)
We Grow, Reclean and Sell
Every Sack Sealed With This Certification Tag

Our Land is selling for $400 per acre. Hence the prices

ARIZONA CERTIFIED ALFALFA SEED

This certifies that the alfalfa field of Morton located in Yuma Valley has been examined by me in cooperation with other representatives of the Arizona Experiment Station and that this field is commercially pure **Hairy Peruvian**

No warranty is given as to identity, purity or viability of this seed.
J. W. Longstreth
County Agricultural Agent, Yuma.

Prices:
1sk (165lbs) 38c
10sk " 37c
15sk and over 35c

We Guarantee Identity of Every Sack. Growers Initials on Each Sack.
Fields Personally Inspected by J. C. Power, Vice Pres. and Gen. Mg'r.
YUMA VALLEY PRODUCE GROWERS ASSN., Yuma, Arizona

PLACE YOUR ORDER NOW FOR **NITRATE OF LIME**

Guaranteed not less than 13 per cent Nitrogen—almost 100 per cent Pure.
Nitrate of Lime supplies Nitrogen in the most available form. Packed in solid wooden casks about 240 pounds.
Ask for prices October-November delivery in warehouse, Los Angeles and San Francisco.

C. HENRY SMITH, General Agent
Pacific Coast and Hawaiian Islands
311 CALIFORNIA STREET SAN FRANCISCO

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, MARCH 21, 1916.

of California Cultivator, published weekly at Los Angeles, Cal., for October 1, 1919.
STATE OF CALIFORNIA,
County of Los Angeles, ss.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Frank H. Thomas, who, having been duly sworn according to law, deposes and says that he is the publisher and business manager of the California Cultivator and that the following is to the best of his knowledge and belief, a true statment of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

NAME OF—	POST OFFICE ADDRESS
Publisher, Cultivator Publishing Co.,	Los Angeles, Cal.
Editor, C. B. Messenger,	Los Angeles, Cal.
Managing Editor,	
Business Manager, Frank H. Thomas,	Los Angeles, Cal.

2. That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addrsses of stockholders owning or holding one per cent or more of the total amount of stock).

Cultivator Publishing Co.,	Los Angeles, Cal.
Frank H. Thomas,	Los Angeles, Cal.
R. M. Teague,	San Dimas, Cal.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities, are: (If there are none, so state.)
None.

4. That the paragraphs next above, giving names of owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holders appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is ——. (This information is required from daily publications only.)

FRANK H. THOMAS, Manager.

Sworn to and subscribed before me this 23rd day of September, 1919.
(SEAL.) ROBERT WHITFIELD,
Notary Public in and for Los Angeles County, Cal.
(My Commission expires April 4, 1923.)

WEATHER REPORT

San Francisco, California, Sept. 20, 1919.

Stations	Rainfall Wk.	Rainfall Season.	Norm.	Temp. Max.	Temp. Min.
Eureka	0	.81	75	66	50
Red Bluff	0	.48	33	100	58
Sacramento	4	.40	17	100	54
San Francisco	0	.12	06	92	54
San Jose	0	.01	20	98	48
Fresno	0	0	02	96	56
San Luis Obispo	0	0	20	90	48
Los Angeles	0	0	0	80	58
San Diego	0	.01	0	74	60

MALTHOID
and
RU-BER-OID
READY ROOFINGS

Good ready roofings consist of felt, saturated and coated with waterproof materials.

Sun and rain, however, are respecters of neither persons nor things, and the continued protection afforded by any roofing—its lasting ability—depends absolutely on the quality of the materials that go to make it.

That is why we maintain our own refineries for turning out saturating and coating compounds of the quality needed to make Malthoid and Ru-ber-oid Roofings *long-lasting.*

Pictured above are some of the huge stills used for this purpose. Crude oil is carefully distilled by a special process which retains the natural life and vitality of the asphaltic residues. These residues are then scientifically combined into highly waterproof and sun-resisting compounds.

Tough, long-fibre, wool-and-cotton felt, made in our own mill, is first saturated and then coated with these special compounds, to make Malthoid and Ru-ber-oid Roofings—all under the care of experts, and with the most modern machinery.

We have been making ready roofings for 35 years. We are particular about quality because experience shows that *quality* roofing is the only kind that will not rot or dry out, and that is fire-resistant. Malthoid and Ru-ber-oid are therefore economical to use on barns, homes, sheds, shops, garages or factories. The price is higher, but the cost is less.

THE PARAFFINE COMPANIES, INC.
San Francisco

PABCO PRODUCTS
Roofings, Felts
Building Papers
Waterproofing
Materials
Wall-Board
Floor Covering
Industrial Paints
Box Board
Paper Boxes
Fibre Containers

EACH THE STANDARD OF ITS KIND

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Eggs Without Electricity

By Jean A. Koethen

THE use of electricity in the laying house is so generally recommended and so generally practiced by California commercial poultrymen that the position of the minority who neither use nor recommend making the hen's winter day as long as her summer day invites interest and challenges respect. I found such a man in Riverside last winter. He declared that his hens were making a higher egg record in the old way than were those of his neighbors who lengthened the day. Recently I found another, a large commercial poultryman, too, in the Burbank district.

The advocates of electric light argue that hens lay fewer eggs in winter than in summer because the day is shorter. Instead of getting out at five they doze on the roosts till seven, and instead of working till seven in the evening, they go to bed at five. Here are four perfectly good hours lost in December and January. Why not provide artificial daylight for these four hours and so give the biddies a chance to eat more and lay more eggs?

I hold no brief for either side. The "ayes" seem to have the best of the argument, and so I am willing to join the procession. My personal sympathies, however, are all with the "noes," for if a hen hates half as badly as I do to get up before daylight she is greatly to be pitied. The daylight saving scheme was lovely for folks who can lie till eight every morning, but for the poor commuter who must hustle off at seven summer and winter it was no joke. And so I would rather do without an extra egg or so and let poor Biddy have the winter morning sleep she has earned through long summer days of scratching. However, as I said, the "aves" have it. Only let us hear what the "noes" have to say.

Section of Laying House

Notice the wooden shades which may be raised or lowered or placed at any angle to protect from sun or rain or wind. Notice also the wooden shelter under which the hens are gathered around their mash trough.

On One San Fernando Ranch

On the Nielson poultry ranch, owned by two Nielsons, father and son, there are 400 hens and pullets in the laying houses, which cover a good part of the ten acre ranch. The rest, outside of residence and garden, is planted to green stuff, one and one-half acres being in alfalfa, which is the main dependance for green feed. The ten laying houses which accommodate 400 hens each, are each fifty feet long and sixteen feet wide, and all have cement floors. The double yard system is followed, the yards being alternately planted to barley and opened to the hens. This system keeps the soil sweet, for there is nothing but a green crop that will thoroughly purify the soil of a poultry yard.

University Rations

The ranch is run strictly according to experiment station methods, but the owners do not consider it necessary to follow any one station in all respects. In raising their baby chicks they follow the California station in both management and feeding, but their laying ration is that of the Missouri station, which is as follows:

Scratch feed: two parts wheat, one part milo, one part corn. This is fed at night, one and three-fourths ounce being allowed to each hen. As the grain is measured by the sack it is easy to figure out how much must be allowed to each house.

Dry mash: one hundred pounds each of bran, shorts, corn meal and beef scrap. This is kept before the hens in hoppers, and is never moistened. Cut alfalfa is fed at noon in troughs, a full tub being allowed for each five hundred hens.

On this ration, which offers both balance and variety a good egg yield and strong fertility are assured. Corn is considered an essential part of both scratch feed and mash because the nights in this section are uniformly cool. "We don't know anything about hot nights here in California," declared the younger Nielson, who had just returned from a summer trip to the middle west, "and our Leghorns need corn the year round to keep them from chilling at night."

The Oregon method of feeding chicks, namely, keeping coarse corn meal and beef scrap before them in separate hoppers, was tried with one lot of pullets last year, and while the birds made good growth, it was not quite so good as that of the birds fed on the California ration.

Cull by Color

The color test, as recommended by Professor Dougherty, is carefully followed in culling out the slackers. Culling is commenced in May and continued till August, the birds being gone over on May 15, June 15, July 15 and August 15, or as near as possible to those dates. "We go most by the vent," said Mr. Nielson, "when that is yellow it invariably means that a hen has stopped laying." The Hogan system is also followed and the two systems rarely fail to corroborate each other. "How about culling according to late or early molt?" I asked. "Oh, that amounts to the same thing," he replied, "only we prefer to cull out those that have stopped laying as soon as they stop, rather than wait for them to molt." Culling is continued till the hens are five years old.

No Electric Lights

As I have already hinted, electric lighting is not followed in the laying houses. They are convinced that while a few more eggs might be the result the first season, this small gain is more than balanced by poor fertility and loss of vigor. "It is all nonsense," declared Mr. Nielson, "to say the hens need more time to eat. Why, even the shortest day in winter they do not eat all the time. A hen can't stand being kept at work from fourteen to sixteen hours a day the year round. I know of more than one man who has [illegible] to [illegible] out of business because [illegible] his hens unduly. They [illegible] to pieces."

All th[illegible]m this ranch are marke[illegible] the Poultry Producers [illegible] owners are enthusiastic b[illegible] for that organization, because it not only secures them better prices, but relieves them of a good deal of responsibility.

POULTRYMAN'S CALENDAR—OCTOBER, STARTING THE PULLETS

While many of the earlier pullets begin laying in July and August and even in June, no regular production can be expected from March and April pullets until October. To get them into laying form as speedily as possible after they have reached maturity without forcing them to the detriment of health is the poultryman's problem. At the Maine station the pullets are put in the laying house in September, but are not closely confined at once. Their mash at first consists of 300 pounds bran and 100 pounds of corn meal, low-grade flour and meat scrap. The first of October this is changed to 200 pounds of bran and 100 pounds each of corn meal, low-grade flour, gluten meal and meat scrap. The first of November 50 pounds of linseed meal is added to the October formula. This gradual narrowing of the ration brings the birds gradually into full laying form, keeps them from moulting in early winter and secures an even production during the winter. At the California station the pullets are put on a maintenance ration of bran and beef scrap (95 per cent bran and 5 per cent beef scrap) as soon as they begin to show signs of early maturity and are kept on this mash until the middle of September or first of October, when they are given the regular laying mash. This keeps them from laying before they are fully developed and prevents fall molting.

For fall layers, whether pullets or hens, there is no better ration than that used at the Vineland International Contest. The scratch feed consists of equal parts by weight of cracked corn, heavy oats and wheat; the mash of equal parts bran, middlings, corn meal, ground oats and meat scrap.

Poultry Queries

Conducted by J. A. Koethen

Crooked Backs

We have Rhode Island Red chickens and several of the young ones have crooked backs, the tails of some being turned clear around to their sides and some of their backs are humped up. Most of them are roosters and were all right when they were chicks. What is the cause of this?—Subscriber, Elsinore.

Lack of sufficient lime and phosphorus in the ration has made the bones of these chickens too soft. Possibly they have also been crowded on the roosts or have slept too long in a box or on a floor where they crowded together and thus bent these soft bones out of shape. If their ration had contained bone meal as well as meat and grain and greens, and oyster or clam shell had been kept before them their bones would have been so strong and hard that a little crowding would not hurt them. Oats, either sprouted or ground, for chicks the rolled breakfast oats, wheat bran and bone meal are the feeds necessary to the making of bone and muscle. If you add these feeds to the ration now you will keep other birds from developing this trouble, but the roosters that are already deformed had better be eaten as soon as possible.

Sudan for Poultry

Please give the value of Sudan grass for poultry. When would be the proper season to sow seed in Santa Cruz County and would it be injurious to the crop to cut when about three inches high and keep it cut frequently for chickens?—Subscriber, Santa Cruz.

I saw a very thrifty crop of Sudan grass growing on a Burbank poultry ranch in August and was told that it is excellent green feed for summer, but that it cannot be grown after the nights become very cold or frosty. My impression is, that from May to October is about the limit of its life anywhere in California. In a warm district it might be sown as early as April. On the ranch where I saw it growing, it was allowed to grow to a height of a foot or more, and then was cut and run through a clover cutter for the chickens. I was told that if thoroughly watered after being cut it would grow again to cutting height in a month.

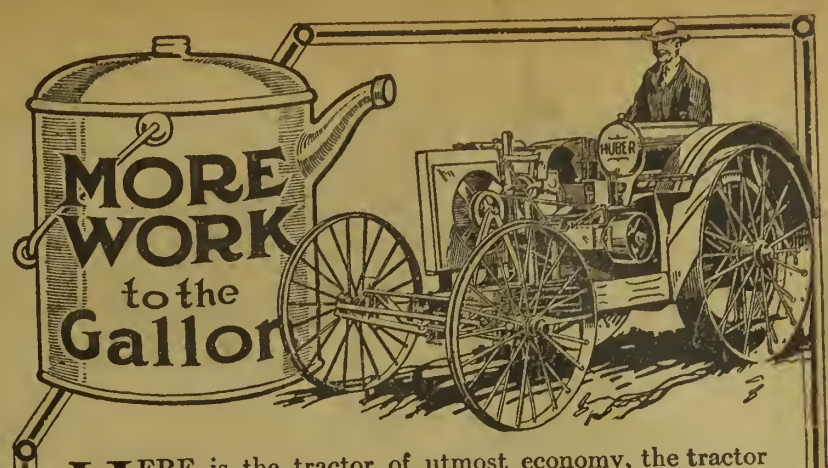
THE MOTHERING FATHER

The "mothering" of things means a whole lot more than their "fathering." A lot of us in this world are ready to father everything that is good, but when it comes to mothering or caring for the helpless a real mother is necessary. However, there are exceptions. One of these is given to Cultivator readers by Miss L. J. Donaldson who writes of an experience:

The old turkey hen had stolen her nest in the hay field and when the mower came she was not quick enough to escape and lost both her legs. She had to go the way of all turkeys, and the eggs were taken home and finished under a setting hen, or nearly so, for when the first little poult appeared she proceeded to kill it so that the rest of the eggs were taken from her and the incubation finished in warm flannels. With the busy housewife the mothering of these poults was not entirely satisfactory. However, they did well for a day or two, then as they were in the sunshine at the doorstep the old turkey gobbler realized the time had come for raising his own family. At night he hovered them and by day he cared for them. The entire flock was given to him and he raised a thoroughly happy and contented family of turkeys that never knew any other mother.

Gentleness is one of the virtues with poultry. It is just as easy to have the birds so tame that they will come up and eat out of your hand as to have them so wild that they will shy off when you come in sight of them

The poultry business is not for the lazy man who has made a failure of everything else. He will make a failure of this also.



HERE is the tractor of utmost economy, the tractor that gets most from every gallon of fuel because the direct drive from motor to both rear axle and belt pulley saves power.

THE HUBER Light Four

is the right sized tractor for every sized farm. It is powerful enough to pull three 14-inch bottoms and turn an acre an hour, and light enough to work on plowed ground without packing it down.

Thousands of Huber Light Fours are in successful use. It is the tried and proved tractor. Huber owners are Huber boosters. For 40 years Huber has built steam tractors; and for 20 years gas tractors. The Huber Light Four is the best tractor Huber ever built.

It plows, harrows, drills, pulls a binder—does every type of heavy field and belt work *economically*. So simple a boy can run it, and anyone who knows an automobile can keep it in repair.

Every one interested in tractors should read the "Tractor in the Making," a reprint in booklet form. Tells vitally interesting facts about tractors. It is free for the asking. *Write for your copy today.*

Weight 5,000 pounds; pulls three 14" bottom plows; 12 h. p. delivered to the drawbar; 25 h. p. at the belt; Waukesha, four-cylinder motor; Perfex Radiator; Hyatt Roller Bearings; burns gasoline, kerosene or distillate; center draft; two speeds, 2½ and 4 miles per hour.

THE HUBER MFG. CO., Marion, Ohio

THE HUBER TRACTOR SALES CO.
1012-14 So. Los Angeles St. Los Angeles, Cal.
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Old Mission-Balloon Route Trolley Trip

Two Dollars' Worth of Pleasure
Two Days' Travel Reduced to One for $1.00

Many Free Attractions Enroute and Novel Sights
Each Mile and Each Turn of the Road

PACIFIC ELECTRIC — COMFORT-SPEED-SAFETY

Your Visiting Friends Will Appreciate This Trip

Last Car 9 A.M.
From Main Street Station, Los Angeles

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Procure New Illustrated Descriptive Folder Today

O. A. Smith, General Passenger Agent, Los Angeles

Coulson's
Baby Chick
Milk Mash

The Best Feed
for first six weeks

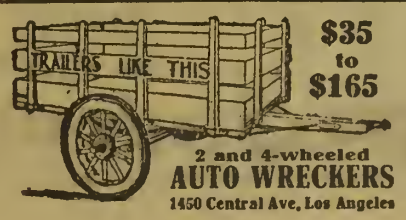
Write for particulars
Coulson Co.
Petaluma, Calif.

For Sick Chickens

Preventive and curative of colds, roup, canker, swelled head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Gellen, Mich., says: "Have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Viekermen, Rockdale, N. Y., says: "Have used Germozone 12 years; the best for bowel troubles I ever found." Frank Sluka, Chicago, Ill., writes: "I have lost but 1 pigeon and no chickens in the 3 yrs. I have been using Germozone." C. O. Petrein, Moline, Ill.: "I never had a sick chick all last season." Bernard Hornung, Kirksville, Mo., says: "Cured my puniest chicks this spring." Ralph Wurst, Erie, Pa., says: "Not a case of white diarrhoea in 3 yrs. I raise over a thousand a year." Good also for rabbits, birds, pet stock.

GERMOZONE is sold generally at drug and seed stores. Don't risk a substitute. We mail from Omaha postpaid in new 25c, 75c and $1.50 sizes. Poultry books free.

GEO. H. LEE CO., Dept. 418 OMAHA, NEB.



$35 to $165

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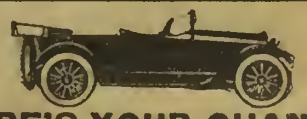
1450 Central Ave, Los Angeles



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This 5 Passenger, 4 cylinder, 37 H. P. BUSH Car—Timken Bearings—Willard Batteries—2 Unit Starting & Ltg.—116-inch whl. base. Write at once for the best Automobile Offer in existence—Don't wait—Cars guaranteed or money back.

BUSH MOTOR CO. Address J. H. Bush, President. Dept. M166 Bush Temple, Chicago, Illinois

Sperry Rolled Oats are specially kiln-dried

That's all important because it eliminates the fusel oil which gives ordinary rolled oats that strong rancid taste.

Sperry Rolled Oats are so pure and tasty and wholesome that you'll notice the difference at once. It's our special process of kiln-drying that brings out their nut-like flavor.

—that's why they taste better!

And not only do you get full flavor-value in Sperry Rolled Oats—you get full food-value, too! Nor must you suppose that Sperry Rolled Oats can be used *only* as a breakfast dish. Here, for example, are two uncommon ways to use this wholesome and delicious cereal:

Note: All measurements are level. Flour is sifted once before measuring. A half pint measuring cup is used.

Sperry Rolled Oat Cookies

½ cup shortening; 1 cup sugar, granulated or brown; 1 egg; ⅓ cup milk; 1¾ cups Sperry Rolled Oats; ½ cup chopped raisins; ½ cup chopped walnuts; 1½ cups Sperry Drifted Snow Flour; ½ teaspoon salt; ½ teaspoon soda; 1 teaspoon cinnamon; 1 teaspoon nutmeg.

Cream shortening well, add gradually, while beating constantly, sugar. Then add egg, well beaten, milk, Sperry Rolled Oats, raisins and chopped nuts. Mix and sift dry ingredients and add to first mixture. Drop from tip of spoon on well greased pan, about 3 inches apart, and bake in a moderate oven about 15 minutes.

Sperry Rolled Oat Timbales

Pour left-over cooked Rolled Oats into wet custard cups. When cold scoop out centers and fill with well-seasoned chopped cooked meat or fish. Place in a moderate oven until brown. Serve with a tomato sauce.

Ask for Sperry Rolled Oats in the familiar Red Package—at the store where you do your trading.

SPERRY FLOUR CO.

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Ten mills and forty-four distributing points on the Pacific Coast

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"A Sperry Product"

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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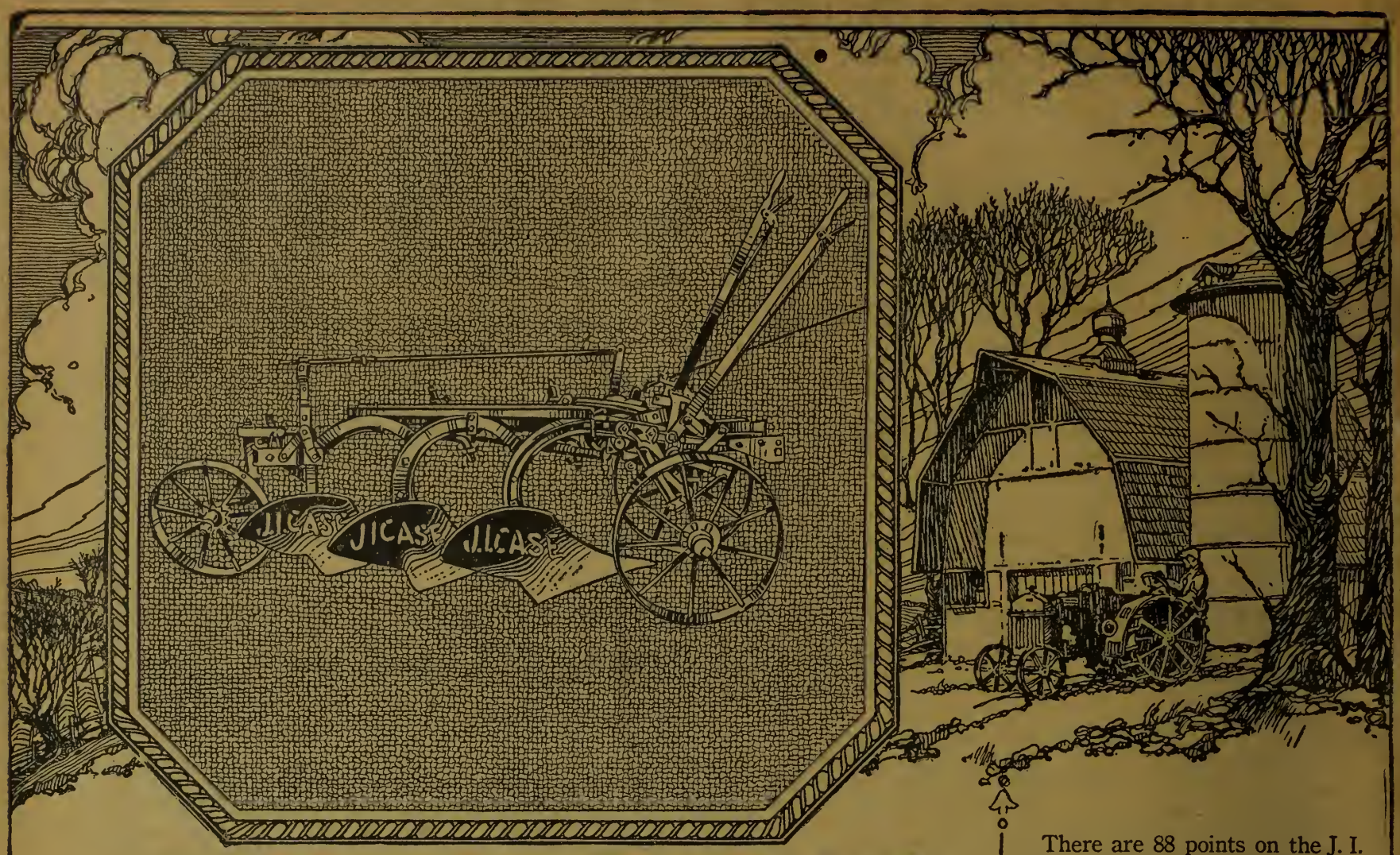
OCT 17 1919

Rich Fields of State Land Settlement in Butte County

Substantial improvements which have been suggested by state engineers and practical farm people prevail in the land settlement colony at Durham. There are no high priced houses; there are no public buildings; some of the farm equipment is not of the highest quality; but so far as improvements have been made they have been practical and permanent. There are concrete gates, substantially built culverts and good roads. Naturally the land is very rich, and fine stands of alfalfa and profitable crops are the results of the first year's work. The farm in immediate foreground was the first one allotted.



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California Cultivator

Vol. LIII, No. 15 | Los Angeles, October 11, 1919 | One Dollar Yearly

Ship by Truck---in California

ATTENTION has been called to California's good roads by events of the past few days. Attention has been called to California's good roads several times before. This time it was by the trip of a number of loaded trucks covering the coast road from San Francisco to Los Angeles, and a number of other trucks—including some of those from San Francisco—which are this week covering roads in the southern part of the state, touching almost every Southern California city. But, strange as it may seem, the truck drivers are not fully satisfied with California's good roads and are saying: "Give us still better."

This is not said in criticism of the present condition of the roads so much as to call attention to the need for encouraging better transportation facilities. The trucks which were loaded in San Francisco and sent to Los Angeles were not specially manufactured or selected, but were taken from regular service or from the shop floor. There was nothing spectacular in the event, and no effort was made to break any speed laws; it was simply an efficiency test under normal conditions.

We regret that we have no comparative figures as to costs, but in general the assertion is made that shipment by trucks will mean great economy for the producer. It will also mean far better and more substantially built highways. The day of the concrete foundation — and of a much heavier concrete foundation than has usually been built—has come. The macadam road has given good service in California, but it will not give the long continued service which the concrete base will, and the fact that our state highway commission has turned almost exclusively to the more substantial foundation gives encouragement to the shipper of farm products and to the shipper of merchandise.

There are some counties in California which have passed ordinances limiting loads which may be transported over highways within their borders. It is possible such limitation is necessary with present day bridges and roadways, but we trust this need is only temporary and that these same counties are already devising means of increasing road efficiency, hence decreasing transportation costs. There should be no limitation of the country's advancement.

Speaking of the practicability of motor truck transportation Manager Hertz of the Moreland Truck Company says:

"Motor transportation is not an innovation. It has become a prime essential to business, and it is a necessity. When the motor truck was first given its taste of what the future held for it there were very few people who realized the advantages offered by it, and most people were content to look upon the motor truck as nothing more or less than an experiment. This contention, however, has been forever eliminated, because the motor truck withstood the rigorous tests it was subjected to and emerged with a perfect score.

"The practicability of the motor truck has been proven in telltale figures until now it is universally recognized as an established transportation medium. The history and success of motor transportation has been builded upon actual operation and execution instead of alluring inducements from governmental sources in the nature of material gifts.

"Competition is the greatest producer of efficiency known. During the past two years or more there has been considerable competition between the railroads specializing on short hauls and the motor truck. The reason for this is largely due to freight congested conditions which were somewhat caused by the hustle and bustle of war work. The immediate success and recognition of motor transportation as being superior to short line railroads is largely due to the war. Now that fighting has ceased 'over there' another momentous battle is being staged at home between the railroads and motor transportation."

FAST FREIGHT OF THE HIGHWAY

By James DeCamp

PERFECTION of the motor truck, coupled with a far flung network of the best highways in the United States, has provided a supplementary railroad which lays its own tracks to the gate of every Western farmer. This line is independent of sidetracks, schedules and semaphores. It has for right of way the wide west itself, from the Sierra Nevada to the Pacific, from the Canadian boundary to the cactus studded realm of revolutions and tamales.

Coming at a time when the steam lines are glutted with the greatest mass of freight business in history and their arteries swollen to bursting with unprecedented passenger travel, this rubber shod transportation system is hailed as nothing less than an intervention of providence. Throughout the troublous war years the motor truck proved itself a factor in national life by assisting the railroads in handling Uncle Sam's affairs. Now it is stepping forward to relieve the freight car shortage, to assume the bothersome short and medium hauls and thus enable the railroad administration to handle the wheat, barley, rice and other important crops.

When the train of 15 laden trucks, comprising the San Francisco "Ship by Truck" caravan, thundered into Los Angeles on Saturday, October 4, the miracle book of progress opened to a new chapter. With a combined cargo of some 86,000 pounds, including print paper, farm machinery, lubricating oils, automobile and truck tires, walnut bags, tractors, flour, goods made from California cotton by a California mill, and other articles the San Francisco expedition proved beyond argument that gasoline propelled vehicles are qualified to handle shipments of all varieties both expeditiously and economically.

With a brief stop for delivery and reloading the bay city caravan headed northward for the return trip over the coast route, the entire distance laid out for the trip comprising 1,000 miles. At the same time, not to be outdone by their up-state contemporaries, Los Angeles truck dealers launched a one week's demonstration and educational tour covering Southern California completely. This mammoth run, due for completion on October 11, called out some 35 entries, ranging from light delivery models to heavy commissary, refrigerator, oil tank and fire trucks. The itinerary included Long Beach, Downey, Norwalk, Artesia, Garden Grove, Santa Ana, Anaheim, Fullerton, Brea, La Habra, Whittier, Puente, Pomona, Ontario, Riverside, Colton, Redlands, San Bernardino, Upland, Claremont, LaVerne, San Dimas, Glendora, Azusa, Monrovia and Pasadena, freight being carried from point to point. Educational demonstrations, lectures and motion pictures were furnished for the crowds along the route while many of the towns arranged receptions, dances and barbecues in honor of the train.

For the agriculturist who is sending his product to market or ordering supplies of machinery the truck method of shipment is cheap, convenient and positive. Tedious trips to and from railroad loading points and delays due to rehandling, sidetracking, etc., are absolutely eliminated. The truck transport backs up to the barn door for your shipment. Once loaded the stuff is on its way, arriving at the curb or warehouse of the consignee, in most cases, before it is handled again. Similarly, implements, seed, etc., ordered for farm or orchard are delivered to the dooryard—not to a freight warehouse miles distant from their destination.

Truck tonnage includes so wide a range of capacities that shipments of every conceivable bulk and weight may be handled. Between the light delivery trucks, designed to carry about 1,000 pounds, and the 7½ ton monsters there is a flock of graduated sizes, all of which will be available under the plan of organized motor freight service. When a complete truckload of certain products is to be carried the cost of crating or sacking may often be eliminated, since the goods will not be subjected to the ordeal of frequent bumping about on freight platforms. For extremely perishable stuff refrigerator trucks are being put in operation on the longer runs, while in some districts large machines equipped with dumping apparatus have been used successfully for handling sugar beets.

In some parts of the state, where the short haul trucking business is highly organized, farmers have seen fit to turn over part of their land to truck gardening, and this with profitable results because of the excellent transport service furnished. The extension of motor hauling has also put many in touch with the market who heretofore have been partially isolated through lack of funds to purchase a truck. In this field the freighting by motor idea has created its own business and enlarged the profits of the farmers without competing with any other carrying medium.

In Southern California some 83 truck transportation companies are listed with the "Ship by Truck" bureau as operating regularly over 34 fixed routes. This comprehensive system has relieved the railroads of many unprofitable "short haul" jobs and encouraged farmers, produce men and dairymen to increase their output materially in this district. Some of the larger farm establishments are now reaching the city regularly with dairy products which heretofore have been practically worthless.

As the ship by motor movement gathers momentum a general readjustment of foodstuff prices is inevitable. Land unprofitable because of remoteness from railroad and market will be cultivated by men anxious to play the game to the limit as soon as they receive the assurance of transportation for their products. Others who have been growing staples will enlarge their acreage and tackle more perishable stuff, or install dairy herds. Communities will join in the purchase of trucks to carry the crops of the district to the large distributing centers and return loaded with groceries, clothing and supplies. The possibilities contingent upon the development of the scheme are unlimited.

But there are difficulties to overcome which will require the closest cooperation between merchants, farmers and the truck dealers and operators. The people must be educated to a full realization of the benefits obtainable. Bonds must be voted and pressure brought to bear for the augmenting of our good roads system and construction of certain connecting links. Above all the shipper must realize that the secret of the entire project lies in keeping the trucks loaded both ways and endeavoring to so regulate shipments that this may be realized.

The personnel and cargoes of the San Francisco caravan were as follows: Two ton White, The White Co., load of Firestone tires. One and a half ton Maxwell, Western Motor Co., print paper. Three and a half ton Kissel, Western Motor Co., print paper. Two and a half ton Service, Peacock Motor Sales Co., cotton goods. Four ton Fageol, Butler-Veitch Co., Fageol tractors. Two ton Federal, William L. Hughson Co., farm machinery. Three and a half ton Federal, William L. Hughson Co., Fordson tractors and oil. Two ton Garford, Garford Motor Truck Co., oil. One and a half ton Garford, Garford Motor Truck Co., paper. One ton International, International Harvester Co., farm implements. Three and a half ton Mack, International Mack Co., grain. Seven and a half ton Mack, International Mack Co., walnut bags. Two ton Nash, Pacific National Motor Co., flour. Three ton Packard, Earl C. Anthony Co., Goodyear tires. Three ton Packard, Earl C. Anthony Co., commissary truck.

The following Southern California companies entered from one to four trucks apiece in the Southern California tour, freight to be picked up and distributed along the route: Moreland, Moreland Motor Truck Co.; White, O. R. Fuller; Republic, Harold L. Arnold; Pierce-Arrow, W. E. Bush; Federal, William L. Hughson Co.; Kissel, Western Motor Sales Co.; Oldsmobile, J. W. Leavitt; Garford, Garford Motor Truck Co.; Mack, International Mack Corporation; Fageol, Ruddle and Menillo; Chevrolet, Chevrolet Motor Co., of California; Diamond T., Walter H. Bissell Co.; Kimball, Kimball Motor Truck Co.; Autocar, Autocar Sales Co.; Jumbo, Smith, All-American and Vim, Gates-Kelly Co.; Firestone, Firestone Tire and Rubber Co.; entries from the Goodyear Tire Co., B. F. Goodrich Rubber Co. and Union Oil Co.

Agricultural News Notes of the Pacific Coast

Northern California

A newly patented grape dehydrator is at work near Rutherford.

The first rice crop sold in Shasta County brought $6.05 a hundred.

The El Dorado County fair will be held at Placerville October 23-25.

California Industries and Land Show, San Francisco, October 14-19.

Construction is to begin on a $200,000 food products plant in Sacramento.

A carload of Placerville Kelsey plums brought $6.60 a crate in the East.

A new nursery firm at Marysville will grow more than 3,000,000 fruit trees.

Buyers in "wet" countries have contracted for 50 per cent of California's hop crop.

The fig acreage of the Sacramento Valley will be doubled by this season's plantings.

The teachers' institute for Northern California will meet at Sacramento October 21.

A 40 acre peach orchard in Sutter County recently sold for $35,000, a record price.

Dr. H. S. Fawcett, citrus expert, is making a citrus blast survey in Tehama County.

There is a 20 acre field of Turkish tobacco in Placer County that yields heavy returns.

A seed farm for peas is the latest enterprise in the Hallwood district of Yuba County.

The new $100,000 dairy products plant at Holt, San Joaquin County, is now in operation.

Citrus growers within a radius of 100 miles of Oroville attended a meeting there last week.

Japanese importers have placed an order for 1,000,000 pounds of Sacramento Valley rice.

Sacramento bean prices are $5.75 per hundred for pinks and $6.90 for whites, in the field.

The state board of control places the profits of the state fair between $9000 and $10,000.

The Vacaville and Suisun districts have shipped 35 cars of fruit a day for the past month.

From two to five carloads of wine grapes are daily shipped to Chicago and eastern points.

Prairie and brush fires about Grass Valley have destroyed grazing for thousands of cattle.

Owing to a strike on the Sacramento river boats, all perishable products are shipped by rail.

Shasta County will have two stock exhibits, at McArthur October 4, and Anderson October 25.

Twenty years ago wine grapes in Sonoma County brought $14-$17 a ton and cost $1.25 to pick.

Herbert Hoover has been asked to speak at the Fruit Growers' convention, Chico, November 10-15.

Owners of several thousand acres in the Cordua district, near Marysville, have formed an irrigation district.

The Alhambra Valley, near Martinez, has shipped $25,000 of Tokay grapes, also $100,000 worth of pears.

The Elson ranch of 640 acres, four miles from Modesto, sold last week for $180,000.

Central California

Visalia Victory Fair October 13-19.

Tulare reports .87 inches of rain to October 1.

Tulare County Live Stock Show October 6-11.

A citrus packing house is being built at Imperial.

Kings County will have a hog show at Hanford October 15.

Madera County has an irrigation scheme to embrace 370,000 acres.

Pomona reports all local canneries have changed from peaches to tomatoes.

In the period of September 1-24 the Lodi section shipped 1,706 cars of grapes.

Several hundred acres to rent are wanted in Yuba County for seed production.

Up to October 1 Turlock received 1.04 inches of rain, causing severe crop damage.

A Lindsay grower brags of a bean 40 inches long, but that "New Guinea bean" is a gourd.

Kern County land owners are organizing an irrigation district to embrace 400,000 acres.

Turlock growers and cannery employes received $650,000 from the local plant the past season.

Lodi growers claim car shortage will result in but 50 per cent of their Tokays being marketed.

Up to September 27 Watsonville shipped 745 cars of apples, as against 367 same date last year.

At the last farm bureau hog sale at Corcoran, Tulare County, the prices ranged from $12.95 to $15.15.

In two months at the Tulare cannery 1,139,251 cans of peaches were produced, the payroll being $43,574.72.

A load of almonds weighing eight and one-half tons was delivered at Oakdale, Stanislaus County; value $5,000.

About $112.000 was realized by Stanislaus County farmers from sales at Turlock and Modesto on September 26.

The railroad strike in England is preventing shipments of apples from Watsonville. All shipped are held in New York and none now going forward.

The Tulare board of trade has called a conference of water interests at Tulare October 24. It is hoped at this meeting to present a program for a valley wide reclamation project.

Grape growers of Fresno and Tulare Counties are held back from shipping because of car shortage. Word comes from Dinuba that not more than 25 per cent of the Malaga crop has been marketed in those counties.

Night classes for fruit growers are being conducted by Dr. Boncquet in Porterville, Exeter and Lindsay. Instruction will cover a period of 20 weeks. Dr. Boncquet is in charge of plant pathology investigations of the Fresno County horticultural commission.

Farm center meeting dates for Merced County are as follows: Planada, 10; Riverside, 14; Fruitland, 15; Le Grand, 16; Amsterdam, 17; Plenic, 18; Livingston, 20; Stevenson, 21; El Nido, 22; Eschscholtzia, 24; Merced Colony, 27.

Southern California

Lima beans opened at Oxnard at $12.05.

Los Angeles Live Stock Show October 18-26.

Shippers of Valencias complain of car shortage.

The Imperial honey crop will be about 20 carloads.

One carload a week of melilotus seed is shipped from Brawley.

A child of five died in Los Angeles from eating green walnuts.

The acreage of lettuce to be planted in Imperial Valley is fully 10,000.

M. H. Mendleson of Ventura County has nearly 2,000 colonies of bees.

The Oxnard district reports very little damage to Lima beans from rain.

The parlatoria scale on date palms in the Coachella has been exterminated.

The Elsinore cannery is running full blast with tomatoes but is short of labor.

C. E. Borst, Hemet, picked 202 boxes of peaches in 11 hours and received $16.16.

The 15 acre Blom ranch of Valencias at Garden Grove sold last week for $52,000.

The packing plant of the Santa Ana Walnut Association opened on September 29.

Buena Park and vicinity in Orange County is to have an immense drainage district.

Owing to rains the California Lima Bean Growers have not named the 1919 prices.

The new packing house of the Whittier Walnut Association is now ready for business.

Riverside County is destroying Russian thistle around West Riverside and Wineville.

The Elsinore tomato cannery started work September 15 and hopes to run until Christmas.

The La Sierra Canning Company has moved its offices from Los Angeles to Arlington.

The weather man says the October rainfall in Los Angeles was the heaviest in 43 years.

There is an organized movement at Brawley both in city and county to get rid of the Japanese.

Men and boys of Pomona who fought forest fires were paid over $20,000 by the federal government.

The bean warehouse at Greenville, Orange County, has up to date received 15,000 sacks of Limas.

Twenty-five thousand acres in the San Fernando Valley are estimated to yield 25,000,000 pounds of baby Limas.

Officials of the Walnut Growers' Association met in Los Angeles October 1, fixing the price of budded walnuts at 34 cents.

James J. Jeffries, retired heavyweight, will send a pedigreed calf by airplane from Burbank to the Los Angeles Live Stock Show.

Two Goleta, Santa Barbara County, ranchers were fined $25 each for hauling bean straw without a permit, in violation of a county ordinance.

The stockholders of the California Date Association met at Coachella September 13 and appointed a committee of five to decide upon grades of dates and prices to be paid growers.

The Coast and General

A potato show will be held at Redman, Oregon, October 16-18.

Three counties in Oregon are making a fight against jackrabbits.

An Oroville cannery is putting up grapes, mainly Thompson Seedless.

Catania, Italy, estimates 250,000 boxes of lemons will be exported this year.

Yuma Valley has a serious labor shortage and a big cotton crop to pick.

A turpentine plant is being built at Portland to utilize the fir pitch now wasted.

Hood River, Oregon, farmers resolved not to sell or lease land to Japanese.

Ricardo Videla, of Buenos Aires, Argentina, is studying California farming methods.

Tacoma, Washington, farmers have rented a market and will bar Japanese from its use.

Reports from 60 fall wheat farms in Stevens County, Washington, show a yield of 30 bushels.

Twenty-five cars of lambs in one train, numbering 5,350, left Republic, Washington, recently.

J H. Dengel of Chicago purchased a five acre apple orchard in the Wenatchee Valley for $15,000.

A load of 3500 pounds of dried raspberries at Springbrook, Oregon, brought the owner $2,302.

The first two bales of Egyptian cotton sold this year in Mesa, Arizona, brought 65 cents a pound.

Large numbers of cattle in Oregon have been killed by eating poison hemlock, Conium maculatum.

The California Walnut Growers will issue a cook book to show the housewives how to use walnuts.

One Hood River nurseryman has received an order for 200,000 Clark Seedling strawberry plants.

Palermo, Italy, exports this year about 1,250,000 boxes of lemons. Already 650,000 boxes have reached New York.

A line of poisoned bait three miles long was recently laid by Springville, Arizona, farmers to stop an invasion of grasshoppers.

Bulletin No. 88 of the Arizona agricultural experiment station is entitled "Use and Waste of Irrigation Water". This bulletin was compiled by Prof. G. E. P. Smith.

The entire Shorthorn herd of the Bartlett-Heard Land & Cattle Company of Phoenix, Arizona, consisting of 146 head, has been purchased by C. W. Bowers, of Merritt Bowers Company, Tulare, California.

The number of motor vehicles registered in Arizona up to September 15 was 29,643. The secretary of state estimates that there will be about 1250 more during the year. The total number last year was 23,905.

The city of Phoenix is to celebrate fire prevention day, October 9, as clean-up day. This is partly in the interests of making the city more attractive and more particularly to improve sanitary conditions, believing that every precaution should be taken to prevent a recurrence of the influenza epidemic.

Common Sense Plan for Land Settlement

Editorial Correspondence

AS ONE looks at the great wealth of the state of California it appears that with all the rich lands which are insufficiently farmed and the thousands of acres which are not farmed at all, the state should be able to give each one of us who might ask a farm all his own.

Something over a year ago when the first land settlement act became a law it seemed to a number that the wonderful time was coming when the state would present us with the long wished for little farm. But there was a shock for all who had such dreams. The state did proceed to buy some land—not much—in fact only two tracts totalling 5219 acres in Butte County near the little station of Durham.

A small portion of the land was subject to a lease so all could not be subdivided into small farms, but such as was free was divided and in two separate allotments was assigned to ap proximately 100 farmers. This assigning, however, was not without considerable delay and thorough investigation. The state had a natural desire to make a complete success of this first venture, the first venture in America, for that matter. Hence it asked some long questions of those who would farm on lands which the state might assign to them. The question may be raised as to how these people were secured; how they were all given an opportunity to purchase from the state of California these lands. Careful readers of the columns of the California Cultivator of about a year ago may possibly have noticed among the very interesting items which appear on the liner pages this advertisement:

STATE FARMS FOR SETTLERS—Thirty-one farms and five farm laborer's allotments in the state land settlement at Durham are now open to the inspection of intending settlers. Applications will be received up to noon. November 20, 1918. For particulars regarding prices, terms of payment, address George C. Kreutzer, Superintendent, Durham, California.

It was in response to this and similar advertisements that the people of California gathered at Durham for the drawings.

Those who applied were almost all practical, hard-headed people; they were not dreamers who thought the state had farms to give away, but understood they were to make a direct purchase. Yet the state wished to know their qualifications, and where two or, as was sometimes the case, a dozen or more applied for the same parcel of land, it asked: What is your experience; what is your capital; what is your ability to endure hard work; and a number of other practical questions. The answers to these questions, together with somewhat of a knowledge of human nature, led to the selection of 100 farmers, and now, after something more than a year since the first farmers began making homes, I have taken a ride over a portion of the settlement, I have talked with some of those who have put in a year of hard work, and I cannot help but say: "California's first land settlement has proven an unqualified success."

Every settler is not as successful as he would wish, in fact, it is admitted that one or two errors were made, and transfer or reassignment of holdings have been made to other settlers. Paternalism enters not at all into the plan. The state bought unimproved land; specialists employed by the state investigated soil and water conditions; other specialists divided or parceled the farms into holdings varying from an acre or two to 300 acres or more. Practical farm management people, aided by soil chemists and irrigation experts and engineers, tendered their services to the settlers. and while every farmer was free to act as he preferred (within certain lines) with his own property, yet with practical helpers at hand few mistakes were made.

Pioneering in Butte County

Upper picture shows Chris. Neilsen in his working clothes. Picture on the cover gives a better view of the field in the background. The man showing the biggest smile is G. C. Kreutzer, superintendent and all around daddy for the whole bunch. The other gentleman is William Bunger, a returned soldier, just getting down to work on his allotment. The third from the top is a scene in the 22 acre or park site near the center of the settlement. The lower is a cottage of one of the settlers.

Some of the lands which were not apportioned until after crop planting time had been seeded under direction of the settlement board, and these growing crops were transferred to the settler with charge sufficient to cover cost of labor, seeding and care up to time of his purchase. The harvesting of these crops netted to the settlers sufficient to aid materially in the first year's keep of the family. Alfalfa and even more permanent crops were sometimes planted; orcharding, however, was left entirely to the settler. The board preferred that each farm should be a general farm, so diversified that the settler would have each month a cream check or egg account or other return which would mean encouragement for each month.

My visit was all too short. Owing to a late train there was little more than an hour to be spent in the settlement. Through the courtesy of the superintendent, George C. Kreutzer, I was given opportunity for a once over and had only a few moments for conversation with settlers. Of course I saw Chris. Neilsen, the first settler to begin operations on his own farm. Mr. Neilsen had a little capital; he had more ability for hard work and was engaged in it at the time of my visit. Photo on this page shows him in the act of sinking post holes along the roadside in front of his alfalfa field. There was a magnificent stand and it showed that regular irrigation had kept it in excellent condition until the early fall season.

The houses vary in comfort and in beauty, for there is a range in cost of from $400 or $500 to as high as $3,000. Some of the settlers are still living in their barns, having built a substantial structure for storage of hay and devoted one corner of it for home use until another crop shall bring other comforts. All but three of the 100 settlers are married, and with schools and other advantages the social life will soon be the equal of any in the state. One of the social gathering places is a grove of valley oaks containing over 22 acres in the center of which is a large dancing floor with water and lights and other conveniences. It is hoped that another season will see the installation of a plunge. This grove was made the gathering place for the annual picnic of the Butte County farm bureau, and its advantages to the settlers as a social center were abundantly shown on that day.

One of the greatest advantages in a settlement of this type is the oneness of interest which permits and even induces unity in solving marketing and other problems such as stock breeding. In live stock the community idea is being worked out. For instance, in the selection of dairy stock it has been

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Established 1877 Forty-second Year

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and LIVESTOCK and DAIRY JOURNAL

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Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to live stock should be addressed to our Sacramento office

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Member Associated Farm Papers

Eastern Offices:
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S. E. Leith, Fifth Avenue Building, New York
C. A. Cour, Globe Bldg., St. Louis, Mo.

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Saturday, Oct. 11, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

An auto load of people passing a thrifty alfalfa field will invariably bring forth the remark: "The most beautiful of sights is growing alfalfa." The cover illustration is one of those beautiful sights, with new mown hay in the foreground, standing alfalfa in the middle distance, and the life giving water at the borders of the field. The scene is laid in Butte County. More particularly, it is on one of the state land settlement farms near Durham.

OCTOBER 26

Sunday, October 26, 2 A. M., is the time for changing the clocks back to good old suntime, and as congress succeeded in overriding the president's veto and repealed the daylight saving law, it is to be presumed our clocks will remain with the sun for some years to come.

COOPERATIVE TRUCKS

It costs a lot of money to buy a dependable motor truck. The small farmer can hardly afford such a luxury; perhaps we should say necessity, for the time is rapidly coming when its necessity will be more apparent. Hence the suggestion. Communities have organized and bought high-priced registered bulls and stallions. Why not the cooperative motor truck?

LITTLE DAMAGE

We feared last week that much damage to Lima beans might result from the rains. The moisture has all passed and the sunshine has started the cylinders in the threshers, and the last of the beans will soon be in the sacks, in fact, the more hopeful think that a fraction of one per cent will represent the real damage to the bean crop. As to prices—well ask congress.

BETTER TRANSPORTATION

Papers of San Joaquin County refer repeatedly to the awful losses occasioned to grape growers by lack of transportation facilities. The Lodi Sentinel carried big headlines: "Hopes of a golden year have gone glimmering. Transportation a factor that contributes to transform bright anticipation to gloom." The paper says: "From the standpoint of ability to move the crop, the grape situation in California is the most disastrous that has ever confronted the growers and shippers of this state."

There appears to be excellent market in the East for the grapes if they can be shipped. The Tokay situation in Lodi is characterized as rotten. The supply of cars is woefully inadequate, and, in addition, instead of seven and ten days service to Chicago and New York, as last year, the quickest shipment this year is around 15 days, and instead of making a 30 day round-trip service for each car, it now requires 50 days to two months. Lodi alone is able to send out 170 cars of Tokays daily. But the greatest number of cars she is receiving is from 20 to 32.

READY FOR THE CENSUS

The census bureau has printed 15,000,000 copies of the farm schedule to be used for gathering data for the 14th decennial census. These will be distributed so far as possible before the enumerator's visit, in order that farmers may become familiar with "acreage, tenure, values, live stock and crops." The bureau anticipates that the coming census will show an increase of 1,000,000 farms since 1910. At that time the farms enumerated numbered 6,361,502, valued at $40,000,000,000. Enumeration will begin on January 2, 1920. The work of gathering data is expected to be completed by February 1.

Above all the enumerators are appealing to farmers for full and complete returns. To that end they give assurance that the facts and figures gathered will have absolutely nothing to do with valuation of property for taxation purposes. The act of congress which provides for the taking of the census makes it unlawful for any enumerator, special agent, supervisor or other employe of the census bureau to divulge any information whatsoever concerning the census returns.

ASIA OR AMERICA?

A committee of bean growers is in Washington fighting for recognition of the California bean, or, more correctly, the American bean. Last year America's production was nearly double that of any preceding year, but with this immense production of highest quality beans the market went to pieces because importers poured in over 3,000,000 bushels of Asiatic grown stock. This, on top of the 10,000,000 bushel production of 1918, with another 6,000,000 bushels of holdover, was sufficient to cause a stampede and destroy every semblance of stable marketing conditions. The spring of 1919 saw greatly lessened planting, and unfavorable weather conditions caused still greater reduction in harvest. What will be done another year by bean planters remains for congress to say. If the people of the United States prefer Japanese and Chinese produced beans, there are now the ships to carry them to this country. Meantime some American producers will lease their farms and move to town.

WINE OR NO WINE?

The grape grower is finding "the government" a desperately indefinite term. "Will the government permit crushing of grapes and manufacture of wine?" is a question which is repeatedly asked and as repeatedly unanswered.

The internal revenue department says it has instructions to collect revenue on all wine manufactured but gives assurance that this in no way exempts from war time prohibition or gives faintest promise that the law will not be enforced to the fullest. The department of justice, or those having to do with the enforcement of the law, grins and says nothing. Presumably the safest course comes from observing the spirit and letter of the law. However, in two separate dispatches now appearing in daily papers it is announced: "U. S. will not interfere with wine makers."

A word of warning may be given as to homemade wines. The impression prevails that everyone is entitled to make for home supply. Notice has been served that the making of a gallon is as much a violation of the law as is the making of a carload.

PLANT A SEED

Now comes a farmers' bulletin from the department at Washington, "Home Storage of Vegetables." It is a bulletin which will be little understood by California growers. The Californian is planting his winter garden now and prefers the fresh garden sass to any stored stuff. We would suggest to our Eastern friends that instead of hibernating along with their stored vegetables they come to California and plant some seed.

HOME CANNING

The French people were quick to pick up instructions given by Americans and the thrifty people proceeded to can everything from garden and orchard which was not sold fresh. This is proving so successful that French missionaries are carrying information as to the advantages of home canning into Northern Africa. This is one case where French thrift and economy took lessons from the American waster.

FARM OWNERSHIP

The Oklahoma Farmers' Union has adopted a resolution asking congress, if it grants the demands of the railroad men, to buy all the farms of the United States, employ the farmers to operate them at two-thirds of the hourly wage paid to the railroad employes and sell the products of the farms to consumers at cost.

This would be just as fair as it would be for the government to buy the railways and would save the farmer a lot of worry. Uncle Sam is a fatherly old fellow and while he is distributing his favors should remember the farmer.

BARRING A GOOD GRASS

The Imperial Valley says that no seed of Sudan grass shall enter that rich section. And yet Sudan has proved itself capable of increasing the wealth of any section. Unfortunately its seed is identical in appearance with that of the deadly Johnson grass, and who wants Johnson grass? The Imperial Valley says, "Not I," and proceeds to bar the good in order that the evil may be prevented or, rather, reduced, for there is already in that valley much of Johnson grass infestation.

TEST THE COWS

It is inherent in nearly all of us to dread to learn wherein we are failures, and while we fully realize the necessity of locating the cause of loss it comes easy to put off the final determination. Hence many a farmer has continued to board and maintain in comparative idleness an old brindle cow even at the expense of some comfort to his own family. Worse, many a farmer will continue for some time to come to do the same identical thing. Occasionally a dairyman does awaken to the fact that this is the height of foolishness. He joins the cow testing association; he learns to appreciate the work done by cows of real merit; and he learns that comforts may be restored to his family by making beef of the boarders. This man becomes an educator for his neighbors, but it seems to be a desperately slow process.

May the cow testing associations increase.

KNOCKS

Sometimes when the motor begins to knock the owner proceeds to imitate it, but the manufacturer of the auto or truck or tractor maintains that the motor is sometimes really justified in its knocking and that the owner is not. One tractor manufacturer says: "The tractor motor that goes out and pulls its load for ten hours has put forth as much energy as the automobile that has covered a distance of 600 or 700 miles." That is some distance, and instead of knocking the owner should give more attention to care of a faithful servant. All of us who have followed the team and plow through a hot forenoon have found that we might secure renewed and far better service in the afternoon if the collars were removed and a shoulder bath with cold water given the faithful horses. The faithful motor cannot voice its appreciation as plainly as does the faithful horse, but its service speaks for itself.

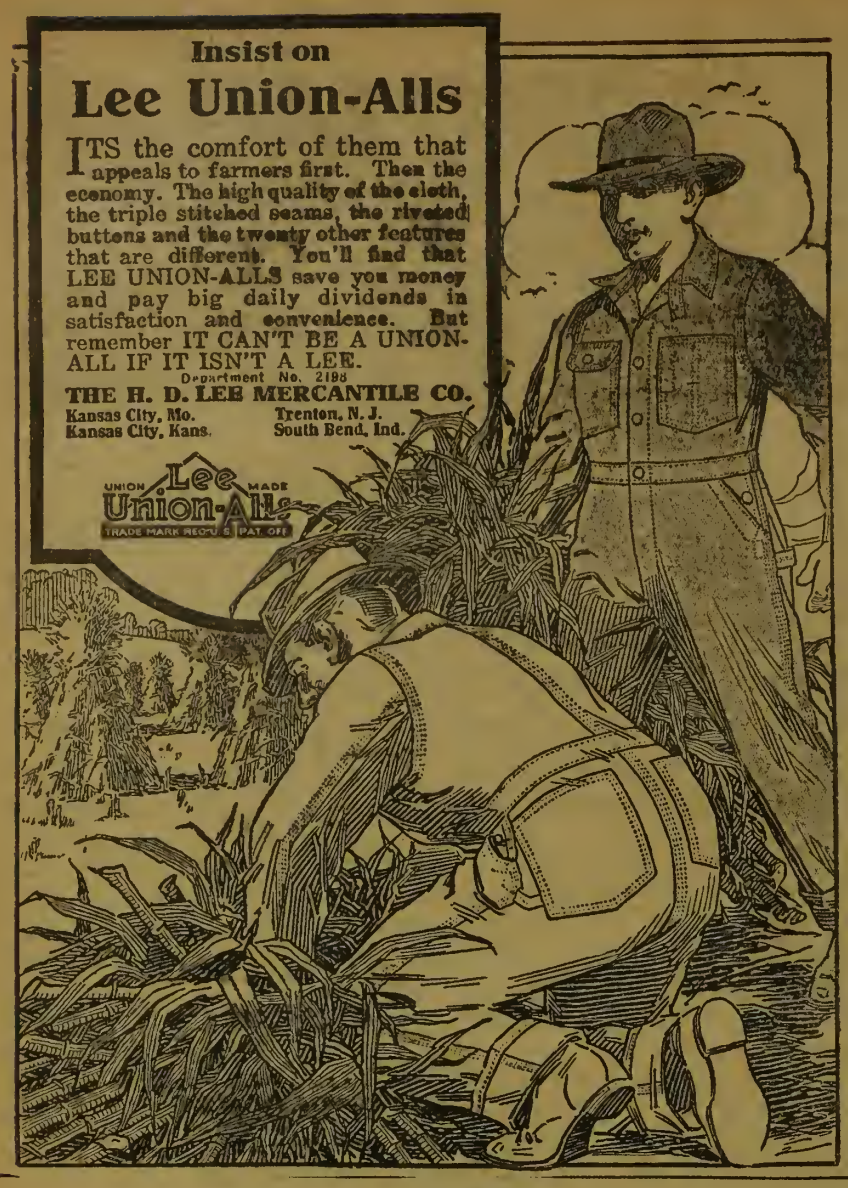
NOT PROFITEERS

The retailers and middlemen found it necessary to turn the spotlight in some other direction, so they picked on the raisin and prune growers and other cooperative organizations as guilty parties, and the stop-thief cry resulted in rather an uncomfortable time for some of the cooperators. A trip to Washington has been made necessary, but it has resulted in making a conclusive showing that the producer is simply eliminating a few of the large profits exacted by the established trade. In fact, we think that prices to consumers have been lowered by efforts of cooperating producers.

Just at the present moment both consumer and producer are pointing to labor as the cause of some of the high prices. Local papers in various fruit producing sections have chronicled the fact that swift working fruit cutters and operators have been earning during the busy season of the past summer as high as $50 and $75 per week. The producer is the first sufferer in the payment of such wages but naturally it comes to the ultimate consumer.

On every type of road that is traveled by motor cars, the sharp clean characters of the Goodyear All-Weather Tread have plainly written this impressive story
◇ ◇
More people ride on Goodyear Tires than on any other kind
This is an actual photograph of the impression left on a brick pavement by the Goodyear All-Weather Tread

GOODYEAR
AKRON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Lee Union-Alls
ITS the comfort of them that appeals to farmers first. Then the economy. The high quality of the cloth, the triple stitched seams, the riveted buttons and the twenty other features that are different. You'll find that LEE UNION-ALLS save you money and pay big daily dividends in satisfaction and convenience. But remember IT CAN'T BE A UNION-ALL IF IT ISN'T A LEE.
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The mica in Mica Axle Grease fills up all roughness in spindles and bearings, keeps them cool, slippery and smooth as glass. Then the grease works better and lasts twice as long. No hot boxes. Just like putting ball bearings on your wagon. Ask your dealer. Buy by the pail.
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Neither alfalfa nor orchard cultivation can be conducted advantageously without an efficient Irrigation System. Now is the time to install your system as all indications point to much higher prices in the very near future. Don't delay, but write today for literature and any information you may require on the subject of Irrigation. The advice of our experts is yours for the asking.
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"Originators of the Valve System of Irrigation"
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PLACE YOUR ORDER NOW FOR **NITRATE OF LIME**

Guaranteed not less than 13 per cent Nitrogen—almost 100 per cent Pure.
Nitrate of Lime supplies Nitrogen in the most available form. Packed in solid wooden casks about 240 pounds.
Ask for prices October-November delivery in warehouse, Los Angeles and San Francisco.

C. HENRY SMITH, General Agent
Pacific Coast and Hawaiian Islands
311 CALIFORNIA STREET SAN FRANCISCO

The Great Family of Citrous Trees

By Ernest Braunton

DOUBTLESS there are a few growing citrous fruits who care nothing about the great family to which these trees belong, but as a rule men are interested in all that is closely allied to matters or objects under their care or charge. In this article I shall aim to present short notes regarding the nature, nativity and possible use of members of the citrous tribe outside the genus Citrus which contains only the citron, lemon, lime, grapefruit or pomelo, sour or Seville orange, common or sweet orange, King orange, and the Calomondin orange from the Philippines.

While this article is not aimed to be scientific, it is our purpose to avoid the known hybrids such as the citrange and limequat, for much has been written of these and the tangelo. Two other genera are well known to growers in Fortunella, which is the kumquat, and poncirus, which the tradesman has called Citrus trifoliata, because it belonged to the citrous tribe, though not more so than those of which we write. It will be necessary to use the botanical names, for very few have any other but if such others are known they will be given. Some of these little known citrus trees will some day prove of great interest also of great value to Californians, more especially the climbers. Many of them are recommended for trial by the United States department of agriculture.

Aegle Marmelos is a small and handsome tree native to northern India but widely cultivated throughout other nearby countries. It has a fruit ranging from 2-6 inches in diameter, but usually 4-5 inches, covered with a thick shell filled with a pale orange-colored pulp that is sweet, wholesome, nutritious and very palatable and also has some medicinal value in both ripe and green state. The tree is now being tested in the warmest parts of this country, according to Walter T. Swingle.

Aeglopsis Chevalieri is a small spiny tree from tropical West Africa and bears a fruit with a thin hard shell of orange color, but inside it is filled with a mucilaginous mass that is highly aromatic. It is reported growing in swamps near the sea and it may be strongly resistant to alkali. The U. S. department of agriculture is testing it in the greenhouses at Washington as a stock for other citrus fruits.

There are a dozen or more species of Atalantia ranging from India to Australia and several of them have been recommended for cross-breeding with our better known citrous fruits The fruits look like small oranges, with a lemon skin, which in some species is edible, but in others the trees are being tried merely for stock to work citrus on, while fruits of others yield oil. Some of these trees range to forty feet in height.

On account of the vigor and size of some species of Balsamocitrus it is thought they may prove of value on which to work other trees. They are native to Tropical Africa and bear orange-like fruits six inches in diameter filled with an amber-colored fragrant gum. The empty fruits of one species have been much used for powder flasks.

The tabog is the common name of Chaetospermum glutinosa, native of Luzon in the Philinpines. Oranges, lemons and all such trees have been successfully budded on the tabog, which shows a most vigorous root growth though the tree is a small one.

Citropsis is known as the African cherry orange. This is an interesting tree which bears small bright colored oranges averaging ahout one inch in diameter, with an agreeable odor and a pleasant flavor, borne on the trees in tufts or bunches, hence its common name. The trees have been cross-budded at Washington with the more common sorts.

In its native Australia Eremocitrus is called the desert qumquat, and has been grown by the writer as an ornamental. It stands both heat and cold to a remarkabe degree and buds well with the common kinds. It is the hardiest evergreen citrous tree known. The fruits are used for jam and pickles and for making cooling drinks.

Feronia Limonia is known as the wood-apple, a deciduous tree from India that is being tested in California as a stock, all common kinds being budded on it. The fruit has a hard, woody shell with an acid edible pulp which is used for making a jelly somewhat similar to black currant jelly. It also has some medicinal virtues.

Feroniella is closely allied to Feronia and may also be used as a citrus stock. It is native to Cochin-China and surrounding districts where its fruits are used as a condiment in sauces and the pulp is sometimes eaten. Trees are now growing in the greenhouses at Washington

If we have a navel orange may we not also have a naibel? For that is the name of a small spiny tree of beautiful foliage native to Ceylon, India and Cochin-China. The fruits are very small, not more than a half inch in diameter and bitter, but used for seasoning. The tree has a vigorous root system and is recommended for trial for budding stock by Swingle, who has some budded on both lemon and grapefruit at Washington. The botanical name is Hesperothusa.

Lavanga is the botanical name of a citrous tree whose common name is lavangalata, which is a poser for those who object to botanical names. There are several species of Lavanga and they are all climbing shrubs and U. S. experts say they should be introduced into this country for budding and breeding trial. Hurrah for the climbing orange! These trees range through India, Cochin-China, and the Malayan Archipelago and bear small lemon-colored resinous fruits the size of pigeons' eggs.

The finger-lime of Australia has fruits of finger shape with a pungent acid juice and the tree is recommended only for budding and breeding purposes on account of its extreme hardiness. The tree grows forty feet and has a variety bearing blood-red fruit with pinkish pulp. There are five species of this tree, Microcitrus by name, and one bears a lime equal in flavor to the best, but the fruits are not finger shaped.

In India and Ceylon, in sandy soil near the coast is a small citrous tree named Pamburus missionis that bears small fruits filled with gum. It is thought it may prove good stock for light sandy soil.

Papeda Histryx is used in the Philippines on which to graft the more common stock, but its fruits are not edible, but sour and acrid, though closely allied to the genus Citrus. The Filipinos use the fruits instead of soap for washing the hair.

Paramigyna are evergreen climbers related to the orange having round lemon-colored fruits filled with gum, and twigs, leaves and spines somewhat hairy, the latter character usually ascribed to plants withstanding severe drouth.

Pleiospermium is but Greek for many-seeded! And there are two species of it native to India and elsewhere and though related to the orange the fruits are filled with that mucilaginous pulp so common in the citrous family. It is thought both species are worthy of trial as budding stock.

Severinia buxifolia is a box-leaved plant not far from the orange but having black berries with no pulp as the orange, but fleshy and evidently a true berry. It is used as a hedge plant and doubtless has a value for budding stock for lands too salty for other citrous roots to grow.

Triphasia trifolia is the lime-berry widely cultivated as an ornamental for the shrub is very attractive even when not in bloom and it flowers and fruits freely. It is of interest to the orchardist by reason of its growing in soil much too salty for any orange and therefore worthy of trial as budding stock.

From pears to peaches in California is indeed a far cry for the 1919 estimate of pears is but 93 000 bushels, while that of peaches is placed at 17,488.000 bushels. Our apple yield is considerably less than half of the peach crop, being 7 591.000 bushels. All land crops of California are estimated to reach 95 to 100 per cent of normal.

Relation of Soil Moisture to Orchard Irrigation

(Continued from last week.)

Gravity draws the melted snows from the high Sierras and deposits the water in the ocean, and it is this same force which draws the irrigation water downward through soils and subsoils. During the past two years McLaughiin of our bureau has demonstrated that gravity acts on capillary moisture as weii as on free water.

Capillarity and Surface Tension

Mr. McLaughiin also found that the force which is variously termed capillarity, capiilary attraction, and surface tension, has been overrated. From statements which have appeared in textbooks and elsewhere the impression has been created that if moist soil comes in contact with dry soil, the moisture content in each will soon be about the same, due to the movement of water from the wet to the dry. Mr. McLaughiin found that when the wetter soil was placed in the soil boxes directly above the drier soil, that, largely through the action of gravity, there was considerable movement downward, but that when the positions of the two soils were reversed and the dry soii placed above, there was little movement upward. The results obtained by McLaughiin and others seem to establish the beiief that oniy relativeiy small amounts of water can be raised from a moist to a less moist soil; also that the bulk of such moisture can only be utilized by the extension of the root system to where moist soil is to be found. Apart from the top layer of soii there appears to be little movement of water from the subsoils upward.

The movement of water in soiis sideways from furrows depends on the nature of the soil. the amount of organic matter which it contains and other factors. In ordinary soiis a sidewise movement of two feet is about as much as can be expected, whereas in tight soils containing iittle organic matter and in poor physical condition it may not exceed nine inches in several days. Sometimes the water in its downward course encounters an impervious layer, becomes somewhat dammed up and then spreads laterally. Under such conditions the horizontal spread of water may be considerabie.

Distribution of Soil Moisture

In considering soil moisture and its distribution through soils and subsoils, some reference should be made to evaporation and the loss of water which it entails. A dozen years or so ago I carried on some experiments in California to determine this loss. These investigations showed that the loss of water by evaporation from irriyated soils, particularly when the entire surface is moistened, is very great for the first two days or so after water is appiied.

In summing up the situation in regard to soii moisture, there appear to me to be at least two essentials that deserve careful consideration. One of these is the amount of water which a soil of a given type will retain against gravity at each irrigation within the root zone of the trees, and the other is the smallest amount of moisture which a soil of a given type must contain in order to prevent damage to trees and their fruit.

We hear much these days about the optimum moisture content of soils, meaning by that the amount of moisture which is best for the plants. But this and other terms which I might name belong to the realm of theory rather than practice. It is not practical to maintain an even moisture content in the soil within the root zone of piants. The best irrigation practice merely enables the orchardist to fill up the soil with water without undue waste either by evaporation or deep percolation and to time the intervais between irrigations in such a way that the trees wiii not suffer for lack of moisture. This in turn brings up the question of how and when to apply water in order to attain these desired results. The California orchardist has little choice of methods. In the large majority of cases he must choose between furrow irrigation and some form of the basin method.

The Furrow System

In setting forth some of the good and bad features of these two methods of irrigation and in comparing their relative merits, perhaps the strongest argument in favor of the retention of furrow irrigation is that it is admirably adapted to the irrigation systems of the South.

A small head can be conveniently and advantageously used in furrow irrigation and it is also more economical of water than any form of flooding because the water surface exposed to evaporation is confined to a small fraction of the total land surface and a fairly large percentage of the surface soil is kept dry, thus preventing loss of water by evaporation. It likewise tends toward deep rooting and the preventing of root growth within the soii mulch covering. Furrow irrigation may also be used on a wide range of slopes from the flattest to the steepest and is about the only method which can be used on steep contoured side hills. Furthermore, it calls for little grading or displacement of surface soil and no special equipment other than the basin method. Taking the state as a whole, the average annual cost of appiying water by this method would be at least 30 per cent cheaper than by the basin method.

The chief objections are that the water is not distributed eveniy over the soil within the root zone and that the fertiiizers in the soii are not always conveyed by the water to the rootlets in the most efficient manner possibie. It is believed that much can be done to remedy uneven distribution by using shorter runs and adopting a better location and spacing of furrows. Instead of allowing water to run in furrows for 600 feet or more in porous soils, the length of runs should be reduced by one-half. Efforts should also be made to moisten the entire area from which roots can derive water and food.

The Basin Method

The basin method is best adapted to

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"A Barrel of Profit"

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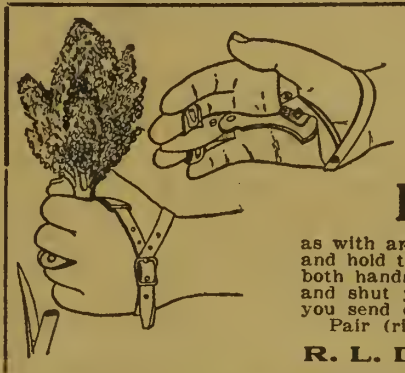

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David Heading Knife

as with any other instrument. You cut off the stalk and hold the head with the same hand—and you keep both hands at work, cutting as fast as you can open and shut your fingers. If your dealer cannot supply you send direct to the manufacturer.
Pair (right and left) $2.50, postpaid.

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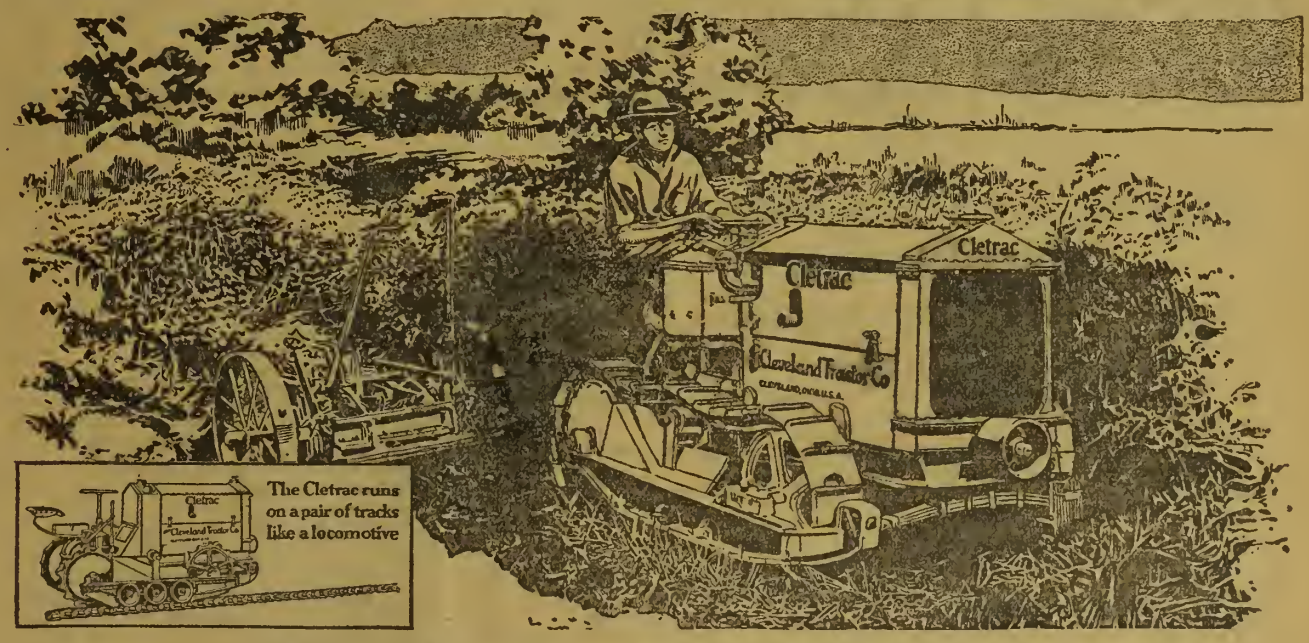

The Cletrac runs on a pair of tracks like a locomotive

The Tracks Save Power

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This distinctive and efficient type of construction enables the Cletrac to go practically anywhere. No matter what the soil conditions, it runs *on its tracks*—nothing stops it.

It doesn't have to expend *extra* energy to push *itself* along. This saves *power*, saves *fuel*, saves *time*.

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And the tracks being broad, *distribute the weight* of the Cletrac as snow shoes distribute a man's weight. Think what that means in the preparation of your seed bed. Think what a tremendous advantage it gives you on hilly ground. Think of the extra power and the lower upkeep under hard conditions. Think of the greater speed and the easier handling.

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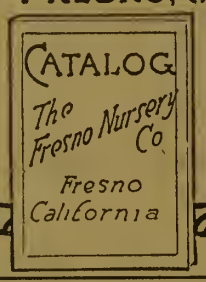

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relatively flat slopes, large heads and a fairly liberal use of water. The winter irrigation of orchards can usually be carried out by this method more advantageously than by any other, since at such times water is usually plentiful, the work involved in forming basins can be done at a time when other orchard work is not pressing, and large quantities of water can be applied in a brief time. Another advantage is that it provides a miniature reservoir in which nitrogenous mater may be deposited, thus affording a speedy and direct means of adding nitrogen and other plant food to the soil within the root zone.

Some of the disadvantages of the unmulched basin as compared with furrows are its greater cost, the larger loss due to evaporation, the shifting of top soil for dikes and ditches, the baking of the surface soil and limitation of application to relatively flat land. Perhaps the most serious objection to the mulched basin is that it introduces a radical change in the process of root development. The removal of the mulch for even a short period in midsummer would be likely to result in the drying out of the moisture in the top soil, the destruction of the roots therein, and a setback to the tree itself.

For the Benefit of the Whole Community.

The pick of Fred W. Kiesel's Sacramento Holstein Ranch. This bull was presented by him to the state land settlement at Durham.

Summary

Summing up the relationship between soil moisture and orchard irrigation practice, the following points seem worthy of special consideration:

1. The great need of arid soils in general and of orchard soils in particular is an abundant water supply and a larger percentage of organic matter.
2. The effective water holding capacities of soils should be determined in order to find out how much water to apply at each irrigation and how often to irrigate.
3. Comparatively little moisture is drawn upwards through soils by capillarity. It is only where a water table is found within a few feet of the surface or where a body of free water comes in contact with the soil that this force is efficient in moving soil moisture.
4. Gravity acts on capillary water as well as free water and draws both downward unless a layer of hardpan or other impervious material intervenes.
5. The expense of substituting the basin method for the furrow mothod may be saved, providing the texture of the soil is improved by the addition of sufficient organic matter.

LAND SETTLEMENT

Continued from Page 473

agreed that the Holstein shall be used in the settlement dairies. This has permitted uniting in the securing of two valuable bulls, one purchased from the University Farm at Davis, the other presented by Fred Kiesel of Sacramento. Kiesel said, "Come to my ranch and take your pick." The "pick" is shown in photo on this page. Both of these animals are of finest breeding, and for their use every settler pays a stipulated fee arranged to cover overhead and the actual cost of the keep of the animals, which at present are on the ranch of Mr. Neilsen, who has the contract for giving them care and attention.

In beef, the Shorthorn has been chosen; in hogs, the Duroc. While I was taking the train on leaving I had the pleasure of seeing one of the hog breeders of the settlement making shipment of a Duroc boar to San Joaquin County. The high quality of the stock kept in the settlement is becoming known the state over.

As to marketing there has as yet been no community plan made; each individual markets or disposes of his produce as he sees fit, and this will continue although it is very probable a cooperativo effort will be made along this line as well as in the establishing of a creamery, cannery and other home factories. Even cooperative

purchasing has not as yet been engaged in, except in the matter of farm implements, and there special prices were secured for the settlers. Stores and the bank at Durham just at the edge of the settlement supply practically all needs up to the present time.

Mr. Kreutzer, while a comparatively young man, is considered the daddy of the bunch and finds his hands full in giving advice to both farmers and housewives. He does not take the position of farm adviser, and yet, from the nature of his work as superintendent of the settlement, is appealed to for all kinds of advice. At the time of my visit the one question uppermost in the minds of all was: "What is the best procedure in view of the anthrax situation." Greatest care is being taken to prevent the spread of this malady, which is serious in some sections of the Sacramento Valley. Mr. Kreutzer was advising inoculation and taking every precaution possible. Of course the settlement has the advantage of the services of the farm adviser of Butte County. Regarding Mr. Kreutzer's work the estimate put upon him by the land settlement board in its first annual report is as follows:

"The most important person in an enterprise like Durham is the superintendent. He can do much to make or mar any law. The rapid progress in the development and settlement of this area and the industry and unity which prevails among settlers is largely due to the efforts and influence of the superintendent, Geo. C. Kreutzer. Mr. Kreutzer has unusual natural fitness for this task. A graduate of the Colorado agricultural college, he has had experience in America in the operation of United States reclamation works; in Australia, in the administration of irrigation districts and in the management of settlements similar to that at Durham. Later as farm adviser of Kern County he secured the needed knowledge of conditions in this state. He combines marked executive ability and a definite knowledge of the next step to be taken, either by the settler, or by the board."

Contrary to an impression quite general these lands will not cost the taxpayers of California one cent. There was, however, an appropriation made for bearing the expenses of the land settlement board. This is expected to cover expenses during the life of the board, at least so far as that one project is concerned. The state did make an appropriation to be used in the purchase of the land, but this is to be returned with interest at the rate of five per cent and with an additional amount to cover all expenses of surveys, services of specialists, installation of water, or any other expenditure which added to the efficiency or worth of the lands secured by the settlers.

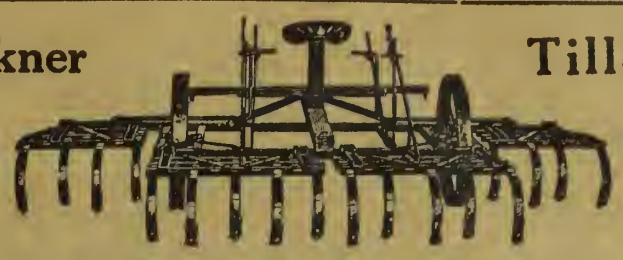
The success of this movement has been so complete that the recent legislature launched a movement for a far greater settlement plan. This calls for the appropriation of a million dollars to be temporarily placed in the hands of the settlement board, and with this it is anticipated that other land settlements will be made. For insance, it is expected that a portion of the Imperial Valley may be brought under some such a plan either as a nationally or state controlled settlement. Dr. Mead has issued a report regarding these lands in which we note:

"In Imperial Valley, on the southern border of California, there are over 200,000 acres of public land which can be irrigated from the Colorado River by a canal which would start at the Laguna dam and carry water both to the mesa land and to the Imperial irrigation district. This dam was built by the United States reclamation service and belongs to the government. A survey to locate the canal from this dam to the Imperial Valley, and an estimate of its cost, have been made at the joint expense of the United States reclamation service and the Imperial irrigation district.

"This land is the upper part of the gently sloping sides of the Salton Basin. The lower part of this great bowl, or basin, is the Imperial irrigation district, watered by a canal from the Colorado River, but starting farther down and making a long loop into Mexico before reaching the land to be irrigated.

"It is planned to build a high line canal, large enough to supply both the unirrigated mesa land and the Imperial district, and to have the entire canal on American territory. The Imperial district and the higher unirrigated land are both to share in its cost, hence less than half the expense of the main canal would be a charge on the mesa land. A bill has been introduced in congress authorizing the sale of the irrigable public land in tracts of 160 acres and the use of money thus obtained to help finance construction.

The elimination of speculation is one of the great advantages from this state control of land. Many a large tract has been purchased in California; improvements have been made such as roadways, irrigation canals, etc.; and then the original cost plus all improvements has been increased by 100 or even greater percentage to create a fund for advertising, commissions and profits. This has placed upon the land an undue burden which later settlers have had to carry. It is increasing the cost of living because such a system can only increase the overhead and put a burden, which must be carried for all future time, on the farming class. If the state cannot continue these settlements indefinitely, it at least has indicated where there may be great saving in farm land costs.

Forkner  Tillers

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October Lawns

By Ernest Braunton

OF THE autumnal season this is the best time to put in new lawns and if properly done the results will equal the best spring planted lawns. Fall lawns are not recommended for the colder sections of California for sharp frosts will injure young grass when it is in the milk stage. But for the greater part of the state October lawns are advised.

The preparation of the soil must be thorough for you cannot get under a lawn once it is planted, either to improve the soil or make smooth the surface. As you leave it so it will remain; getting poorer with time, rather than better. Do not depend wholly on feeding lawns from the top except for incidental annual fertilizing. You must have a good foundational soil, therefore it must be rich, and permeable to the fine grass roots. Sandy soil will not produce a good lawn, but black adobe, if well worked over, will support one to the highest point of excellence. Four inches of good stable or dairy fertilizer well mixed in the soil is what should be spread on every area where lawns are to be made.

Pulverize the soil as finely as possible, for it must be settled before sowing until it is as smooth as a house floor. After once sowing it can never become smoother. After the grade is perfect it must be sown from the far side toward the front. For this purpose use boards and sow from back to front, taking up the boards as you retreat (?) (toward the front). Before sowing sprinkle the soil a little so the seeds will stick to it and not blow about. Grass seed is very light and a windless day or time must be chosen. After sundown is generally best. Sow the seed very evenly. If you wish to mix clover with it sow clover separately and first, as wind will not move it. Before taking off the first boards sow an inch of well rotted sifted stable manure over the seeded portion and you will have the job of planting finished.

Watering must be very carefully done. If force is used the manure covering and seeds will be driven into spots or streaks and if too much water is used the manure and seeds will float into islands and leave bare spots. You cannot water a newly sown lawn too often but you can easily water it too much. If weather is hot four times a day is not too often to spray; if weather is cool it should still be sprinkled twice a day until the grass is up. After grass is tall enough to cut, get in with the mower at once, but be careful how you step. If you can it is best to mow a little strip along the edge, then put down a board to walk on and so on with boards across the area, never stepping on the lawn at all. As soon as weeds are big enough get in on these same boards and pull them. Have one board to kneel on and another so your toes will rest on it or you will dig holes in the young grass. In final preparation of the soil it is better to use a roller to settle it after being thoroughly dug up, and if you have such roller, use it to roll the young lawn after each of the first two or three cuttings or weedings. On small lawns gardeners tread all the surface over with their feet, to be sure of no imperfections in the surface. Careful attention to these directions will give you the best of lawns, for the writer has made several with his own hands and has had acres made under his direction, of the very cream of lawns. Use a pound of grass seed to 200 square feet, or an area 10x20 feet; clover seed will cover one-third more space.

October Bulbs

October is the first month in which fall bulbs are planted and many do not plant any until November. It makes some difference what the season is and in what part of the state one lives. There is no question but those living on or near the coast may plant bulbs earlier than those in the interior valleys except in seasons of early rainfall. To be explicit: bulbs need cool weather for best development.

Cyclamen, freesias, and the early dwarf gladiolus of the Blushing Bride type all do well through early planting. Watsonias should go in at once; they are as well planted in September. As soon as lilies are available they may be planted; too often they are late in arrival. The first planting of Dutch or Holland bulbs may now go in the soil but if the weather is hot the first of November is time enough in the south half of the state. These bulbs are anemones, daffodils, hyacinths, French buttercups or ranunculus, and tulips. It is best, if you plant many bulbs, to make two or three plantings a month apart, so you may have flowers over a long period.

Cosmos in the Corner

Cosmos are tall plants and must be put away in corners and backgrounds, allowing lowlier plants to hold the foreground. As Cosmos are fine for winter flowers and should be sown now, in my own garden I am sowing them in a wide border against the fence and in the foreground sowing calendulas. Cosmos usually are sold in four shades or colors, white, pink, crimson and yellow. But of late years intermediate shades and new forms have brought us named varieties that are very attractive. In the common Cosmos the whites, pinks and crimsons have a yellow disk as they have in the nearly related yellow species, but in a dark red species the disk or button is also red. All species are native to Mexico.

Plant Improvement

Do not hesitate to tackle improvement of plants, flowers or fruits. By selection the chrysanthemums of today, with all their size and gorgeous colors, came up from a yellow flower the size of a five-cent piece. The dahlia by selection had been brought to a showy flower before white men found it and therefore its domestication is very old, but the wild species today are single flowers two inches across. In the fruit line considered how the common apple has been elevated in size and quality from the wild apples of several countries. And even today the apple will run wild if allowed to, in many parts of our country. It is our privilege, and our duty, to combat this return to the wild and by constant selection and breeding ever improve all life under our charge, whether animal or vegetable. Keep up the selective process at all times.

Prehistoric Big Trees

Big trees closely allied to our giant sequoias lived in ages long past. In Spitsbergen in soft, fine grained black shale forming roofs over coal beds the branches and leaves of Sequoia Nordenskialdi are very common and in thin seams of coal, branches, leaves and cones of Sequoia Langsdorfi are found in great quantities. There are also found fine fossil specimens of the same bald or swamp cypress, Taxodium distichum, that grows in the United States today, also fine specimens of many other trees of genera common in the United States, although they flourished ages before our known history began, and many of these fossil remains are found in the soil of the now treeless windswept plains of the Dakotas, Wyoming and Montana. A layer of fan palm leaves a foot in thickness was found in a formation in the northern part of the state of Washington.

Growing Laurels, Etc.

Complaints are common that southern laurel, Kalmia latifolia and plants that grow under similar conditions cannot be grown in California. When received they flourish for a time and then dwindle and die. This will be especially true if the soil is alkaline to even a slight extent, and death will be speedy. The secret of success lies in producing an acid condition of the soil. This may be done by introducing decaying vegetable matter in considerable volume. Oak leaf mold is commonly used in California, but get the rotting and dry leaves together, not the rotted, rich, black leaf mold be-

neath. For rotting oak leaves are acid while thoroughly rotted they are alkaline. This holds true as proper treatment for many plants said not to thrive in California. Trailing arbutus will grow here in soils of sufficient acidity.

Plants in Arid Regions

The gardens of Arizona cities, according to Prof. Volney M. Spalding, constitute an experiment station in which year by year the availability of one species after another for desert planting is being determined. From the great number of plants successfully cultivated there seems, at first sight, to be sufficient justification for the reiterated statement that anything will grow there if only you will give it water enough, but closer attention to the actual facts make it evident that this statement is true only in part, and that there are many plants that grow indifferently well or not at all, especially during summer. Geraniums, a universally easily raised plant of moister regions, are very uncertain. Cannas and gladioli, which grow side by side in the east, part company here, the former making a good growth and the latter failing altogether.

Reviving Wilted Flowers

If a really cool place with cool water is to be had wilted flowers will slowly come back to condition and this may be the best way of all to handle hard-wooded stems such as roses. But with herbaceous stems as in dahlias, gladiolus, iris and a host of others a plunge of stems in hot water is the quickest and surest means of revival. The water should be well toward the boiling point.

Peonies in California

There is no reason why peonies may not be successfully grown in all parts of California. For three years past the writer has noted them in several gardens where each year they were of the best, no failures. The aim should be to keep the roots cool, either by constant cultivation, mulch or planting on the north side of a fence that has a base board a foot above the ground; but some gardens bear fine flowers without any special care.

Giant Tree Ferns

Ferns of nearly all kinds thrive best in a humid atmosphere and in California near the coast, yet fine tree ferns grow in this state far inland, when provided with sufficient shade. Under large native trees they flourish best.

The tallest tree fern known is the very rare Alsophila excelsa from Norfolk Island, to the east of Australia. The trunk has been found as tall as eighty feet while A. MacArthur found upon Lord Howe's Island attains seventy feet. In American tree ferns A. armata of Jamaica has grown to fifty feet high. The West Indies contain a number of species of fine tree ferns.

GARLIC

By D. F. Relchard

Garlic is one of the aristocrats this year, as it has been for the past two years. It is commanding unusual prices. The demand for a couple of years was heavy and last year it was so high that the usual growers of garlic sold their sets because they could get more for the bulbs than they ordinarily get for the crop produced from them; therefore another scarcity of garlic and the resultant high price.

Garlic is grown from sets or cloves planted just under the surface of the ground. The mature bulbs are broken up and the cloves are set about six inches apart in rows 12 to 18 inches apart. The ground should be a rich, well drained soil, convenient to irrigate, for best results. The settings may be made in late fall or early spring. October plantings are to be preferred because they have the winter rains to keep up their growing and they develop an early crop and harvest.

In the culture of garlic, as with onions, the surface must be kept loose and the bulbs allowed to develop as nearly on top of the ground as is practical. Irrigation will be necessary when rains or natural moisture are not sufficient. Furrow out and apply the water in the centers between the rows. Do not allow the water to get around the plants. Cultivate carefully after each irrigation.

There are no pests or diseases that attack garlic so that the crop depends on the soil in which it grows and the care given. It can be grown wherever onions are grown and on hillside land where the moisture is not sufficient to develop good marketable onions.

There are three varieties of garlic, White, Pink and Imperial. The Pink and White are of the old flattened round type of which the Pink is the more productive and most used. The Imperial was developed in the Imperial Valley and is more of a conical shape, having more than one tier of cloves overlapping. The Imperial is a great improvement over the older varieties but is almost entirely out of the market at present.

It requires 200 to 300 pounds of bulbs to plant an acre. The yield under proper conditions should be about 2500 pounds. Discontinue irrigating when the bulbs are well formed and the foliage begins to turn brown or die. Harvest when the stems are well wilted by pulling and throwing the plants into piles to dry for a few days. The foliage is then cut off leaving about an inch of the stem on the bulb. Store in shallow crates where they can get good ventilation.

The Annual Meeting of the National Grange will be held at Grand Rapids, Michigan, November 12-23, 1919. A reduced rate of a fare and a third, on the certificate plan, has been granted by all railroads on account of this meeting.

DR. FORBES WRITES FROM EGYPT

Dr. R. H. Forbes, formerly dean of the college of agriculture of Arizona and now connected with the Societe Sultaniene d'Agriculture of Egypt, writes an interesting letter from Cairo which is quoted from a recent number of the Reclamation Record.

"Egypt is an easy transition from our own Southwest. The climate is generally the same and the crops specifically so; while the Nile and the Colorado belong in the same great family of irrigating rivers. The economic conditions are, however, vastly different. Sand is costly and labor is cheap, being, therefore, abundantly and intensively used in place of machinery, as with us, on the land. It gives one a wrench, though, to see a man cleaning a ditch with nothing but his hands to throw out the mud, or at best a basket with which to carry it out. Just at this time, with high prices for labor (35 cents a day for a good workman) there is an impetus toward the use of machinery, but as yet with very little result. Large ignorant populations move slowly, and the would-be improver of agricultural practice must look very carefully for the lines of easiest understanding along which to work. To begin with, I am introducing the successful varieties we grew in Arizona, of ceru, wheat, legumes, etc., for it is a scientific matter to substitute a good seed for a poor one, and the result is conspicuous and easily understood. The first crops were quite satisfactory, and the coming season's work will include additional New World introductions which should add to the list of returns which we are making to the Old World for past contributions to our own prosperity.

"Incidentally, there is still much to learn from even the Egyptians of more or less direct profit to our own agriculture, and it is very interesting to study out the details of their beautifully close fitting scheme of agriculture, which has been hammered into shape through so many years."

SANTA BARBARA HORTICULTURAL SOCIETY

The Horticultural Society of Santa Barbara County will hold a fall flower show on October 22 and 23 in Santa Barbara at Recreation Center. Principal exhibts will include chrysanthemums, dahlias, roses, annuals and pumpkins. Free exhibition entries invited, which should reach the secretary one week before date of show. Many displays are expected from the large estates in Montecito and many of the owners have donated prizes as also have seedsmen of the state.

The officers of the society are: President, P. A. Vincent; secretary and treasurer, Otto Neidemuller; publicity manager, A. R. Gould.

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Knowing the character and condition of your soil as you do, you will know whether to buy a two or three-lever harrow, a tandem, or one of our new leverless tractor disks, but, whichever style is best for your work, you will find a high-grade, up-to-date harrow of that style in the International line, and of a size, suitable to your power equipment. We have sold disk harrows for years, but never was the line so complete, or of such high quality, as the line we offer for 1919. The local dealer will explain the value of the many features we have not space to mention here.

Other useful implements in this line, each built for its own special work, are open end, closed end, and flexible peg-tooth harrows, spring-tooth harrows with single and double end teeth, and one-horse cultivators with every kind of tooth and shovel equipment. These, too, can be seen at the local dealer's place of business, or we will send catalogues on request.

Glance over the list of machines in this advertisement and write us for full particulars about any in which you may be interested.

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The Fresno Fair

THE Fresno district fair opened at Fresno, September 30, under conditions that promised everything but a successful show. On the opening morning there was a heavy rain, but before noon the skies cleared and the attendance the rest of the week was highly satisfactory. It was said that the Wednesday crowd was the largest in the history of the fair.

Few fairs of any size in this state have more attractive grounds and buildings, and with the improvements noted this year excellent facilities are provided for the exhibitors and visitors.

The horticultural and agricultural exhibits were in every way representative of the possibilities and resources of the famous district. The different town and farm center exhibits were very creditable. Clovis was awarded first prize over six other towns in Fresno County.

The show of farm machinery and tractors was especially pleasing.

The live stock show was hardly as well balanced this year as last, there being no entries in the beef classes. Such a condition should not prevail. Fresno is the center of an extensive cattle section and the fair management and the breeders of this state should make an effort to strengtnen this very important department.

The entries in the horse department were also very mediocre.

The dairy cattle department was rather better balanced this year than last.

Holsteins

Five herd of Holsteins competed for the liberal prizes offered. The Higdon, Cornwell and Holmes herds had met at the state fair. The Phillips herd, which has recently been strengthened by the addition of several high class animals from Eastern herds, made its initial show. Mrs. Annie Donders had a small exhibit. Higdon had the senior, junior and grand champion bulls, King Korndyke Pontiac 20th winning final honors over Model Bonnie Fobes De Kol, the senior yearling. Cornwell's two year old Ciruela Walker, first in class at Sacramento, was tied senior and grand champion. Holmes' senior heifer calf was junior champion.

Prof. C. W. Rubel judged all dairy classes.

Exhibitors: W. J. Higdon, Tulare; J. P. Phillips, Fresno; H. E. Cornwell, Modesto; R. L. Holmes, Modesto; Mrs. Annie Donders, Fresno.

Aged bull—1, Higdon; 2, Cornwell.
Two year old—1, Holmes; 2, Phillips.
Senior yearling bull—1, Higdon.
Senior bull calf—1 and 2, Higdon; 3, Phillips.
Junior bull calf—1, Mrs. Annie Donders; 2, Higdon; 3, Holmes.
Aged cow—1, Phillips; 2, Higdon; 3, Higdon.
Two year old—1, Cornwell; 2, Phillips; 3, Higdon.
Senior yearling—1, Higdon; 2, Phillips; 3, Higdon.
Junior yearling—1 and 2, Higdon; 3, Phillips.
Senior heifer calf—1, Holmes; 2, Higdon; 3, Holmes.
Junior heifer calf—1, Higdon; 2, Holmes; 3, Higdon.
Senior champion bull—Higdon.
Junoir champion bull—Higdon.
Senior champion female—Cornwell.
Junior champion female—Holmes.
Grand champion bull—Higdon.
Grand champion female—Cornwell.
Aged herd—1, Higdon; 2, Phillips.
Young herd—1, Higdon; 2, Phillips.
Calf herd—1, Higdon; 2, Holmes; 3, Phillips.
Produce of cow—1 and 2, Higdon; 3, Phillips.
Get of sire—1 and 2, Higdon; 3, Cornwell.

Jerseys

J. E. Thorpe of Lockeford and A. A. Jenkins of Tulare fought for the top places in each class, with the former getting the majority of the leads. The bull championships were divided between the two herds, Thorpe taking the senior placing and the grand championship. Thorpe had both the female champions. E. R. Eichner of Selma also showed.

Exhibitors—J. E. Thorpe, Lockeford; A. A. Jenkins, Tulare; E. R. Eichner, Selma; Di Donato, Clovis.

Aged bull—1, Thorpe; 2 and 3, Jenkins.
Two year old—1, Eichner; 2, Di Donato.
Senior yearling—1, Jenkins; 2, Thorpe.
Junior yearling—1, Jenkins.
Senior bull calf—1, Thorpe; 2, Jenkins; 3, Eichner.
Junior bull calf—1, Thorpe; 2, Jenkins; 3, Eichner.
Aged cow—1 and 2, Thorpe; 3, Jenkins.
Two year old—1, Thorpe; 2 and 3, Eichner.
Senior yearling heifer—1, Thorpe; 2, Jenkins; 3, Eichner.
Junior yearling heifer—1, Jenkins; 2, Thorpe; 3, Eichner.
Senior heifer calf—1 and 2, Thorpe; 3,

Over the Top—the Sale of the Year

A Complete Dispersal Sale of

Our Milking Herd of Registered Holstein-Friesian Cows

Wednesday & Thursday, November 5th & 6th, 1919

100 Cows with First and Second Calf 100

We find it necessary to reseed our land to Alfalfa, therefore we are offering our entire herd of Registered Holstein-Friesian Cows. We are keeping only their calves. These cattle were selected with great care from Pure Bred herds in New York, Michigan, Ohio and Wisconsin. They were purchased as calves and yearlings in the East, grown out and developed on our ranch and are the CREAM of the six carloads which we purchased for our Foundation Herd.

63 now on Year's Test for Milk and Butter. Several have finished their Year's Test and have made good records. They are Choice Individuals doing GOOD WORK with ordinary Herd Feed and care and they are getting BETTER every year. YOUR OPPORTUNITY TO GET STARTED RIGHT with GOOD EASTERN BRED REGISTERED HOLSTEIN-FRIESIAN COWS that carry the Blood of GREAT MILK AND BUTTER PRODUCERS.

All Tuberculin Tested — Write for Catalog

GEO. A. SMITH & SON, Owners — **Corcoran, California**

The Keep On Herd Register of Merit Jerseys

Fifteen Keep Ons won twenty-six prizes and one gold medal. All three first prizes for production went to the Keep Ons. Grand Champion cow and Champion butter cow won by Keep On Herd. Buy a Keep On and get the best. Nothing finer or better. Bred for both show and production. Males and females at reasonable prices. Write your wants.

Dr. H. W. Hand — Orland, Calif.

BREEDERS OF MILKING SHORTHORNS

Senior Herd Sire Oxford Duke 2nd No. 396933, a splendid type of the dairy Shorthorn
Junior Herd Sire Grand Wapsie No. 641734, sired by the 17th Duke of Wapsie

We are offering some young bulls and females of extra breeding and individuality from these sires and the choicest dams in our herd. Tuberculin tested. Write for particulars.

THE JOHN LYNCH RANCH
P. O. Box 321 — Petaluma, Calif.

100 REGISTERED HOLSTEINS 100

—AT PUBLIC AUCTION—

C. A. Miller Ranch, Ripon, Calif.

Thursday, October 30, 1919

In this sale C. A. MILLER will disperse his entire herd with the exception of two cows and a few heifer calves, about 50 head; GOTSHALL & MAGRUDER will contribute 30 head; H. A. De WOLF will contribute 20 head. The cattle are one of the best bred lots to be sold this season, and include a very large percentage of young animals from calves up to open and bred heifers, and young cows, mostly with A. R. O. records or from A. R. O. dams.

A. R. O. COWS WITH RECORDS UP TO OVER 28 LBS. BUTTER IN 7 DAYS.

HEIFERS FROM DAMS WITH RECORDS UP TO OVER 32 LBS. BUTTER IN 7 DAYS.

COWS AND HEIFERS BRED TO A 33 POUND SON OF KING MEAD OF RIVERSIDE.

COWS AND HEIFERS BRED TO A SON OF SIR SKYLARK ORMSBY HENGERVELD

DAUGHTERS OF SIR VEEMAN KORNDYKE PONTIAC, 30-POUND SON OF SIR VEEMAN HENGERVELD

DAUGHTERS OF PRINCE GELSCHE WALKER

DAUGHTERS AND SONS OF KING KORNDYKE PONTIAC 20TH, THE $6500 SON OF MISS VALLEY MEAD DE KOL WALKER

Also a fine selection of sons and daughters of King Segis Pontiac Jannek; It; Moorland King Mead Haskins; King Paul Korndyke Vale; Prince Gelsche Walker 11th; Prince Aralia Walker; Nudine Sutter Boy; Sir Segis Walker; King Morco Alcartra; Colantha Sir Pontiac Aaggie; and others of most popular high record breeding.

IF YOU WANT SOME OF THE BEST BRED, YOUNG REGISTERED HOLSTEIN CATTLE TO BE OFFERED THIS SEASON, BE SURE TO ATTEND THIS SALE.

Every animal guaranteed to be a breeder; no animal tuberculin tested. Catalog free on request.

NOTE—Sale will be held on C. A. Miller Ranch, 6½ miles northwest of Ripon, 13 miles southwest of Stockton on French Camp Road. Tidewater & Southern cars from Stockton and Modesto will stop at ranch on sale day. Parties coming by Southern Pacific will be met at Ripon morning of sale.

Auctioneers:
Col. Ben. A. Rhoades, Los Angeles
Col. Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Calif.

Holsteins and The Milk Check

The size of your check depends less upon the size of your herd than upon the size of your cows. Get big, healthy, pure bred cows with the ability to convert feed into milk at a profit.

Wherever dairying is on a prosperous footing, that's the home of the Holstein cattle. Besides being the leading dairy breed, they bring top prices when beefed. They breed regularly, and the calves are easily reared.

If interested in

HOLSTEIN CATTLE

send for our booklets and inform yourself on how to make money in breeding dairy cattle.

The Holstein-Friesian Association of America, Box 120, Brattleboro, Vt.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
El Monte, Cal.

Bunting's Mission Herefords Are Profitable

They will increase cattle profits by adding pounds of beef to every steer sold. For the best of breeding and individuality visit my herd and see the kind that win at the best shows. Prices reasonable. You'll be welcome.

JOHN A. BUNTING
Mission San Jose Calif.

Quality Holsteins

Our herd is headed by a grandson of the world's greatest dairy cow, Tilly Alcartra,

Sir Aaggie Korndyke Alcartra

whose dam and sire's dam average:
Butter, one year..... 1096.58
Milk, one year.....27316.60
Females and bulls from A. R. O. dams for sale
All animals guaranteed

Leeman & Kilgore, Ripon, Calif.

Brighton Farm Herds

Registered Shorthorns and Berkshires—Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

Some of the finest
GUERNSEYS
In the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

DIAMOND G HEREFORDS

are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 2d, one of the best bulls in the West. Correspondence invited and visitors welcome.

H. H. Gable Esparto, Calif.

Hogs Cows Pigs

120 spring shoats, 100 weanling pigs, 30 brood sows, some registered Duroc-Jerseys. Some cross breeds—3 boars, 2 of them State Fair prize winners.
8 fine cows. Heavy milkers and rich in cream.
Ranch for rent, 55 acres alfalfa, 45 acres pasture. Abundance water, machinery.
J. A. BARKER Dixon, Calif., Box 82

America's Pioneer Dog Medicines

BOOK ON
DOG DISEASES And How to Feed
Mailed free to any address by the Author
H. CLAY GLOVER CO., Inc., 118 West 31st Street, New York

Jenkins.
Junior heifer calf—1, Thorpe; 2, Jenkins; 3, Eichner.
Senior champion bull—Thorpe.
Junior champion bull—Jenkins.
Senior champion female—Thorpe.
Junior champion female—Thorpe.
Grand champion bull—Thorpe.
Grand champion female—Thorpe.
Aged herd—1, Thorpe; 2, Jenkins; 3, Eichner.
Young herd—1, Thorpe; 2, Jenkins.
Calf herd—1, Thorpe; 2, Jenkins.
Produce of dam—1, Thorpe; 2, Jenkins; 3, Eichner.
Get of sire—1, Thorpe; 2, Jenkins; 3, Eichner.

The feature of the dairy show was the winning of the Chandler special herd class by the Thorpe Jerseys over the entire field. In this class, which is really an interbreed contest and therefore very unsatisfactory to judge, $500 is divided in four prizes.

W. F. Chandler Special Dairy Herd Prize, each herd to be one breed of 10 animals and consist of 1 bull two years or over, 4 females three years or over, 1 bull under two years, and 4 females under three years—1st, $200, J. E. Thorpe, Lockeford; 2nd, $150, W. J. Higdon, Tulare; 3rd, $100, J. P. Phillips; Fresno; 4th, $50, A. A. Jenkins, Tulare.

Poland-Chinas

The feature of the Poland-China show was the class and quality shown by the animals exhibited. H. D. McCune, Lemoore, had the first aged boar in King's Massive Orange. Chas. Gatewood won first junior yearling and grand champion boar with his star fair ground champion, Giant Bob. In one of the hardest classes of the show Fred Gatewood won first senior boar pig and junior champion on Fresno Boy. It seems to be characteristic of the Gatewoods to develop grand champions. In the sow classes A. Buckland & Son won first aged sow with Wonder King, an excellent specimen of the breed, and she was later made grand champion. One of the most difficult classes to judge was that of senior sow pig, due to the exceeding high quality of the 16 animals shown. W. T. Dice of Hanford was the winner on Cora Giantess, and she was also made junior champion.

Exhibitors: A. Buckland & Son, Fresno; Fred Gatewood, Fresno; Chas. Gatewood, Fresno; Chas. E. Dack, Fresno; Fred Grant, Fresno; Harry Barkema, Fresno; H. D. McCune, Lemoore; W. T. Dice, Hanford; A. W. Uridge, Kerman; J. C. Palmateer, Kerman; Joel Hall, Kerman; J. W. Hall, Caruthers; J. Van Cleef, Riverdale; E. S. Meyers, Riverdale; W. L. Choisser, Riverdale; Thos. Caesar & Son, Reedley; N. H. Mason, Selma; O. T. Hess, Ceres; Ira L. Mason, Fowler; Elmer Almgren, Reedley; Leslie Bisel, Fresno; J. W. Jones, Caruthers.

Following are the awards:
Aged boar—1, McCune on King's Massive Orange; 2, Grant on Favorite's Best.
Senior yearling boar—1, Buckland on California Jumbo Buster; 2, F. Gatewood on Fresno Sampson.
Junior yearling boar—1, C. Gatewood on Giant Bob; 2, Caesar on Roseland Jumbo; 3, Hess on Fresno Prince.
Senior boar pig—1, F. Gatewood on Fresno Boy; 2, Van Cleef on Vaughn's Jones; 3, Mason on Smooth Leader.
Junior boar pig—1, C. Gatewood on Young Bob; 2, Johansen on Victory Bob; 3, Dack on Binna Boy.
Aged sow—1, Buckland on Wonder Kings; 2, Bissel; 3, Jones on Big Mabie.
Senior yearling sow—1, Barkema on Raisin Queen; 2, Caesar on Model Sunnydale; 3, Choisser on Rose Royal 4th.
Junior yearling sow—1, C. Gatewood on Forrestview Annie 2nd; 2, Dice on Miss Smooth Orphan; 3, Dice on Young Rosebud.
Senior sow — pig—1, Dice on Cora Giantess; 2, Caesar on Miss Smooth Wonder; 3, Almgren on Sallie.
Junior sow pig—1, C. Gatewood on Polandale Betty; 2, C. Gatewood; 3, Dack on Annie's Fall Girl.
Aged herd—1, C. Gatewood; 2, Buckland.
Young herd—1, Buckland; 2, C. Gatewood; 3, J. W. Hall.
Get of sire—1, C. Gatewood; 2, Buckland; 3, J. W. Hall.
Sow and litter—1, C. Gatewood; 2, Buckland; 3, Jones.
Grand champion boar—C. Gatewood on Giant Bob.
Junior champion boar—Fred Gatewood on Fresno Boy.
Grand champion sow — Buckland on Wonder King's.
Junior champion sow—Dice on Cora Giantess.

In the Poland-China futurity prizes were awarded for best litter of four pigs as follows:

1, C. Gatewood; 2, Dack; 3, Buckland; 4, J. W. Hall; 5, Van Cleef; 6, Jones; 7, Barkema; 8, Myers; 9, Carsten & Holloway; 10, Harris.

Duroc-Jerseys

The remarkable rise of this breed in the Fresno territory the past few years was evinced by the largest exhibit, according to a number of breeders present, at any Fresno fair. Joe Chinowth won first aged boar with Joe's Orion Cherry King 5th and first senior yearling, that was first in class at state fair, with Lord's Orion Cherry King. J. E. Thorpe, Lockeford, had

Continued on Page 486.

Roselawn

Makes its greatest public sale offering to date, when a draft of

47 Splendid Registered Scotch and Scotch Topped **SHORTHORNS**

will go to the highest bidder at

Roselawn Stock Farm, Woodland, Calif.

H. M. ELBERG, Proprietor

Thursday, October 16, 1919

CRESCENT DALE

Owing to the material reduction of the herd, occasioned by the settlement of an estate and the readjustment of some farm leases, one of the herd bulls, CRESCENT DALE, will be one of many star attractions among the offerings. This excellent sire combines a pedigree that is hard to fault with a degree of breed character and type that is highly desirable in the head of a high class herd, and his calves stamp him as a sire of proven ability to get offspring of most approved type and quality. A well balanced group of seven Scotch and Scotch topped bulls rounds out a select offering of bulls suitable both for breeders and rangemen.

39 Scotch and Scotch Topped Females

The fifteen great cows with calves at foot, and the beautiful lot of heifers must be seen to be appreciated, but brief mention of a few gives an index to the breeding and quality that buyers will find on sale day, and among them we find: MISCHIEF E 3D, undefeated in Canada, Grand Champion at 1918 California State Fair, dam of Roselawn Champion, junior champion bull in same show; ROSIE MAYFLOWER and MAYFIELD MAGNOLIA, both sired by the University Farm bull Sultan Mayflower, who sired the 1918 Chicago International champion Shorthorn steer and the $5500 bull California Model; LOVELY'S PRIDE 3D, a beautiful roan heifer of the Cruickshank Loveiy family, bred to Roselawn Champion; PEACEFUL 5TH, by Golden Goods, selling with heifer calf at foot by Crescent Dale; and a long list of others of exceptional merit.

IT IS ALSO A MATTER OF PRIME VALUE TO BUYERS THAT ALL THE BRED FEMALES IN THE OFFERING ARE IN CALF EITHER TO CRESCENT DALE OR ROSELAWN CHAMPION.

Every animal guaranteed to be a breeder

Every animal over 6 months old tuberculin tested

Sale begins promptly at 1 P.M.

Auctioneers
Col. Ben A. Rhoades, Los Angeles
Col. H. C. Cranke, Nezperce, Idaho

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager
Sacramento, Calif.

Pure Hawaiian Cane Molasses

Pork Production

By actual test will increase pork production five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price.

Milk Production

One of our customers writes: "We are out of molasses and our cows are falling off in their milk badly, hence we would appreciate immediate shipment. Kindly ship us two tons more in addition."

We supply it in barrels or tank cars for shipment anywhere.
Attend the California International Livestock Show, San Francisco, Nov. 1 to 8.

W. H. Young Company

Holbrook Bldg. San Francisco

Lendorris Ranch

Recent purchases of a number of Big Type Poland-China sows places our herd in the foremost ranks on the Pacific Coast. A recent litter is by Liberator and several by Young Jumbo and Lendorris Liberty Bond. If you are interested in Big Type Poland-Chinas with unquestioned blood lines we would be pleased to have you write us.

W. L. Haag & Son **Hanford, Calif.**

Get Him Now

We have a few young boars by Joe's King just ready for service. This kind sold readily in our recent public sale. They are the right type, strong, vigorous fellows and priced right. Write for full particulars. These are the kind of boars that grow big and sire easy feeding, quick maturing Poland-Chinas.

Les McCracken ***Ripon, Calif.***

It's a Source of Satisfaction to Know Where to Find the Right Kind of Hogs When You Want to Buy

King Jones Over

A son of the great King Jones. Dam by Long King out of a Big Bob sow. He possesses all the qualities of the modern Poland-China, weighs 600 pounds at 14 months, stretchy, deep, well hammed and right up on his toes. He leads the best herd of strictly big type sows in California. Some extra good fall boars for sale now. Cholera immune.

McCarty & Starkweather
P. O. Box 2250, San Francisco
Ranch Paradise Road, Modesto

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

WHIZ-BANG----I Will Sell

He's a grandson of Caldwell's Big Bob, is big himself and will meet the requirements if you want them big. My fall pigs will be by him. Can't use him longer. Two litter mates sold recently, just about a year old. Priced reasonable. Write for more information.

J. H. Cook Paradise, Calif.

The Pacific Herd of Big Type Polands.

Herd sire, King Hadley and A Wonder blood lines.
A few classy 5 months old boars for sale.
Satisfaction or money refunded. Prices reasonable.

Mrs. C. H. Andrews
Route 1, Box 46. Modesto, Calif.

Speak For Them Now!

Litters are arriving by The Yankee, Jr. You'll want a boar by this outstanding sire. The choice ones will go first—some already sold. Write me at once to select yours. Full particulars and price on request.

John M. Bernstein Hanford, Calif.

Breeder Big Type Poland-Chinas

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

GEORGE W. BELL

A BUSINESS AUCTIONEER

When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.

GEO. W. BELL Tulare, California

Live Stock News Notes

SALE CALENDAR

Shorthorns
October 16. Dr. H. M. Elberg, Woodland.

Hereford Cattle
November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Poland-China Swine
October 11, Kings County Poland-China Breeders' Consignment Sale, Hanford.
October 18, Trewhitt, Vaughan and Nehls, Hanford.
October 21, Tulare County Poland-China Breeders' Association, Tulare.

Berkshire Swine
October 22. Western Berkshire Congress, Los Angeles Livestock Show.

Fred M. Johnson, Duroc-Jersey breeder of Napa, who recently disposed of his entire herd to Harvey M. Berglund of Dixon, is now in the East where he expects to purchase 40 high class sows and a boar the equal of any in the West. Johnson will attend the National Swine Show.

John A. Bunting, secretary of the Pacific Coast Hereford Breeders' Association, writes that the latest breeder to join the association is Edward Morgan of Northam, Nevada. Morgan has been identified with Hereford affairs in the West for many years, having been herdsman for the late Governor Sparks. While with Sparks, Morgan made several importations from England.

W. D. Duke, Likely, Modoc County, owner of the Alamo herd of Herefords, has bought the Wadsworth ranch in Siskiyou County and plans to transfer his herd to his new location. The purchase price for the ranch, which is one of the largest in Northern California, is said to have been $325,000.

Defender's Ohio Maid is the great Duroc-Jersey brood sow owned by W. Moore, Fallbrook, San Diego County. This fine sow was a close second to the noted Winsor Ranch sow, Model Defender Lady, at the San Diego fair. Added to this distinction she farrowed a litter of 11 fine pigs the night before the show.

Moramarco Bros., breeders of Poland-Chinas at Van Nuys, Los Angeles County, have purchased a part of the well known Whitley "show place" adjoining town.

D. H. Ogden of Alpine, San Diego County, was showing a nice string of young Herefords at San Diego last week. The Ogden Herefords are entered for both the Riverside and Los Angeles shows. They are representative of one of the largest breeding herds in the south end of the state.

For uniformly big type Durocs Falfadale Farm stands in a class by itself. At this fine breeding headquarters at Perris, Riverside County, are to be seen today no less than 18 first class sows mated for fall litters to the great boar, Winsor's Giant Orion, the largest boar of the breed even seen on the Pacific Coast. At the Riverside and Los Angeles shows this month will be seen a fairly representative exhibit from Falfadale Farm at the head of which will be the great young boar, Great Orion Sensation, Jr., selected in person by Manager "Burt" Wilkinson from the leading show herd of Nebraska. Since it required $2000 in cold cash to buy this young hog it will be more than a mere matter of curiosity among up to date breeders of Durocs to size up his merits. Mr. Wilkinson argued that with the high class sows at Falfadale Farm he needed the best boar that money could buy. See the herd at the fairs.

First in war and first in peace—that is the scheme and plan upon which the Underhill Hampshire breeding operations are to be conducted at Santa Barbara. It was the Underhill Hampshires that blazed the way for quick progress in the Hampshire field in the Pacific Coast country through the staging of a public sale of breeding stock in the month of July. All went well on sale day, every animal catalogued finding a ready buyer. At this time there are yet to spare at Underhill Rancho some high class bred sows of exceptional breeding; likewise some fine yearlings, both gilts and boars. There are a pair of yearling boars also of tip top breeding, but they cannot be longer used in this herd. Manager Dunsmore reports prospects the very best.

The Ireland Ranch, Owensmouth, has recently sold four fall yearling daughters of Cherry Volunteer 2d to T. P. Tupman at Bakersfield for $600. The Ireland Ranch bred sow sale is booked for January 31—an event that should close the year's operations at this well known Duroc breeding headquarters in a blaze of glory.

The offering at public sale in Hanford, Saturday, October 18, of bred Poland-China sows and gilts by Messrs. Trewhitt, Vaughn and Nehls will include such as My Giantess, E. Choice 1st, To Wonder, Miss Orphan and Sunlight Giantess. In speaking of these sows Messrs. Trewhitt and Vaughn said: "These are the kind that are bringing the top prices in the eastern sales." Some were selected by Mr. Vaughn on his visit to eastern herds last winter. They will be bred to good boars and have the very best blood lines. Seventy head will be sold, most of which will be bred.

W. D. Trewhitt in announcing the sale that he, together with C. A. Vaughn and G. H. Nehls, will hold in Hanford, October 18, says: "The animals to be sold are all of big type breeding, as that is what is wanted by the farmers and breeders today. We have selected what we consider a high class lot of sows and gilts. The sows have proven prolific and conform to the high standard set for size, type and breeding. Seventy head will be sold in this sale and no doubt there will be a large number of buyers in attendance. It is highly improbable that a better lot of individuals will be sold this year, and no doubt the results of this sale will show that good Poland-Chinas will always find a ready market.

The Tulare County Poland-China breeders are making every effort to make their first sale a big success. This sale will be held in the new live stock pavilion, Tulare, Tuesday, October 21, and 46 bred sows and gilts and four young boars will be sold. Particular attention has been paid to the selection of the animals to be sold as well as the blood lines of the individuals. Hugh C. Shinn, secretary, states that the offering includes outstanding individuals sired by some of the best boars on the Pacific Coast. The sows and gilts will be bred to boars the equal of any found in the state, and that assures the purchaser a litter of correct type and breeding.

Elliott-Brant Rancho, Guernsey headquarters at Owensmouth, is now well launched in the Duroc game. About 65 fine pigs are in evidence in the fall litters, the get of the big junior yearling, May Rose King.

Donald H. Graham, breeder of big Durocs in the Antelope Valley, plans a "coup" for 1920 with his big junior champion boar, Orion's King Gano. As senior yearling the big fellow is looking tip-top, but he will rest on his laurels the present year in the interest of future triumphs.

Under new and thoroughly competent herd management the Fred Hartsook big type Poland-Chinas at Lankershim are now in the very pink of condition, with about 50 big pigs in the fall litters.

Eastmont Farm at El Monte, Grant A. Brown, owner, will present a young herd of Jerseys at both Riverside and Los Angeles. These young Jerseys are to feature the three year old herd bull Lady's Shylock's Financier.

Burr Farm, Holstein headquarters on Downey Road, Los Angeles, under the energetic management of Geo. M. Brown, will do some effective breed publicity work at the big live stock shows in Southern California.

The Ortega Underhill Ranch at Santa Barbara has at head of herd of Hampshires three great boars of the breed; Gen. Allen's Counterpart, Draper Laddo, and Tipton Senator.

Falfadale Farm, noted Duroc breeding establishment at Perris, owns some of the great brood sows on the coast, daughters of P. L. and W's Great Model, litter brother to the noted Winsor Ranch boar Great Model.

Kill the Hog Lice

Keep your hogs' skins healthy and free from lice and you'll get more pounds of l. gh priced pork. Sprinkle Dr. Hess Dip and Disinfectant freely about pens, feed troughs and yards. Use it the year round to kill lice—to destroy disease germs—to purify the air—to ward off contagious diseases. Disinfect the barns and poultry houses. Also use it about the house. in the sick room, in sinks and cesspools to establish better health conditions.

Dr. HESS & CLARK
Ashland Ohio

DR. HESS DIP and DISINFECTANT

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or Strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. $2.50 a bottle at druggists or delivered. **Book 1 R free.**

ABSORBINE, JR., for mankind—an antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. It heals and soothes. $1.25 a bottle at druggists or postpaid. Will tell you more if you write. Made in the U. S. A. by
W. F. YOUNG, Inc., 24 Temple St., Springfield, Mass.

SANTA ANITA RANCHO

Anoakia Breeding Farm

Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five gaited saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding

Correspondence Invited

Anita M. Baldwin
Santa Anita Calif.
W. H. Taylor, Supt.

Long Jumbo and Yate's Big Orphan

have sired some wonderfully fine pigs. Big type Poland-Chinas by these two boars for sale at a reasonable price. Write immediately for full description. Fully guaranteed to satisfy

R. J. Yates, Orland, Cal.

When Writing Advertisers, Mention The Cultivator.

A. B. Humphrey's double decker display (Guernseys and Berkshires) will be in place in the live stock section at Los Angeles again this year, under the care of that well known crack showman Lowry.

The Diamond Bar Ranch at Spadra, Los Angeles County, is now the best equipped swine breeding establishment on a large scale in the south end of the state. With 100 brood sows, many young litters and the 325 young Durocs of the spring litters, the big ranch presents one of the liveliest scenes of the day in pure bred live stock circles.

W. M. Carruthers, Like Oak, reports the sale of two Berkshire sows and a boar to Dr. C. E. Moulton of Yuba City. The sows were sired by Mayfield Superbus and the boar is a son of Mayfield Champion.

C. L. Hughes has just wound up a week of sales in which around 600 head of grade Holstein cows, heifers and calves were cashed for close to $65,000. During the week of September 23 to 29, Hughes, assisted by Col. Ben A. Rhoades of Los Angeles, made the following sales: Roeber Co., Maxwell. 100 head for approximately $13,000; Brookhollow Farm, Hollister, over 100 head for about $13,500; San Mateo Dairy Ranch Company, San Mateo, 225 head for upwards of $30,000; Yellow Bank Live Stock Company, Davenport. 110 head for approximately $13,500. In view of the fact that a large number of young things were included the prices obtained were considered highly satisfactory and indicate a keen demand for grade Holstein females. The cattle went to buyers from a wide territory.

George C. Kreutzer, superintendent of the Durham colony, purchased 56 grade Holstein cows in the Roeber sale. September 23. The cows will be distributed among the colonists.

SHORTHORN SALE AT SAN FRANCISCO

The Ormondale Ranch at Redwood City will enter six head of heifers and two head of bulls in the Shorthorn sale at San Francisco on Thursday, November 6. The quality of these animals under the able hands of James McDonnell, the superintendent of the ranch, is assured.

H. L. & E. H. Murphy of Perkins have entered the three heifers which they were fitting for the Sacramento fair and which owing to the illness of E. H. Murphy they were unable to show.

Two choice heifers will be consigned by the Pacheco Cattle Company of Hollister.

The beef cattle exhibit at the live stock show promises to be excellent both from the standpoint of number and quality.

EL DORADO COUNTY FAIR

El Dorado County will hold an agricultural fair October 23-24 at Placerville. L. J. Anderson, district club leader, writes: "This is the first attempt of the agricultural club and farm bureau to put over a community fair and we hope to make it quite a success. We will show in the largest building in town a variety of exhibits produced by the agricultural club members, such as registered Durocs, sheep, goats, poultry, potatoes, corn, rabbits, also domestic science and manual training exhibits. Besides this the forest service and horticultural commission will have extensive displays and there will be a number of commercial concessions of a high type."

CONTRA COSTA COW TESTING

The report of the Contra Costa Cow Testing Association for September shows 11 animals producing more than 40 pounds fat. The highest record is held by a pure bred Holstein owned by Bock Bros. of Pacheco. This cow produced 65.70 pounds fat from 2.190 pounds milk testing three per cent. The second highest producer was a grade Durham belonging to M. W. Hotchkiss of Knightson, 51.90 pounds fat from 1,212 pounds milk testing 4.2 per cent. Mr. Hotchkiss had three animals on the honor roll; Bock Bros., two; J. M. Christen, Pacheco, three; E. H. Fox, Oakley, three.

WAIT FOR THIS SALE

Big Type Poland-China Sows and Gilts

Hanford, Calif. Saturday, Oct. 18th

WORTH WAITING FOR

My Giantess T's Wonder E. Choice 1st
Miss Orphan Sunlight Giantess
and 65 more just like them sell

Come early as the sale will start promptly at 1 :30 A.M.
Geo. W. Bell, Tulare, is the Auctioneer

Trewhitt, Vaughn and Nehls

Everybody wants Big Type Poland-Chinas. Here they are in this sale.

Tulare County Poland-China Breeders Association

Will Sell

Tuesday, Oct. 21st
Tulare, Calif.

46 Bred Sows and Gilts
4 Young Boars

We invite every one interested in good Poland-Chinas to attend this sale. We have carefully selected this offering and know that it is right in every way. Every animal is sired by as good boars as can be found in the West and bred to the same kind. Individual merit will predominate in this sale and every animal will be a profitable investment.

Sale starts at 12.30 P.M. Lunch 11.30 A.M.
Geo. W. Bell, Tulare, Auctioneer

Write for Catalog to

R. F. Guerin, Pres. Tulare Hugh C. Shinn, Sec'y

Select Registered Herefords at PUBLIC SALE

Friday, Nov. 7, San Francisco

The offering will consist of an especially selected lot of registered Hereford cows, heifers and bulls, that will surpass in average quality and in number of top attractions any previous offering of the breed in the West.

Among some of the good ones already selected are: CALIFORNIA PRIME DONALD, junior and grand champion bull at 1918 California State Fair; NEVADA LAD 8TH, first prize senior calf at 1918 California State Fair; ISIS 2ND and FAIRLAND VENETIA 2ND, first and second prize senior heifer calves at 1918 California State Fair, and they are both safe in calf to the $10,000.00 bull, BEAU BLANCHARD 76TH.

Sale Under Auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, Pres., Wells, Nev. J. A. Bunting, Sec., Mission San Jose, Cal.

Auctioneer: Col. Earl Gartin, Greensburg, Ind.

Sales Manager: C. L. Hughes, Sacramento, Cal.

AUCTION

192 **Head of Beef Cattle Hogs, Etc.** 192

On the old Barnet Ranch, on the main San Diego Road, 3½ miles south of

ESCONDIDO, San Diego, County

Tuesday, October 21st, at 10 A.M.

These cattle are all tops and include Polled Angus, Herefords and Shorthorns. There are

60 head of Heifers and Young Cows, 2 to 4 years old.
20 head of 4-year-old Cows with calves at side.
60 head of Weaned Calves.
50 head of Yearling Steers.
2 Pure Bred, Registered Hereford Bulls.

This is a selected lot of cattle and should appeal to the discriminating buyer.

HOGS HOGS HOGS

20 head of sows heavy with pig, Durocs and Poland Chinas.

Registered Poland-China Boar, 110 head of shoats; 5 barrows and 15 pigs.

Also a new 280-ton silo, never erected.

Note—A large lot of HORSES, MULES AND IMPLEMENTS will be sold on Monday, Oct. 20th, at 10 a. m.

Don't fail to attend this big sale. Write for full information.

Black Mound Cattle Co., Owners

Rhoades & Rhoades

Auctioneers

1501-3-5 South Main Street Los Angeles, Calif.

The Highest Priced SIRE and SON

KING KORNDYKE PONTIAC 20th

and HIS SON

KARLRAY PONTIAC TOLA

King Korndyke Pontiac 20th, our junior herd sire, at $6500, is the highest priced Holstein bull ever sold at public sale in California.

Karlray Pontiac Tola, a three months old son of King Korndyke Pontiac 20th, and the great heifer K. P. Tola Joe, has been sold by Gotshall and Magruder, Ripon, to A. B. Spooner, San Luis Obispo, at a price never exceeded in California for a bull calf at private sale.

In these instances price is a true measure of quality.
Why not put a son of this sire at the head of your herd?

OUR ENTIRE HERD IS TUBERCULIN TESTED

Tulare Holstein Farm

W. J. HIGDON, Owner TULARE, CALIF. H. L. REDD, Herdsman

THE FRESNO FAIR

Continued from Page 483

the first junior yearling and grand champion boar in Freddy You'll Do, while J. P. Mallory, Fresno, had the junior champion boar in California Trailfinder. Thorpe had both the grand champion and junior champion sows in Delight of Mossdale and Reggie's Twilight of Mossdale.

Exhibitors: C. G. McClure, Fresno; J. A. Mallory, Fresno; E. Borges, Fresno; Joe N. Chinowth, Visalia; Fulgham & Sons, Visalia; R. E. Clifford, Strathmore; M. Cross, Raisin City; S. K., Kelsey Ceres; Ellis & Ellis, Tulare.

Aged boar—1, Chinowth on Joe's Orion, Cherry King 5th; 2, Fulgham on Col. Chief.

Senior yearling boar—1, Chinowth on Lord's Orion Cherry King; 2, Kelsley on Orion Good Enuff 3rd.

Junior yearling boar—1, Thorpe on Freddy You'll Do; 2, Ellis on Highland Good Enuff; 3, McClune on Max's Model.

Senior boar Pig—1, Mallory on California Trailfinder; 2, Chinowth on Al's Orion King.

Junior boar pig—Thorpe 1-3, on Regulator You'll Do Again and You'll Do Prince; 2, Fulgham on Royal Critics Pathfinder 1st.

Aged sow—1-2, Thorpe on Delight of Mossdale and Happy Lass of Mossdale; 3, Mallory on Imperial Angiola 2nd.

Junior yearling sow—1, Thorpe on Miss You'll Do; 2, Walker on Pioneer Queen 3rd; 3, Mallory on Col's Best Good Enuff.

Senior sow pig—1, Thorpe on Reggie's Twilight of Mossdale; 2, Cross on Red Velvet.

Junior sow pig—1, Thorpe on Reggie's You'll Do; 2, Chinowth on Joe's Orion Lady; 3, Clifford on Lady Uneeda Col.

Aged herd—1, Thorpe.

Young herd—1, Thorpe; 2, Clifford; 3, Chinowth.

Get of sire—1, Thorpe; 2, Clifford; 3, Chinowth.

Grand champion boar — Thorpe on Freddy You'll Do.

Junior Champion boar—Mallory on California Trailfinder.

Grand champion sow—Thorpe on Delight of Mossdale.

Junior champion sow—Thorpe on Reggie's Twilight of Mossdale.

Sow and litter—1 and 2, Mallory.

In the Duroc Jersey futurity for litter of four pigs the following awards were made: 1, Clifford; 2, Chinowth; 3, Fulgham; 4, Chinowth.

Junior boar pig—1, Fulgham; 2, Chinowth; 3, Clifford; 4 and 5, Chinowth.

Junior sow pig—1, Chinowth; 2 and 3, Clifford; 4 and 5 Fulgham.

Chester Whites

Foster Bros., Fresno, were the only exhibitors and were awarded all prizes in the classes in which they had entries.

J. L. Thatcher of Sacramento judged all breeds of swine in a manner entirely satisfactory to both the breedors and the ring side.

MARSH-McCRACKEN POLANDS AEVRAGE $160

The Marsh and McCracken sale of Poland-Chinas was held in Modesto October 4. Fifty-six bred sows and gilts and four young boars were sold for a total of $9,560, making the very satisfactory average of $160. The top of the sale went to Lendorris Ranch, owned by W. L. Haag & Son, Hanford, in the sow Ripon's Pomona Girl, bred to King's Big Bone Leader, at $420.

John M. Bernstein, Hanford, secured an outstanding gilt by Kansas King, bred to King Jones Over, for $315.

Geo. V. Beckman & Sons, Lodi, secured Long Wonder Girl, bred to King's Big Bone Leader, for $340. M. Bassett, Hanford, secured one of the real outstanding sows of the sale for $340.

A number of weaned pigs were sold for from $20 to $50. On Friday evening Marsh and McCracken tendered the Poland-China breeders of the state a banquet, to which the farmers and bankers were invited. Wm. Bernstein, Hanford, president of the State Poland-China Breeders' Association, presided, and the principal speaker was H. C. Carr, banker, of Porterville, who spoke on the relations of the banker and farmer, especially regarding live stock. He laid special stress on the value of the boys' pig club movement.

Geo. W. Bell of Tulare was the auctioneer, assisted in the ring by Ord L. Leachman and Cy Clark.

Following is detailed report of the sale:

Marsh Consignment.

1, Langhorst Bros, Lodi, $250.
2, J. F. McSwain, Merced, $155.
2½, C. J. Colburn, Turlock, $105.
3, J. H. Cook, Paradise, $150.
3½, Milk producers' Association, Modesto, $80.
4, A. M. Bibens, Modesto, $150
5, H. K. Dickson, Bakersfield, $95.
6, J. Y. Peterson, Lemoore, $130.
7, H. J. Kimball, Crows Landing, $145
8, J. Y. Peterson, $160.
9, S. J. Boone, Newman, $155.
10, J. Y. Peterson, $155.
10½, L. McCracken, Ripon, $125.
11, Hammond & Andrews, Modesto, $200.
12, C. J. Kelleran, Modesto, $85.
13, L. McCracken, $155.
14, Luther Thompson, Modesto, $115.
15, Arnold Hattam, Bakersfield, $160.
16, C. M. Stetson, Keys, $160.
17, J. Y. Peterson, $100.
18, W. A. Harr, Haywards, $125.
19, A. A. Plagge, Oroville, $75.
20, Ruth Hammond, Modesto, $85.
21a, A. J. Elliott, Tulare, $220.
22a, A. J. Elliott, $285.
22b, J. Y. Peterson, $140.
23a, Haag & Son, Hanford, $320.
24a, John M. Bernstein, Hanford, $315.

McCracken Consignment.

21, Haag & Son, $420.
22, R. F. Guerin, Visalia, $230.
23, Geo. V. Beckman & Sons, Lodi, $340.
24, Frazier Bros., Ripon, $165.
25, F. C. Dollard, Ripon, $135.
26, A. A. Plagge, Oroville, $80.
27, W. H. Brower, Angels Camp, $85.
28, Haag & Son, $200.
29, J. Y. Peterson, $150.
30, F. C. Dollard, $100
31, J. Y. Peterson, $140.
32, Frank Dolly, Ripon, $100.
33, J. Y. Peterson, $150.
34, G. F. Storm, Lodi, $170.
35, J. F. McSwain, Merced, $150.
36, John M. Bernstein, Hanford, $170.
36a, California Twine Co., Escalon, $95.
37, J. Y. Peterson, $175.
38, S. J. Boone, $160.
39, H. C. Shinn, Tulare, $175.
39½, J. Y. Peterson, $150.
40, Eugene Miner, Lodi, $100.
41, Frank McVey, Turlock, $80.
42, J. Y. Peterson, $135.
42½, J. Y. Peterson, $150.
43, Loyd & Tointon, Santa Rosa, $120.
44, J. Y. Peterson, $150.
45, J. Y. Peterson, $130.
46, H. J. Kimball, $125.
47, J. Y. Peterson, $95.
48a, M. Bassett, Hanford, $340.
49a, J. F. McSwain, $135.

Maricopa County, Arizona, has entered into an agreement with the builders of a dam across the Gila River, near Gila Bend, to permit building a bridge across the structure. This will furnish a direct connection between Phoenix and the rapidly growing mining town of Ajo.

ARCADIAN

Sulphate of Ammonia

Don't delay in making arrangements for your next year's ARCADIAN Sulphate of Ammonia that is to be used on grain.

ARCADIAN Sulphate of Ammonia is for sale by: CALIFORNIA: San Francisco; Hawaiian Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Pacific Guano & Fertilizer Co., Western Meat Co., California Fertilizer Works. Los Angeles; Pacific Guano & Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Agricultural Chemical Works, Hauser Packing Co. OREGON: North Portland: Union Meat Co.

For information as to application, write

The Barrett Company
Agricultural Department
510 First National Bank Bldg.
BERKELEY, CALIF.

SHOWED THE VALUE OF TESTING

One of the most interesting, and at the same time instructive, exhibits at the state fair was the demonstration staged by the Sacramento and Yolo Cow Testing Association. Three cows were used, and above them was a sign inviting the public to pick the high and low producers. One cow had a record of 623 pounds fat, one produced 561 pounds and the third produced 231 pounds fat. To the average dairyman there was little to indicate the producing ability of the three cows, and it was just that fact that drove home to the dairyman the folly of neglecting to tests his own cows in order to weed out the boarders.

This association, which is one of the most active in the state. is doing very effective work. Last December when the new board of directors took charge there were 700 cows in the association and only two per cent were on the honor roll. At present 2300 cows are being tested and there have been months when 20 per cent were in the honor list.

Indicating the value the association is rendering the members, R. E. Watson and A. E. Greene, directors, told of one member whose herd stood near the bottom during the spring months. This same herd is now well up toward the top, the owner declaring that he "could not afford to have his herd at the bottom." He put into practice better methods of feeding and management, weeded out his unprofitable cows, as shown by the test, and has increased his net profits $200 per month.

Members have become interested in better methods, and the sale of purebred bulls has developed notably.

The association inaugurated a contest to last throughout the year and several thousand dollars worth of prizes were secured. Part of the exhibit at the state fair consisted of a large case of cups being offered in the contest.

ELBERG SALE A SHORTHORN OPPORTUNITY

With only a few days left before the notable sale of Shorthorns to be held at Roselawn Farm, Woodland, there is still time for breeders throughout the state who are interested in this breed to make their plans to attend the sale. It is a foregone conclusion that the vendue in question will be accorded wide patronage owing to the established reputation of the Roselawn herd and its owner, H. M. Elberg. Few sales have been held in the West that have offered as much attractive breeding material, and the sale should provide a splendid opportunity for breeders and beginners to make selections that will strengthen their herds. The sale will include many of the cows that have been among the best producers in the herd, and will also include an exceptional lot of heifers. Only a few bulls will be sold, but those listed, including the good herd bull, Crescent Dale, are of a quality that will please buyers who are demanding a better class of bulls than formerly.

The sale is expected to mean much to the development of the pure bred beef cattle industry in this state. The time is at hand when cattlemen must look to the pure bred bull to cheapen their production casts, and when once the possibilities along this line are more generally recognized there will develop a demand that will necessitate the establishment of many more breeding herds.

DISPERSAL SALE

George A. Smith of Corcoran writes regarding his dispersal sale of Holstein-Friesians as follows:

"This is a complete dispersal sale of my milking herd of young registered Holstein-Friesian cows. We are keeping only their calves. They are all tuberculin tested. Sixty-three of them are now on year's semi-official test and doing good work. Several have finished their year's test and made good records. They are all Eastern bred cows which we purchased from pure bred herds in New York, Ohio, Michigan and Wisconsin. We bought them as calves and yearlings and have grown them out and these are the cream of our purchases."

HEREFORD BREEDERS TO HOLD SALE

Secretary John A. Bunting of the Pacific Coast Hereford Breeders' Association writes that the sale to be held November 7 at the San Francisco Livestock Show promises to bring out the best lot of cattle ever offered by members of that organization. The sale will consist of about 35 head and will include only a few bulls. The selection of the offering was placed in the hands of Alec McDonald of the university farm and he was instructed to pick only individuals of exceptional merit as it is the hope of the association that the sale will induce a number of men to take up the breeding of Herefords. The sale is to be managed by C. L. Hughes of the California Sales and Pedigree Company, Sacramento.

AN ENVIABLE RECORD

Within 30 days the firm of Rhoades and Rhoades of Los Angeles has conducted sales of dairy cattle in 14 different counties in California. Their sales have extended from the Mexican line in San Diego County to Maxwell in Colusa County. Among the counties in which they sold were Orange, San Diego, Los Angeles, Ventura, San Benito, San Mateo, Yolo, Colusa, Sacramento, San Joaquin, Kings, San Bernardino and Imperial.

Col. Rhoades stated that the demand for dairy cattle in these various sections of the state was excellent and it was no trouble to get $200 or better for a good cow. In fact the herd of L. Lothras on October 2 averaged $209 per head, with the high cow selling at $305.

CATTLEMEN'S CONVENTION IN NOVEMBER

The California Cattlemen's Association will hold a meeting in San Francisco November 5-7, the week of the Livestock Show. The meeting will be largely given over to a discussion of the proposed regulatory legislation now before congress.

Among the prominent men who are expected to appear on the program are; T. W. Tomilson, secretary of the American National Livestock Association; Frank W. Tomson, editor of The Shorthorn in America; R. W. Kinzer, secretary of the American Hereford Breeders' Association; O. M. Plummer, manager of the Pacific International Livestock Exposition, and H. A. Jastro, chairman of the marketing committee of the state association.

WAYS IN WHICH HOG CHOLERA MAY SPREAD

The germ of hog cholera may be carried to healthy herds in many ways. The most common way in which cholera is spread is direct contact between sick animals and well ones, or direct contact through yards, pens, cars, food or other material which has been contaminated by sick hogs. Around cities cholera is often spread through the feeding of scraps or swill. Small irrigating ditches passing through infected farms may also carry the infection to herds lower down. Crows, buzzards and other carrion-eating animals may be responsible for the spread of hog cholera. Direct sunlight kills the virus of hog cholera quite promptly, but it is possible that it may retain its disease-producing powers for a considerable time in the soil in moist, sheltered localities, especially during cool weather. James P. Jacks, veterinarian, bureau of animal industry and University of Arizona.

In the James Jeffries Holstein show herd at the Los Angeles Livestock Show may be seen the noted sire King Segis Pontiac Jannek and a few of his get. Jeffries will show from his Burbank ranch the 9-year-old cow, Gerben of Maple Lane 2d; also her daughter, granddaughter and great granddaughter. In her younger days this cow made better than a 25-pound record, and she is capable of better than 30 pounds today.

Nearly two inches of rain fell in Phoenix September 27 and 28. Rain was quite general over the state and adds to the water supply of the range country and will also help the fall feed very materially.

"THEY'RE OFF"

HORSE RACING DAILY

at the Los Angeles

Live Stock Show

"Five Big Shows in One"

Exposition Park October 18-26

Live Stock Show *Society Horse Show*
Kennel Exhibit *Poultry Display*
Race Meeting

150 World Famous Horses in Pacing and Trotting Races including

Columbia T. Barbara D.
Kitty Bon. The Acme.
Raisin Express. Joe Mc K.
Grattan Boy. Sister Norte.
Harry Mac. Walter H.
Dolly D.

$55,000 in Premiums

THIRD SALE OF SHORTHORNS

Under the Auspices of

California Shorthorn Breeders Association

will be held at

California Building, Exposition Grounds San Francisco

in conjunction with the

San Francisco Live Stock Show

On Thursday, November 6th, 1919

at 1:30 P.M. sharp

30 Head Registered Cows and Heifers
10 Head Registered Bulls

For Catalog Address

CALIFORNIA SHORTHORN BREEDERS ASSOCIATION
222 Sharon Building San Francisco, Calif.

Auctioneer, EARL GARTIN, of Greensburg, Indiana

Mossdale Farm

JERSEY CATTLE DUROC-JERSEY SWINE

We believe that the test of a sire lies in his ability to sire uniform, prize winning offspring, and we are proud of the record of Mossdale sires.

Jerseys---

Our herd bull, JOLLY SENATOR RALEIGH, was never defeated in class as a yearling or as a two-year-old and this year he was grand champion, as a three-year-old, at the California State Fair, the Kings County Fair and the Fresno Fair. And at each of those shows his get won the get of sire class.

Duroc-Jerseys---

The record of Mossdale Durocs at recent fairs is proof of their merit. Freddy You'll Do, our herd boar, sired the winning get of sire group at the above fairs.

We can furnish young things of either breed at prices that are attractive. Write us your wants.

See Mossdale Exhibits at Los Angeles and San Francisco

J. E. Thorpe Mossdale Farm Lockeford, Calif.

When writing advertisers, mention The Cultivator.

Economy Stock Powder

will keep your pigs in condition by acting on the liver, kidneys and blood. Will keep the stomach sweet, expel worms, aid digestion and prevent white scours and thumps.

Send for a free sample and our booklet "Economize Your Farm."

Economy Hog and Cattle Powder Co.

1016 Hearst Building San Francisco

Diamond Bar Ranch
Spadra, Los Angeles County, Calif.

DUROC-JERSEY SWINE

Leading Breeders of the Big Type

Our 1919 show herd: Mammoth Sensation 2d—one of largest junior yearlings of the breed, 1st prize, senior, reserve senior, and reserve grand champion at Sacramento; California's Great Wonder, grand champion at Sacramento, 1918, and Great Sensation 2d, one of the crack yearling sons of old Sensation. Two aged sows—Critic's Rose, grand champion at Liberty Fair, 1918, and Critic's Orion; also our "Big-4" string of junior yearling sows—Ohio Sensation Girl, Willetta Idlewild, Pathfinder's Col. Girl and Gano's Wonder Girl, blending the top blood lines of the breed; pair of under-year sows—Pathfinder's Very Best and King's Golden Girl, daughter of Great Wonder I Am.

20 Ribbons at Sacramento, 1919. Comprising ¾ Winnings Entire Show.

Senior boar, 4th; junior yearling boar, 1st; senior boar pig, 3d; aged sow, 2d; senior yearling sow, 2d; junior yearling sow, 1st, 2d and 3d; senior sow pig, 1st and 4th; reserve senior champion and reserve grand champion boar, and reserve junior champion and reserve grand champion sow.

325 pigs to select from for the trade, sired by California's Great Wonder and a son of Orion Cherry King 5th; also bred sows mated to leading boars of the breed. Write us or visit the ranch.

Walter T. Gatton, Manager Swine Department

3 Sensations 3

Winsor's Giant Orion The Largest Boar on Pacific Coast

Great Sensation 3rd The Largest Boned Boar, for Age, on Coast

Great Model The Most Popular Sow Sire on the Coast

We can supply Duroc-Jersey sows or gilts bred to these boars that will return three dollars for every dollar invested. We will be pleased to answer your inquiry.

Winsor Ranch R. K. Walker Manager **Bonita, Calif.**

Greenwood Farms

State Fair prize winning Duroc-Jersey boars, young fellows sired by our prize winning boar JOHNSON'S DEFENDER, JR.

These young boars growing fast—good judges say they are the best they have seen this year. Let us tell you more about them.

H. C. Witherow, Mgr. **Live Oak, Sutter Co., Calif.**

All Good---We Sell

No animal leaves our ranch for breeding purposes unless it is of the correct Duroc-Jersey type and breeding.
That's one reason, and a mighty good reason, for our large business.
Write me just what you want and I will send you full description and price them reasonable.

Allen Thompson **Tulare, Calif.**

RANCHO DEL SUR DUROCS
THE BIG JUNIOR CHAMPION,
ORION KING GANO at head of herd
Also in service, the great boar
CALIFORNIA'S ORION CHERRY KING
Young boars fit to head first class breeding herds now for sale.
For description, etc., write
DONALD H. GRAHAM, Lancaster, Calif.

IF YOU WANT

good Duroc-Jerseys we have them—priced right. None better bred and have the size for age. We can satisfy you if you want this kind. Write to

The Gardiner Ranch **R.F.D. 4, Sacramento, Calif.**

Is a Calf Worth 23 Cents?

For 23 cents you can insure your calves against death from Blackleg by having them vaccinated with PURITY BLACKLEG AGGRESSIN (The Kansas Germ Free Blackleg Vaccine.) One treatment Immunizes for life and there is no danger in introducing Blackleg into healthy herds of cattle. We also manufacture and sell PURITY ANTI HOG CHOLERA SERUM, PURITY MIXED VACCINE for swine, and PURITY HEMORRHAGIC SEPTICEMIA VACCINES for cattle and sheep. Stop your losses and increase your profits—it's good business. For service that counts and does not end by selling, write, wire or phone

PURITY SERUM CO., J. L. Thatcher, Manager (Successor to Thatcher Serum Co.)
Riverside, Calif. Sacramento, Calif.

Beef Feeding in the Salt River Valley

The following feeding practice is from a report of County Agent H. C. Heard of Maricopa County, Arizona, and is based upon an interview with E. C. Cavness, manager of the Burnt Ranch on the Phoenix-Glendale road where extensive beef fattening operations have been carried on for the past few years.

Mr. Heard says: "The Salt River Valley plant of the Burnt Ranch is maintained as a sort of safety valve for the ranch, at the head of Lime creek some 65 miles north of Phoenix where 4,000 head of cattle are run by Cavness Bros. While baby beef has been fed out mostly so far, it is not necessarily the intent to keep up this practice. For the last two years range feed has been short and the calves have been rather thin. For this reason all of the steer calves and cull heifers have been finished in the Salt River Valley plant. Mr. Cavness culls his own cows very closely and at present has his range so well cleaned of old cows that those he discards each year are still profitable as feeders and do not have to be dumped on the canner market.

"Mr. Cavness has fed out about 1,200 calves in each of the last two winters. The average age of the beginning of the feeding period is about six months, with the extremes running from five to eight months. When brought in, calves will probably average slightly under 400 pounds and are fed for a period of about 150 to 160 days, in which time the average gain is close to two pounds per day. These calves begin on a ration of all of the ensilage they will eat and all of the chopped alfalfa they care for, supplemented by one pound of cottonseed meal and one pound of ground barley and milo. About each week the grain is increased three-fourths of a pound until a total of around eight pounds per day per head is fed. The meal is increased gradually to about two pounds per day.

"Last winter the old cows were fed about twenty-five pounds of cotton seed hulls per day supplemented by one pound of ground grain and a pound of cottonseed meal, with two or three pounds of chopped hay fed once daily. The meal and grain were increased gradually to about four and one-half pounds of each. It is likely that this year's feeding operations on the Salt River Valley plant will be confined mostly to yearlings and old cows, since the range is very good and most of the cows will probably come through the summer in good shape for the calves to run with during the winter.

"Mr. Cavness is a firm believer in ensilage and also in variety in rations. His project has been carried through in the Salt River Valley in the face of the opinion of a number of people, that range stock will not make satisfactory gains on concentrated feeds. He has found at times some little difficulty in starting a good rate of gain on calves which have been starved on the range, but has made a success of feeding even these animals."

Agricultural College Plans Big Year of Testing

With 16 Holstein herds carrying official tests in September, besides the regular semi-official tests in all the dairy breeds, the testing season of 1919-20 has commenced with such a rush that farm authorities forecast the greatest year of record making that California has even seen. High prices for breeding stock from tested herds, the return of settled conditions, and the rapid growth of California pure-bred dairy interests are putting breeding more and more on the solid base of production.

During the year ending August 1, 1918, official testing in California was greatly handicapped by the unsettled labor conditions on dairy farms and especially by the scarcity of trained men for supervisors of official tests. Nevertheless, during this past year 354 semi-official or two day tests, and 233 official tests have been carried on in 104 pure bred dairy herds in California. Of these 65 were Holsteins, 22 Jersey, 12 Guernsey, two Ayrshire, and one Milking Shorthorn. One herd was composed of both Guernseys and and Holsteins, and another of Guernseys, Holsteins, Ayrshires and Jerseys. There seemed to be a marked tendency towards longer time tests, 93 of the 233 official tests running for 30 days or longer. The lead given to long time records by the establishment of the first strictly official record of more than 1000 pounds of fat here in California is being strengthened, and many animals completing seven day tests are also being tested for yearly production on semi-official tests.

For the oncoming season of extensive testing the college of agriculture of the University of California declares itself in an excellent position to supply its force of trained accurate supervisors for these tests. To the ranks of its old men in this work it is adding veterans of the great war who have shown exceptional ability in this activity.

To overcome the handicaps from war service 145 soldiers were sent early in June to the University Farm at Davis to be trained in different fields of agriculture. Those who preferred dairying were put through a systematic course for three months. The men who did especially well in the work with the Babcock test were given further training and practical experience in carrying herd tests in the University Dairy herd. It is stated that their work thus far indicates that they will make very capable, accurate supervisors. Official testing offers them a living for the present and an excellent chance for further observation and study in California dairy herds before starting out for themselves or as herdsmen for others.

The small breeder, it is said, who plans to commence semi-official testing, can cheapen considerably the cost to himself in several ways. In California a flat rate is charged for these two day tests. The supervisor may test up to 10 cows per day, when milked three times a day, and 15 cows may be secured through the year at no greater cost than that of a single animal. In certain counties having cow testing association testers whose work is known to be accurate and reliable by the University, the tester is permitted to carry on semi-official testing for not to exceed three months in succession in any herd. Of course, he must carry out strictly all of the rules as laid down by the breed associations. The cost of such supervision is then a matter of arrangement between the cow testing association and the owner.

Semi-official testing at this time is said to be of special interest to all Jersey breeders as the American Jersey Cattle Club on July 1 commenced a great after the war revival of testing with its slogan "10,000 Jerseys on Test." California's quota for the campaign was set at 200 head. During July 107 head were tested, a record of 54 per cent of the assigned quota for the first month. This was surpassed in per cent only by six other states. During August 115 cows were tested, indicating that the assigned number most likely will be reached in California before the end of the contest, July 30, 1920.

The office of the official dairy tests was moved to the University Farm, Davis, on September 1, with Paul I. Dougherty in charge of advanced registry, succeeding Miss Cora J. Hill, resigned. Mr. Dougherty was formerly farm adviser in Imperial County. Applications for tests, addressed to Animal Husbandry Division, Davis, California, by letter, telegraph or phone, will receive prompt and careful attention.

UNUSUAL RECORDS BY GRADE DAIRY COWS

L. B. Gale, cow tester, reports that during the month of August three grade cows owned by Peter Hansen of Ingomar, Merced County, made the following records: A grade Shorthorn produced 1,839 pounds milk containing 95.62 pounds fat; a grade Holstein, 1,962 pounds milk and 90.25 pounds fat and another grade Holstein 1,845 pounds milk and 81.18 pounds fat.

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A wool pool is being formed in Butte County.

In the report just issued it is stated that three years ago Hansen was milking over 35 cows. He joined the cow testing association and began a systematic culling, and during the three years he has bought and sold over 100 cows in developing his herd. He now has 15 such cows, which he milks himself, and is getting more butter fat from 12 of these than he did from the 35 original cows.

BUY FEEDS UNDER NEW PURE FEED LAW

Buyers of mixed feeds should bear in mind that the pure feed law passed by the last legislature will go into effect November 1, 1919, and they should govern their buying accordingly. A number of the leading manufacturers have already placed their products on the new basis and buyers will do well to seek out those brands that are sold according to the requirements of the new law. Increasing feed costs make it imperative that consumers of mixed feeds get full value for their money, and for the benefit of our readers who may not be familiar with the new law we print herewith the more salient features of the law.

Section 1. The term "commercial feeding stuffs" shall be held to include all feeding stuffs used for feeding live stock and poultry, except the following:

(a) Whole seeds or grains.

(b) The unmixed meals made directly from and consisting of the entire grains of corn, wheat, rye, barley, oats, buckwheat, flaxseed, kafir, milo and light rice; provided that light rice shall be labeled "light rice" when ground.

(c) Whole hays, straws, cottonseed hulls and corn stover, when unmixed with other materials.

(d) All other materials containing sixty per centum or more of water.

Section 2. The standards for commercial feeding stuffs shall be the latest revision of the definitions of feeding stuffs adopted by the association of feed control officials of the United States.

Section 3. Every lot or parcel of commercial feeding stuffs sold, offered or exposed for sale or distributed within this state shall have affixed thereto a tag or label, in a conspicious place on the outside thereof, containing a legible and plainly printed statement in the English language, clearly and truly certifying:

(a) The net weight of the content of the package, lot or parcel;

(b) The name, brand or trade mark;

(c) The name and principal address of the manufacturer or person responsible for placing the commodity on the market;

(d) The minimum per centum of crude protein;

(e) The minimum per centum of crude fat;

(f) The maximum per centum of crude fiber;

(g) The maximum per centum of ash;

(h) The specific name of each ingredient used in its manufacture.

(i) The per centumn of such ingredients as corn cobs, corn bran, oat hulls, barley hulls, rice hulls, ground light rice, alfalfa meal or similar materials, when such constitute a portion of the package, lot or parcel.

(j) In the case of poultry feeds, the per centum of grit or mineral matter they contain.

Copies of the complete text can be secured from the Great Western Milling Company, Los Angeles, one of the first firms to comply with the new law.

The man who raises breeding stock for the purebred market needs to postpone the castration of the pigs to a much later age than he who produces pork altogether. The older the pig the more accurately one can judge as to his future worth as a breeding animal. Those pigs that are to be porked should be castrated when five or six weeks old, as animals at this age recover from the operation much more rapidly than more mature ones. Within reasonable limits the earlier this work is done the less trouble one will have. In performing the operation be sure that the incision is low enough to permit proper drainage. Disinfect thoroughly after castration with bichloride of mercury or one of the coal tar preparations and see that the pig's sleeping quarters are sanitary with clean dry bedding.—Duroc Bulletin.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

What Mountain Fires Mean to the Rancher

AS he has orchard properties whose value depends upon irrigation waters flowing from the Sierra Madre mountains, in which the recent fires occurred, Martin Fesler of Covina felt that his interests called for an investigation after the fires had passed. He visited the mountains and tells of his experiences—observations, rather, of conditions—in the fire swept area. He writes in the Covina Argus:

Mary Jane was born the year of the big flood, and the bull pup was three days old when the fire broke out in the San Gabriel canyon. That is about all these great calamities mean to many people unless they lost a summer cottage or had a corner of their ranch washed away.

If you could see the thick, silty ooze that is coming down the streams just now, sealing up the ground and hastening the flow of water to where it is not wanted, it might tell you a story of floods and dry streams next summer, but possibly it will take a few seasons to bring that fact home to each one of us.

Eighty thousand acres were burned over in the San Gabriel watershed. Much of this was so densely grown over with sage brush that you could crawl over it. Underneath was the accumulation of leaf mold and brush that acted as a great sponge to hold back the rains and force them into the ground. After the fire had destroyed all this, you could hear the rumblings of the rock and earth as it slid down into the gullies.

About four years ago a canyon was burned over just south of the Alpine Tavern. Just take a look at it when you are going that way and it will tell you what our watershed will be like during the next 15 or 20 years.

The time to fight a fire is about six months before it breaks out, or, better, through a series of years in a well planned set of firebreaks.

If I have ever thought for a minute that it was no part of my business to contribute to the San Dimas firebreaks, because I get my water out of another canyon, I will have a lifetime to regret that short-sighted policy. We may think we are too old to go out to fight a fire, but we are not too old to move when the floods come.

When the silt begins to fill up the harbor and these washes become the crest of the country, and the channel takes another course, it is then that we will realize that we are vitally interested in the entire watershed as a whole, and not just our particular narrow canyon where we get our individual supply. Long Beach and all the intervening country, and especially Covina, is interested in the San Dimas territory, for it feeds the San Dimas wash, and if any considerable amount of water comes down, it could easily take a new course down through some of the most valuable groves in the country.

The thing to do is to get busy now and prepare for this. Up in San Dimas canyon is a proposed dam. There are about a half dozen men and an old horse working where there should be a thousand men at work. With any sort of speed a part of this dam might have been completed and utilized to hold back the water, and possibly save millions of dollars' worth of property.

Other projects could be started in other places to save this water that used to be held back by the vegetation that is now gone. Out of this fire may come greater and better things, but until something is done I shudder to think of what could and may happen. The funds are available for this work in San Dimas canyon and it should be the business of every taxpayer to make all the noise he possibly can to awaken our officials to the needs of the hour.

It is too late to crab about what ought to have been done before it all happened. The thing to do now is to get busy and remedy the loss as speedily as possible.

Beans

Regarding the bean marketing situation, President George A. Turner of the California Bean Growers' Association issues the following statement.

To thoroughly understand the position of the bean grower one must consider the situation from a statistical standpoint:

Year	U. S. Crop Bushels	Hold-over	Total Available
1917....	14,967,000	3,000,000	17,967,000
1918....	19,506,000	4,824,000	24,330,000
1919....	10,630,000	6,000,000	16,630 000

The best information available from the Orient is to the effect that the food shortage in the past year, particularly of rice, the Orientals' principal article of food, was such that much of the acreage that was formerly planted to beans will this year be planted to rice. Consequently not more than one-half of last year's crop of beans will be produced this year.

No large stocks are held by the wholesalers throughout the country and all indications point to a steady demand for the product. The old system of operation was for the speculative buyer at harvest time to depress the market by every possible means so that the farmers who must sell at least a part of their crop to meet urgent financial requirements would be compelled to sell at whatever price was offered. Once the crop was out of their hands it did them no good to see prices advance.

With a desire to prevent just this condition the California Bean Growers' Association is now so financed that as soon as the growers' beans are delivered a payment is made of approximately one-half their value. This will avoid the marketing of a large lot of beans on the market controlled by speculators and will permit of the marketing of the product according to the demands of the trade.

At the present moment every possible effort is being made to pull the market down, and this is having its effect. The speculator is getting quite a few beans. If a farmer is willing to sell his beans at less than cost you can't blame anyone for taking them away from him, but the true situation does not warrant the bean grower selling his beans at prices that do not cover cost plus a reasonable profit. Beans sold on this basis are by far the cheapest food obtainable and there is no reason on earth why the grower should sell below the cost of production.

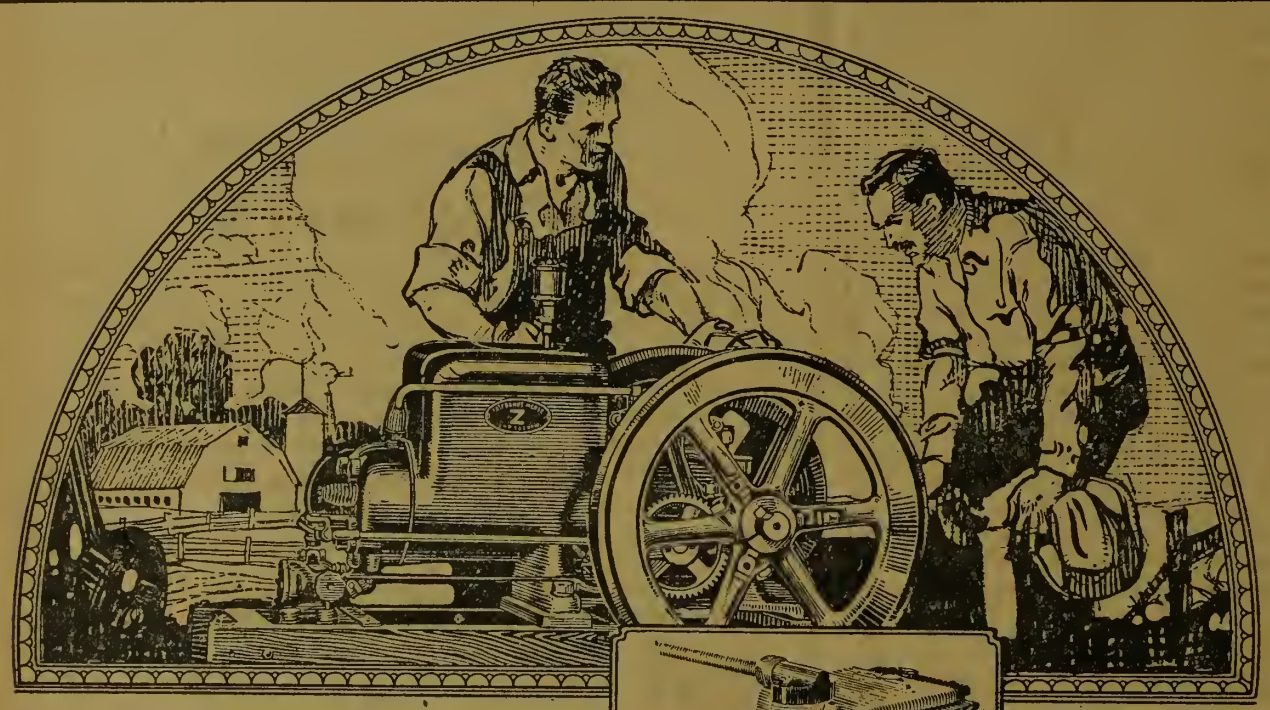
The carry-over from last year, considering the crop, is not excessive throughout the United States. It is about 1,824,000 bushels more than the carry-over of 1917, and from reports at hand the present crop is 8,876,000 bushels less. Thus we go to market with 1,700,000 bushels less to sell than was actually sold last season.

Of the carry-over quite a lot of beans were off grade. This fact causes the California growers more concern than is warranted. All other bean producing sections are frequently confronted with this condition and there is a wide market for beans of low grade. Of course there is a differential in the price, but not nearly so great as the grower is lead to believe. In the past two weeks large sales of off-grade beans have been marketed by the association in addition to sales of beans of better grade.

All informed bean men look for a steady market at fair prices, and the new crop is coming in of such excellent quality that it can and will hold its own with beans of any section.

Claims have been made that beans are no longer popular as an article of food. These claims are silly in view of the fact that 5,207,000 more bushels of beans were consumed in 1918 than in 1917 in spite of the fact that an order of "pork and" is billed at from two to six times what the restaurants formerly charged.

My advice to the bean grower is to demand cost plus a fair profit for his product. He is entitled to it and can obtain it. I do not wish to convey the idea that he can obtain anything he demands. He must always keep in mind that beans are essentially a poor man's food and must always be relatively cheap.



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Questions and Answers

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Rhubarb Between Rows

I want to plant quite a lot of rhubarb this fall. I must plant it in my young orchard. Trees are 20 feet apart each way. Can I plant two rows between the trees? How deep and how wide should the trench be? If I get a few loads of rather fresh horse manure mixed with straw can I rot it and make it ready for use in a few weeks by soaking it every two days? I want to raise rhubarb for local market and get it ready as early as possible. Please give me advice on making the trenches and planting.—Truck Gardener, Concord.

The distance apart for the rows is usually five feet, plants one and one-half feet in the row. This requires 5,800 plants per acre. Plant any time when the young plants may be secured from September to May. The close planting recommended gives longer stems which are inclined to be more tender than when a greater distance is allowed. By throwing out a trench as deeply as possible with a plow and throwing in a quantity of well rotted stable manure, then cultivating this into the soil, there will be sufficient trench left for the planting. Poultry manure, dried blood or other fertilizer rich in nitrogen gives a product of fine quality. If fertilized as above recommended there should be no question that with sufficient water this crop could be grown successfully and still not injure young orchard trees. During the heat of the summer decomposition is very rapid and by keeping reasonably moist at that time and forking over to prevent its burning it will sufficiently decay in a few weeks so that there will be no weed seed capable of starting. The forking over, however, is necessary to prevent burning. Care must be used not to drown out with too much water or decomposition will be stopped and the most available of the plant food leached away. The best results with fresh manure are secured where it is placed directly underneath the surface of the soil. That will not answer, however, for rhubarb.

Common Nightshade

Can you please tell me the name of the enclosed leaf and berry? In Canada it is called the garden huckleberry and it is used in making pies. It looks so very much like nightshade that I would like to be quite sure the berries are edible.—Subscriber, Sierra Madre.

The leaves and berries you send are of the common nightshade. The berries are not poisonous. No species in California bear poisonous berries, but we have heard of children being ill from eating the green berries. This would probably happen if they ate green tomatoes, which belong to the same family.

Pollenize Mammoth Blackberry

Please tell me in your question and answer column what other kind of blackberry to plant with the Mammoth blackberry to pollenize it. I have a Mammoth blackberry vine and it never bears fruit. What is the trouble?—Subscriber, Rail Road Flat.

Pollinate your Mammoth blackberry by planting the Loganberry beside it as the Mammoth is self-sterile. —J. W. M.

How many know that something like half a million cats were employed in the war as "gas detectors"? No creature, from the least to the greatest, who could help win the war was spared; and, from the least to the greatest, there was nothing more that each could give than his life.

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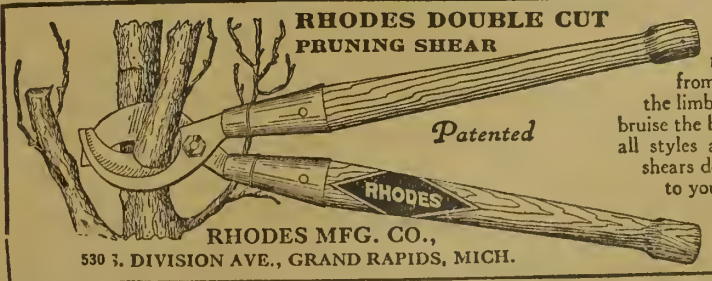

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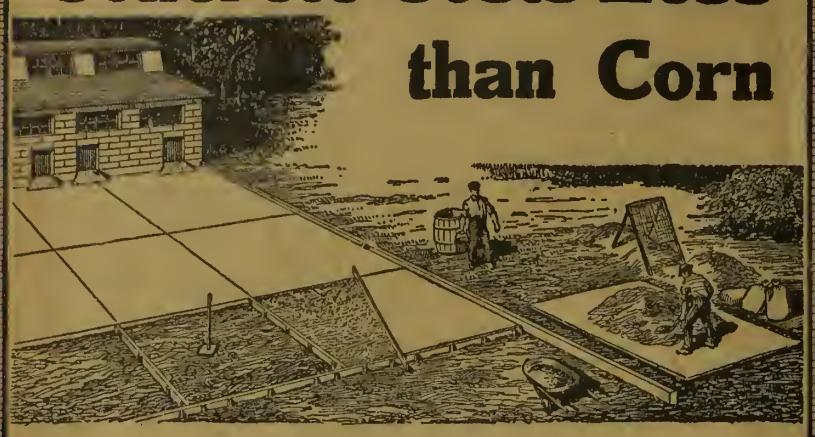

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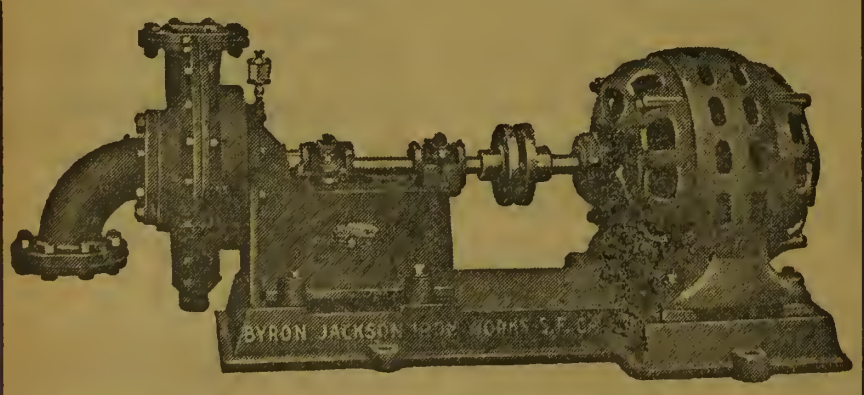

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Some Cures for Roup

By Jean A. Koethen

IT WAS the veteran poultryman and writer, J. H. Robinson who said, "As long as you cure roup you will continue to have roup in your flock," meaning that the bird which has once had roup is likely to retain a tendency to the disease in its system and to pass this tendency on to its offspring. As it is not always easy for the novice, however, to distinguish between a common cold, called noncontagious catarrh, and roup, some of the more common and simple treatments for the disease may be useful just now as we are entering on the season when respiratory diseases of all kinds are prevalent.

First, as to the symptoms of roup: Watery eyes, discharge of mucus from the nostrils, swollen or inflamed eyes, swellings below the eyes, either or all accompanied by lassitude, weakness, loss of appetite, roughened plumage or fever, may accompany an attack of roup, but the one certain symptom, so far as I know, which distinguishes roup from an ordinary cold, is a peculiarly heavy and offensive odor. All authorities agree on this. Whether or not the odor has been exactly described to you you will recognize it when you meet it, for there is nothing like it, and when you detect it on your nightly round of the laying house you may know roup is in the flock. It may be the affected bird will not appear very sick; she may keep her red comb and her appetitie, and the only sign of illness may be a thickish discharge from the nostril. Nevertheless if she carries this odor with her she has roup and she may be a greater menace to the health of the flock than a bird that is apparently much more seriously affected, for she carries contagion wherever she goes. Such a bird should be removed from the flock at once and treated with one of the remedies given below. When she is cured band her with a colored band so that you may never make the fatal mistake of using her in the breeding pen. If roupy birds are kept only for laying no great harm is done, though they are apt to lack the vigor necessary to high production. It is when they are permitted to reproduce their roupy constitutions that trouble begins.

Use Simple Remedies

It is a great mistake to purchase expensive remedies for roup. The simple home remedies, such as would be used in first aid for the family before the doctor is called, are better and far cheaper than patent nostrums. Professor Dryden of the Oregon station recommends just three remedies for roup: peroxide of hydrogen, which is usually on the shelf of any family medicine closet; kerosene, which costs ten cents a quart and has a hundred uses, medicinal and domestic; and permanganate of potash, which is the base of some patent roup cures, and of which a nickel's worth is sufficient for treating a good-sized flock. The peroxide is used for washing out abcesses and swabbing the throat. The permanganate treatment has often been mentioned in this column. It consists of dropping a few permanganate crystals into a quart measure or lard pail of slightly warm water and dipping the head of the diseased bird in the pink colored liquid. Its object is to wash out the nasal passages thoroughly, and it should be repeated two or three times a day, a fresh solution being prepared each time until improvement is seen. When Professor Dryden uses kerosene he swabs the face and sprays the throat or nostrils as the case requires. Naturally he does not use more than one of these remedies at once.

North Carolina Treatment

Dr. B. F. Kaupp of the North Carolina station is one of the few M. D.'s who have been sufficientiy interested in poultry to write doctor books for them. Dr. Kaupp is a little more thorough in his treatment than Professor Dryden, but suggests that unless a bird is valuable it is better to kill than cure. He syringes out the nostrils and other affected places first with a 20 per cent solution of common baking soda, which dissolves the mucus. Next, to thoroughly cleanse the parts, he syringes with peroxide of hydrogen and water equal parts. After this a healing medicine is required, and he prepares the following, which is also injected: oil of thyme 30 drops, oil of eucalyptus 20 drops, menthol 10 grains, oil of petrol 2 ounces.

This, like the other liquids sprayed on inflamed mucus surfaces, is slightly warmed.

Government Remedies

Dr. D. E. Salmon of the United States department of agriculture is one of the recognized authorities on poultry diseases. He recommends any one of the following for dipping the heads of birds affected with roup: Boric acid, one ounce; water, one quart; permanganate of potash, one dram; water, one quart; boric acid, one and one-quarter ounces; borate of soda, one-half ounce; water, one quart; peroxide of hydrogen, one ounce; water, three ounces. When the inflammation has reached the eye he uses argyrol. One or two drops of a 15 per cent solution is introduced between the eyelids twice daily for several days.

"Before applying these remedies," he says, "it is well to wash the eyes and mouth with warm water containing one teaspoon of common salt to a quart, using a pledget of cotton and rubbing gently, at the same time pressing and massaging about the nostrils and under the eyes to loosen the accumulated secretion. If there is much swelling under the eyes it must be carefully opened with a sharp, clean knife, all the secretion removed, and the cavity washed with one of the above-mentioned solutions. A pledget of cotton moistened with the solution may be left in the opening for an hour or two or it may be dusted with iodoform powder. When the swelling under the eyes is not very large or hard it may often be reduced by massaging it in such a manner as to press the contents toward the nostril. After treating the birds in this manner the head should be well anointed with pure or camphorated vaseline."

A Simple Spray

Dr. N. W. Sanborn advises the use of an atomizer for applying disinfecting solutions to the mouth and nasal passages and recommends the following solution for a spray: Extract of witch hazel, 4 tablespoons; liquid carbolic acid, 3 drops; water, 2 tablespoons.

He applies the spray twice a day, squeezing the bulb five times for each nostril and twice for the mouth. He also recommends washing the cavities of the nose and throat with peroxide of hydrogen diluted one to three times with water.

Prevention the Main Thing

After reading the above prescriptions my readers will agree, I am sure, that prevention is far easier than cure. Roup, let it be remembered, is a disease of dampness and filth. Foul air, damp houses, drafts from behind the roosts are the main contributing causes which produce this very troublesome disease. If houses are clean, dry and well ventilated, without drafts and with plenty of sunshine, there will be very little roup in any flock. Drainage is also important. Put the poultry house in the highest available location so that water and damp air will settle away from it instead of into it. Hens are more susceptible to damp air than many persons realize. Chill winds should also be guarded against either by facing the house away from the prevailing winds or by windbreaks of some sort. It is the hen that is uncomfortable, chilled perhaps, when she goes out of her warm house into the morning air, annoyed by a draft on her head at night, forced to breathe air that is foul with the odor of droppings, that first succumbs to colds and roup.

Poultry Queries

Conducted by J. A. Koethen

Peas for Poultry Feed

I have been reading in a poultry book on the food value of the regular

table pea for poultry. It says that the pea contains more protein than corn or wheat. That being the case, could the pea be substituted for wheat or corn? In what form can peas be fed; in mash, whole or cracked, or both? And kindly inform me the proportions to use with other grains and in mash. I am going back on my ranch near Oakdale shortly and if peas are good for poultry I may plant about five acres this winter.—Subscriber, Oakland.

Professor Dryden says peas could be used for poultry wherever they can be raised cheaply and easily. They should be ground into meal and incorporated into the dry mash, and may be made as much as ten per cent of the whole by weight, but you will probably have to begin with less if the hens are not accustomed to them. The mash now used at Davis consists of five pounds each of bran and shorts, three pounds meat scrap, two pounds soy bean meal and five pounds ground barley. You can substitute the pea meal for the soy bean meal, but not for the meat scrap.

Poultry House of Tarred Paper

Can a good poultry house be made out of tar paper?—Subscriber, Oakland.

Tarred paper makes an excellent house, but the edges of the paper must be well battened down with strips of wood, and the roof must be laid over a foundation of rough lumber or it will soon sag and tear.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, September 26, 1919. Report for the forty-seventh week ending September 25.

The forty-seventh week of the egg laying contest at Storrs finds the hens laying better than the five year average for the corresponding week by 27 eggs. The total production of eggs for the week was 2.794 or a yield of nearly 40 per cent. When it is realized that the birds have had very unfavorable weather conditions for the past month it is hard to explain just why they are doing so well. The management thinks however, that it is due to the abundance of tender green grass and succulent food which has been available, resulting both as a feed and a tonic keeping the birds in good health and stimulating good laying.

The Barred Rock pen owned by Jules F. Francais, of Westhampton Beach, Long Island, is the leading pen in the contest to date as well as the leading pen for the week, laying a total of 49 eggs. A pen of Leghorns entered by D. Tancred, Kent, Washington, was a close second, laying 48 eggs for the week.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francais, 1837; Laurel Poultry Farm, 1773; Howard R. Sullivan, 1659.

White Wyandottes

W. Brady, 1548; Curtis L. Allen, 1441; Merrythought Farm, 1389.

Rhode Island Reds

Laurel Hill Farm, 1719; Deer Brook Poultry Farm, 1649; Chas. H. Lane, 1585.

White Leghorns

J. Frank Dubois, 1750; Hilltop Poultry Yards, 1721; Kirkup Bros., 1711.

Miscellaneous

Chickatawbut Farms (White Rocks), 1552; Pequot Poultry Farm (Rhode Island Reds), 1496; Albert T. Lenzen, 1366.

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SLOBBERS AND SNUFFLES

By W. D. White

It is with interest that the writer reads the different "ads" of remedies for these diseases, and each time he wishes that he could impress on each rabbit raiser that old saying: "An ounce of prevention is better than a pound of cure."

It is true that these diseases are contagious and stock that is not in good physical condition is liable to infection and it is best that they be isolated from the others and treated with a good remedy at once.

But it is also true that it is better still to prevent these diseases by proper conditions and care. Drafts produce colds; quick changes in temperature and fogs do likewise; gases from foul hutches or foul grounds under them irritate the membranes of head or throat—result after a time, snuffles. The moral is, prevent drafts, keep hutches and grounds clean, thus saving time, trouble, expense and loss of stock.

Again stock may eat dirty hay, foul grain and, if hungry, their own droppings, resulting in stomach out of order, indigestion, and the outward sign of these inner troubles is slobbers.

Clean hay, good grain regularly fed with pure water are the means of prevention.

All rabbits require more roughage than concentrates, and good clean pure hay prevents many troubles. Clean foods, pure water and salt, given regularly—these with good care —are the ounce of prevention that saves the pound of cure.

SORE-HEAD

Dr. N. W. Sanborn, extension poultry husbandman of the University of Florida, recommends use of sulphur in treatment of chicken pox. He writes:

"Sore-head, or chicken pox, is common in all southern states. It is less likely to appear in pleasant weather than in the wet days of summer. Spring and autumn outbreaks are seldom hard to handle.

"Sore-head is a germ disease with a period of incubation and a history similar to measles in children. One attack is all that comes to any chicken. If a hen is exposed to the disease and does not become ill, it is because she had the disease when younger. There is a period from seven to 13 days after the chicken is infected before any sores or ulcers appear. This explains outbreaks following the buying of breeding stock: birds become infected before shipping and develop sore-head several days after their arrival.

"The source of infection is the blood of the ill chick, the scabs, and the discharge from the ulcers and the mucus of nostrils and mouth. In preventing spread and in stamping it out these facts should help. Dry sunny conditions hinder the spread of sore-head; damp, dark conditions are favorable to it.

"Sore-head is not caused by filth, damp houses, poor feeding, or low general vitality. It is the combination of sore-head with something else that makes it serious.

"Sore-head is spread by insects, mites and mosquitoes, though cases may follow scratches in the mouth or newly made punch marks in the feet. The buzzard eats dead chickens, sore-head ones too, and his droppings may bring the disease even when miles from a neighbor.

The Treatment

"There is one remedy that is approved, that is, the daily use of flour of sulphur given in the mash. When sore-head appears make your mash five per cent of sulphur, keeping it before all your poultry. That is, take 95 pounds of mash and add five pounds of sulphur. Feed this for five days, then omit the sulphur for two days, continue for three weeks.

"Epsom salts is also used by some, but should be used carefully. A clearing out of the bowels is always good treatment in any disease with fever, but it is needed early and seldom more than once. It can be added to the drinking water or to a moist mash, so that each chicken of three to five pounds gets one-quarter teaspoon or less. Under the use of sulphur some chickens will fail to show any symptoms of sore-head, yet they may be having a mild attack that will prevent them having it later."

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Big Type Durocs—Herd headed by California Orion King. Am offering some excellent boar pigs of spring farrow Inquiries solicited. Prices reasonable Harvey M Berglund, Dixon, California.

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Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Glantess Wonder, his sire Big Jones—both big both winners—a combination of the greatest blood of the breed Breed big type Polands Start right by using this blood Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st OXBONE Herd Poland-Chinas Tipton California

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

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Strictly Big Type Poland-Chinas; El Profito heads herd at 900 lbs.—a line bred Big Timm. Viola L. Renwick, Santa Barbara, California.

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The male is half the flock, therefore he should be of the best breeding. We are offering 500 breeding cockerels; 350 from 200 egg hens or better, the other 150 the pick of all our regular pens. Prices range from $5.00 each and up. Discount on large quantities. Shipment to be made October 1st. No fall chix for sale. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trap nested S. C. White Leghorns every day in the year since 1912. Box B-337, Inglewood, California.

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White Leghorns, chix and hatching eggs, also a few cockerels from Curtis' heavy layers. We spare no expense to produce heavy layers with strong vitality. Any chick is good enough for some but the progressive poultryman demands the best. Spring orders are being booked now. All our chicks are hatched from eggs laid in our own yards. O. B. Curtis and Son, Gardena, California. Route 1, Box 29.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

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MISCELLANEOUS

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PHEASANTS

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Laws Affecting Dairying.

The general act as to the manner of keeping dairies provides that no person shall sell or deliver to any buyer or consumer unclean or stale milk, cream, butter or other milk product, nor any milk product which has been produced or handled under sanitary conditions, or which is produced from cows affected by any disease or within five days after, or 15 days preceding parturition. A dairy is defined as unsanitary if the drinking water is stagnant or polluted; if the yards or inclosures are filthy, or if on any part thereof manure is deposited in heaps or permitted to ferment; if the walls become soiled with filth; if on the interior of the stables or sheds an application of a lime whitewash is not made at least once in two years, or if in the mangers decaying material is allowed to accumulate; if the pails or other milk containers are not sterilized with boiling water or superheated steam whenever used; if the person or wearing apparel coming in close contact with the milk becomes soiled or is not washed from time to time; if a suitable milk house is not provided properly screened to exclude insects; such house shall not be located on the residence, in a barn or poultry house and shall be used for no other purpose; nor shall milk be cooled, mixed or kept in any sleeping or living apartment or place which is occupied by cattle or fowls, and such milk must be cooled within one hour after drawn from the cows; if any cesspool, pig pen or other filth accumulation is permitted within 100 feet of milk house, or 50 feet of the point where milking is done.

A creamery is defined as unsanitary if milk is permitted to be received from an unsanitary dairy or in a state of putrefactive fermentation; if the utensils are not sterilized or if the floor is so constructed that it permits milk to soak in the interstices so decay can take place; if drains are not provided which will convey away all refuse, or if any foul odors are permitted to reach the product, or if the factory does not have good ventilation or permits insects or other species of animal life, or if the bodies or wearing apparel of the employes should be uncleaned or unwashed.

No addition of any compound containing salicylic acid, formaldehyde, coloring matter or chemical, other than salt shall be added to prevent fermentation in the case of milk or cream, except that buron may be added if the milk container so plainly states. In case of the addition of gelatine or other substance, the container shall plainly contain a statement of such addition. The word "Pasteurized" may be used only upon a milk product if the same has been exposed to a temperature exceeding 150 degrees Fahrenheit as provided later in the act.

No person shall sell or receive for sale any milk or cream unless based upon liquid quart, containing 57.75 cubic inches, except that milk may be sold on a basis of its butter fat content or at eating places by the glass. No person shall sell or have in his possession for sale any milk or milk product as pasteurized, nor use that word in connection with such milk product unless there has been an actual pasteurization of the milk as provided by the act. Butter shall be sold only in terms of pounds and ounces avoirdupois. Every person operating any dairy where more than four cows are milked, and every milk dealer must register prior to November 1st of each year a statement showing his full name and address and also that of the owner of the business with the statement of class of business carried on and the number of cows milked in the case of the dairy, and make such other annual reports on blanks, furnished by the state dairy bureau, as it may require.

In case any butter is sold in a package, and under a label purporting to designate the producer of the butter or the place of production, it must correctly name its true producer or place.

No one shall manufacture, sell or have in his possession for the use of patrons any product or compound made in whole or in part from any article not produced directly and at the time of manufacture from unadulterated milk or cream, or shall be colored in imitation of butter or cheese, unless the same be plainly marked as "Oleomargarine," or "substitute," with the name and address of the manufacturer, place of manufacture and ingredients, and everyone furnishing such product to a consumer must accompany the same with a written and verbal notification that the substance is a substitute.

Renovated butter is defined as butter reduced to a liquid state and manipulated in connection with milk or some product. In order to deal in renovated butter, oleomargarine, or any other butter substitute, a license must be procured from the state dairy bureau and a complete record of the different classes of substitutes must be kept.

It is unlawful for any milk hauler or person receiving or purchasing milk to fraudulently manipulate the weight measure or test or take unfair samples. In taking such samples, the milk or cream shall be thoroughly manipulated until uniform and homogeneous in richness before the sample is taken, nor shall the Babcock test when used be under or over read or the records falsified, or read at any temperature other than between 130 degrees and 140 degrees Fahrenheit. The basis of measurement or weight is 17.6 cubic centimeters for milk and 9 or 18 grams for cream. Milk or cream purchased on the basis of butter fat must be made by a tester licensed by the state dairy bureau.

The act contains particular specifications to which standard Babcock testing glassware must comply.

It is unlawful for anyone to produce, prepare or have on hand for sale any milk or milk product which is adulterated. The term milk product applies only to such as consist of milk or milk products alone. It is unlawful for anyone to use any word describing milk or milk products wherein the thing sold is not within the definition as given in the act. Milk is defined as the fresh clean lacteal secretion obtained within 48 hours if raw and 60 hours if pasteurized immediately prior to its delivery to the consumer or purchaser from the complete milking of one or more healthy cows properly fed, excluding that obtained within 15 days before and five days after calving; such product contains not less than three per cent of milk fat and not less than 8.5 per cent of solids, not fat. Skim milk contains not less than 8.8 per cent solids and is that milk from which cream has been removed. Condensed milk is that from which a considerable portion of the water has been evaporated. The standard of purity is that prescribed by United States department of agriculture. Condensed skimmed milk contains 18 per cent of milk solids and tire grains of corn, wheat, rye, barley, is skimmed milk from which considerable portion of water has been evaporated. Cream is that portion of milk, rich in milk fat, skimmed or separated therefrom by centrifugal force, fresh and clean, containing not less than 18 per cent of milk fat. Evaporated cream is cream from which a considerable portion of water has been evaporated. Milk or butter fat has a Reichert Neisell number, not less than 24 and its specific gravity not less than 9.05 (40 degrees C.). Butter is the clean non-rancid product of the fat of fresh or ripened milk containing not less than 80 per cent milk fat. Cheese is the sound solid and ripened product made from milk or cream by coagulating the casein with rennet or lactic acid. Full milk or cream cheese must contain not less than 50 per cent milk fat. Half skimmed cheese must contain not less than 25 per cent and must be plainly marked. Buttermilk, ice cream, fruit ice cream, nut ice cream and iced milk are also defined. Pasteurization is defined as the process which consists of uniformly heating milk at a temperature of not less than 140 degrees Fahrenheit or not less than 25 minutes, and immediately thereafter cooling the same to a temperature not above 50 degrees Fahrenheit. Repasteurization is forbidden. All apparatus must be kept clean. No milk may be sold from which any part of the cream has been removed, unless plainly labelled as skimmed milk.

All persons engaged in the preparation of dairy products must comply with the following rules:

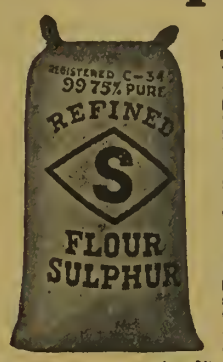
The name or identification mark of every producer shall appear in a conspicuous manner on or attached to every milk, cream bottle, can or container. All such cans, bottles and containers shall be thoroughly washed and sterilized after using. Every producer and private or common carrier of milk or the containers thereof must keep their vehicles clean and covered to protect the milk at all times from dust and the rays of the sun. All cans and containers should be handled carefully, right side up. Every vehicle for the transportation of milk shall be inclosed and provided with a canvas covering to protect the milk or cream from the sun or outside warm air, except while taking on or dicharging freight. No contaminating thing shall be carried on top of or in proximity of dairy products. No milk, cream or empty bottles or containers therefor shall be allowed in unclean vehicles or those used for hauling manure or garbage. All ingredients used in the process of making assembled dairy products must be produced under the same sanitary conditions and regulations as are required for the production of milk and cream. All such products must plainly state that they are assembled.

Brands for branding different grades of cheese are issued by the state dairy bureau, which is authorized to issue uniform brands consecutively numbered with different grades. No one other than the one to whom such brand is issued may use the same. Cheese is graded: (1) Such as is manufactured from whole pure milk having not less than 50 per cent butter fat, conspicuously branded as full cream cheese; (2) made from full milk having not less than 25 per cent butter fat, branded as half skimmed cheese; (3) made from full skimmed milk, branded as skimmed cheese.

The word person as used in the act is defined as including individuals, corporations, companies, societies and associations, and the act applies to every milk producer or handler, no matter how small, hotel keepers, restaurant keepers and boarding house keepers or anyone who serves meals and accepts money therefor. Failure to conform to provisions of the act is a misdemeanor punishable by fines of various amounts, or imprisonment for varying periods, or both.

The best cotton pickers at Blythe make more than $6 a day.

Sulphur



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy: the best for vineyards, the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100 per cent pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

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Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc.

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Rigid economy and the most modern methods of operation have made it possible for the Bell Company to keep its rates at a far lower level than that of the commodities which it must use in construction and upkeep. But it has felt the rising tide of costs just as certainly as has every business and every family.

The one source of revenue of the Bell Company is the price you pay for service. If this price fails to cover fair wages and necessary materials, then both you and your telephone company must suffer.

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made of Stifel Indigo Cloth are the most satisfactory garments for farm work. They wear, and wear and WEAR, and every washing makes them like new.
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Household Department

"CONSOLATION"

The red rust gets the wheat crop
And the hoppers eat the rye.
The bugs chew up the oat stalks
While you kiss them all good-bye.

A blight assails the barley
And the wire-worm bores the corn.
And there's nothing left to harvest
On the early autumn morn.

A rot feeds on the apples
The scab adorns the spud
And a pest attacks the melons
When they're nothing but a bud.

And then the days are gloomy
There will be no plenty now.
There's nothing left of harvest
But you've got the dairy cow.

And next you fall to thinking
Just a-planning things somehow
And you find you're mighty lucky
Just to have that spotted cow.

You think about the wheat bins
And the oat bins and the mow
And don't you feel like saying,
"My kingdom for a cow"?

It's nice to have the wheat fields,
When the wheat is worth two per
But when there's nothing on them
Isn't a cow what you prefer?
—R. D. Galt.

GOOD LOAF CAKE

By Cultivator Readers

IN "Household Queries" in the issue of September 20 a subscriber at Sierra Madre asked for recipes of good loaf cakes that would keep for several days, something suitable for lunch boxes. In reply we have a splendid lot of contributions from Cultivator readers:

Mrs. John Norton, Woodlake

In answer to the Cultivator's request for cake recipes am submitting a few which I know are reliable and which are within the reach of the average housewife.

White Loaf Cake. Two cups sugar, one cup butter, one cup sweet milk, whites of six eggs beaten stiff, three cups flour, two teaspoons baking powder, two teaspoons lemon extract.

Never Failing Cake. One and one-half cups sugar, one-half cup butter, one-half cup sweet milk, three whole eggs or yolks of six eggs, two heaping cups sifted flour, two teaspoons baking powder, one teaspoon of any flavoring.

Cheap Cake. One cup sugar, two-thirds cup butter or butter substitute, one egg, one cup milk, two and one-half cups sifted flour, two teaspoons baking powder, one teaspoon vanilla extract.

Any of the above recipes may be baked in layers and by using different fillings or different flavorings a number of delicious cakes may be made. Most housewives know the art of cake baking but for those who do not let me say that a loaf cake must be baked slowly and steadily and is done when it begins to leave the sides of the pan.

Mahogany Cake. Two cups sugar, three-fourths cup butter, two eggs, two-thirds cup ground chocolate dissolved in one-half cup hot water, one cup sour milk, one teaspoon soda, one teaspoon baking powder, one teaspoon vanilla, three cups flour.

Toast Cake. One cup sugar, two eggs, one and one-half tablespoons water, one and one-half teaspoons baking powder, one cup bread crumbs, one cup walnut meats. A small but delicious loaf cake.

Gingerbread. One-half cup sugar, one cup butter or butter substitute, two cups molasses, three eggs, four cups flour, one cup milk (buttermilk or sour milk preferred but sweet milk will do), one teaspoon soda, one tablespoon each ginger and cinnamon.

Cookies for the Lunch Box. One cup sugar, one cup sour cream, one teaspoon soda, one teaspoon flavoring extract, flour enough to make a dough to roll out; bake quickly.

Mrs. Helen W. Bullock, Redlands

Salvation Army Doughnuts. Two cups sugar, two eggs. Beat to a cream. One and three-quarters cups milk, one teaspoon salt, one tablespoon lard, one-half teaspoon cinnamon or nutmeg, five cups sifted flour. Roll thin. Makes four dozen.

Plain Cake or Cup Cakes. Put into measuring cup the sweet cream from one quart milk, fill cup scantily with new milk. Add two eggs, one cup sugar, one cup flour. Beat three minutes. Then add two teaspoons baking powder sifted three times through cup flour. Beat two minutes. Bake 40 minutes.

Governor Dix Ginger Cake. One cup molasses, one-half cup brown sugar, one-quarter teaspoon cloves, one-half tablespoon cinnamon, one-half tablespoon ginger, one tablespoon cocoa, three-quarters teaspoon vanilla. Add two teaspoons soda dissolved in one cup boiling water. Stir thoroughly. Add one-half cup cold water or coffee, three-quarters cup warm shortening, and flour until thick as molasses. Beat. Break in one egg. Beat all with egg beater. As many raisins as can be afforded. Bake in two 8-inch cake tins.

Soft Gingerbread. One cup sour milk and cream, one-half cup sugar, one-half cup dark honey or molasses, one egg, one teaspoon ginger, one teaspoon soda dissolved in three tablespoons hot water, one cup flour. Beat three minutes. Add one more cup flour. Beat two minutes. Bake 40 minutes.

Easton Subscriber

Devil's Food or "Poor Minister's Cake". Cream one-half cup Crisco and one cup brown sugar. Add two beaten eggs. Sift together one teaspoon baking powder, one teaspoon soda, one-half teaspoon salt and two cups flour. Dissolve three tablespoons chocolate in one-half cup hot water and add with one-half cup sour milk or buttermilk. Beat well and bake as loaf or layer. Vanilla flavor preferred.

Mrs. S. D. Bickford, Gardena

Seeing an inquiry for a good loaf cake I submit the following:

Hot Water Cake. Four eggs, two cups sugar (granulated), two cups flour, two teaspoons baking powder, one teaspoon vanilla. Beat eggs, add sugar and beat again; then the flour and lastly the hot water. Bake about 40 minutes in a moderate oven. Makes very thin batter.

Mrs. P. Pedersen, Lindsay

I read in your valuable paper that you wanted some good cape recipes to publish. This one I send you is a very good one and I hope you can use it in your household department, which is very interesting:

Potato Chocolate Cake: Very good cake may be made with potatoes. Recipe calls for one cup of hot mashed potatoes to two of flour. Mix the flour with potatoes and add three beaten eggs, two cups sugar, half cup milk, one cup chopped nuts, two and one-half teaspoons baking powder, two-thirds cup ground chocolate, two-thirds cup shortening, one teaspoon cinnamon and nutmeg and half a teaspoon of ground cloves and salt.

One good point of this cake is that it remains fresh a long time.

Mrs. W. J. Ferrell, Santa Barbara

In answer to Sierra Madre's request for a loaf cake that will keep moist for lunches would like to add this one:

Chocolate Loaf: One-fourth cup butter, one cup sugar, two heaping tablespoons chocolate melted in hot water, one and a half cups flour, one teaspoon vanilla, one-half teaspoon salt. Bake in loaf or will make two nice layers.

Mahogany Cake: One and a half cups sugar, one half cup butter or one-third cup Crisco, one-half cup sweet milk, two cups flour, two eggs beaten separate, two teaspoons soda in sweet milk; take one-half cup unsweetened chocolate, one-half cup sweet milk and cook until thick; cool and add to above. Bake in two layers, spreading cake mixture well out to edges of pan and leaving rather thin in middle as it has a tendency to raise rather thick in baking.

Chocolate Filling: One and a half tablespoons butter, one-half cup unsweetened chocolate, one-fourth cup milk, one and a fourth cups powdered sugar. Cream and boil four minutes. Cool and spread.

Hope some one will enjoy these as much as we do the other recipes found in the Cultivator.

Mrs. L. O. Bostwick, Harper

The following recipes are tried and true and may be of use to some reader

of the household department of the Cultivator:

One and a half cups sugar, two cups flour, two teaspoons baking powder. Sift these three to five times. Add to this one cup milk and butter the size of an egg (have butter hot). Beat thoroughly and add the beaten white of one egg. Beat well.

Molasses Layer Cake: One cup molasses, two tablespoons sugar, yolks of two eggs, one heaping teaspoon soda, two and a half cups flour, one teaspoon each of cloves and cinnamon, a little salt. Stir together and add one cup boiling water.

Filling for above cake: To the beaten whites of two eggs add seven tablespoons sugar and one cup chopped raisins. Cook raisins and sugar till thick, then beat them into the eggs.

Mrs. C. A. Butler, Berkeley

In reply to the party who would like a recipe for a plain loaf cake, am sending my two favorite recipes, one a light cake, the other a dark or spice cake.

Loaf Cake: One-fourth cup butter, one and a half cups sugar, two and a half cups flour, one cup sweet milk, two eggs, two teaspoons baking powder. Cream butter and sugar, add eggs well beaten, then mix and flavor with lemon. I make a change by adding vanilla or wintergreen, orange or any favorite flavoring at different times.

Spice Loaf Cake: One-third cup Crisco, one-half cup sugar, one-half cup molasses, two ounces chocolate, one cup sour milk, two cups flour, one-half teaspoon salt, one tablespoon ginger, one teaspoon cinnamon, one-fourth teaspoon cloves, one teaspoon soda, one teaspoon baking powder.

Cream Crisco and sugar, add molasses, then sour milk with the soda stirred in well. Add salt and spices, baking powder and chocolate to the flour, beat well. Bake in two loaf cake pans 45 minutes. This is good and keeps moist for days.

Ethel Williamson, Riverdale

Apple Cake: Peel and slice enough apples to make one pint and simmer in one scant cup of molasses with one heaping cup sugar, one scant cup shortening, one rounding teaspoon cinnamon and one-half teaspoon cloves. Simmer slowly until apples are quite dark, then cool until just warm; stir in one or two eggs, one and a half cups sour milk (water will do), one rounding teaspoon soda, a pinch of salt and enough flour to make a soft dough (like ginger cake). Stir in a few raisins, a teaspoon lemon extract, and make in a slow oven.

By adding more raisins, citron, etc., this recipe can be made into a very good fruit cake. It will keep indefinitely if put in a tin container with an apple.

Mrs. H. B.

I am sending a few cake recipes and hope others will get the satisfaction from them that I have. I like the Cultivator for its good advice in so many ways and hope we can always take it.

Eggless Fruit Cake: One cup sugar, one cup molasses, one cup sour milk, one-half cup shortening, one-half pound raisins, three cups flour, one teaspoon cinnamon, two teaspoons cloves, one and a half teaspoons soda, two teaspoons baking powder. When using lard or any shortening I add a little salt to make up for what is in butter.

Whole Wheat Brown Bread: One-half cup butter or lard, three-fourths cup raisins, one-half cup brown sugar, one-half cup molasses, one scant teaspoon salt, one pint sweet milk, two level teaspoons soda, three cups whole wheat flour, one cup white flour.

Old Fashioned Drop Cakes: One-half cup sugar, one-half cup molasses, one-half cup shortening, one-half cup hot water, two and a half cups flour, two eggs, one teaspoon lemon, one teaspoon ginger, one and a half teaspoons soda. Mix them and let stand an hour before baking. Then drop on greased tins and bake in a hot oven. Sometimes add nut meats or raisins.

Just a Cake: Two cups sugar, three eggs, one-half cup shortening, three cups flour, one cup sweet milk, one teaspoon lemon flavor, two teaspoons baking powder.

Any of these cakes will keep for days in a cloth or cake box.

Mrs. F., Reedley

Burnt Sugar Cake: Cream one-half cup butter, one and a half cups sugar, yolks two beaten eggs, one cup water, two cups flour; beat five minutes; three teaspoons caramel, one teaspoon vanilla, one-half cup flour, two teaspoons baking powder, whites two eggs.

To make caramel put one cup sugar in granite saucepan, stir over fire till it becomes liquid and smokes, add one-half cup water, boil till all is dissolved. Will keep indefinitely. Use for flavoring for caramel fillings, pies, cookies, etc.

Fruit Pudding: One cup sugar, one tablespoon shortening, one cup milk, two teaspoons baking powder, flour to make as stiff as for cake. Pour batter in buttered baking pan and pour over the batter the following: three cups fruit and juice (berries, cherries, dried fruit, etc.), one cup sugar, one cup hot water, butter size of an egg. Bake in moderate oven.

Subscriber, Riverside

Drop Cake: One cup sugar, one-half cup sweet milk, scant one-half cup butter or other shortening, one cup chopped raisins, one egg thoroughly beaten, one teaspoon soda in a little hot water, one teaspoon cinnamon, one-fourth teaspoon cloves, flour sufficient to drop from spoon. Beat thoroughly. Bake in muffin pans.

Coffee Cake: One-half cup molasses, one cup brown sugar, one-half cup cold coffee (strong), one-half cup shortening, little salt, one-half cup sour milk or buttermilk, one and a half teaspoons soda, one cup chopped seeded raisins, one-half teaspoon all kinds spices, one and a half cups sifted flour. Bake rather slow. This does not call for eggs but one beaten yolk and white separately improves the cake. Fine for lunches and should it become dry—which isn't likely in an average family — steam it, make a sauce and you have a fine dessert for dinner.

IN THE KITCHEN AND POULTRY YARD

By A. M. H.

There is nothing more useful in the kitchen than common baking soda. A bit of soda cooked with green vegetables will keep them a fresh color and make them more tender, and a very little soda put in acid fruits before the sugar is added will take less sugar to sweeten and will not injure the flavor of the fruit.

To scour knives and tinware easily mix a small quantity of soda with brick or fine ashes and they will polish well. Soda and ammonia rubbed on with a flannel cloth will keep the nickel of the stove bright and shining Try soda for removing grease spots from the kitchen floor. Moisten the soda and rub on the grease spots with a cloth.

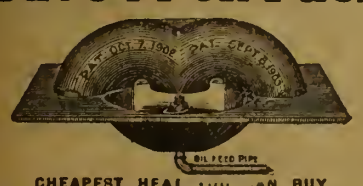
When dressing chickens singe them, then rub them all over with soda, wash in warm suds and rinse well. You will be surprised how quickly they are perfectly clean and free from pin feathers and down.

The best way to keep the refrigerator clean and in a sanitary condition is to wash every portion of it with hot suds with a little borax added; wipe over quickly with strong soda water boiling hot; then wipe out carefully and leave open to cool and air.

To keep roaches and large black ants out of the kitchen and pantry, wash floors and shelves with the hot suds made with the borax and soap, then mix well together equal parts of ground red pepper and powdered borax and sprinkle in all places where they are found and they will soon disappear.

Continued on Page 499

Save 1-2 on Fuel



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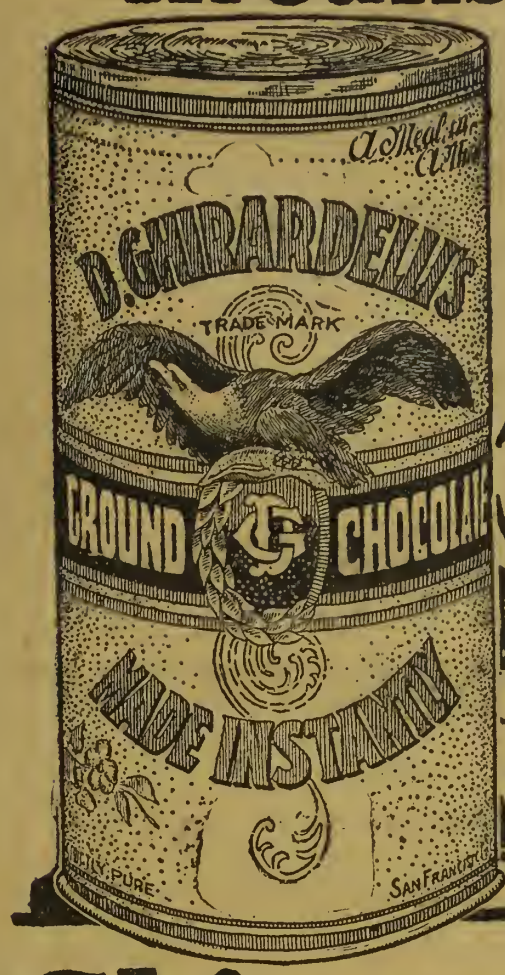

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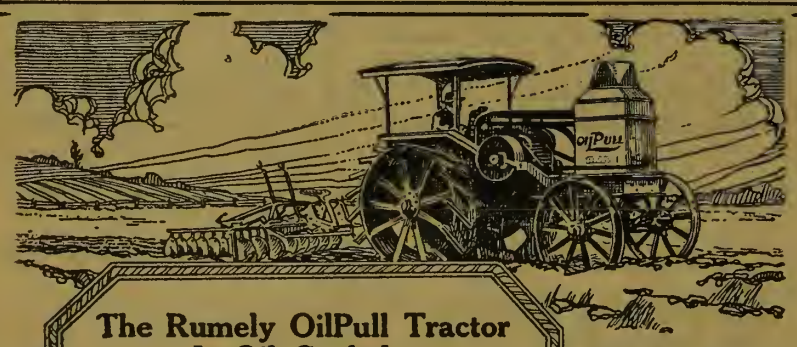

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LANCASTER, CALIF.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Los Angeles Markets

Los Angeles, October 8, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 66 lb.
chants in 1-lb. squares, 64@65.
Dairy Exchange prices last week on extras:

Oct.	1	2	3	4	6	7
'19 ...	68	68	68	68	67	66

CHEESE

Brokers' prices:
California, fresh, lb., 34; price to retail merchants, 34@36.

EGGS

Fresh extras, Produce Exchange closing price, 69 dozen; case count, Produce Exchange closing price 62 dozen; pullets, Produce Exchange closing price, 55 dozen.
Dairy Exchange prices last week on extras:

Oct.	1	2	3	4	6	7
'19 ...	69	69	69	69	69	69

POULTRY

Prices to producers: Hens, lt. 29, heavy, 29@32; colored over 4 lbs., 35; broilers, 40. fryers, 33; roasters, 31; old roosters, 19; capons, 42; ducks, old, 23; ducklings, 27; ducklings, Pekins, 3½ up, 29; geese, 25; turkeys, 32@40; squabs, 45.
Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:
Hogs (hard-grain fed) 125 to 150 lbs., 16.00; 150 to 225 lbs., 16.50.
Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.00; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.
Sheep: ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock October 7, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.
Potatoes: Demand and movement moderate, market weak. New stock, Stockton; Burbank, best 2.90@3.15; others 2.60@2.75 per cwt. Local: lug boxes 1.00.
Sweets, lb., 2½@3.
Onions: Demand and movement moderate. Home grown and Stockton: White Globes 90@1.00 per lug box; 2.85@3.00 per cwt. Yellow varieties, 3.00@3.25 per cwt; lug boxes 85@1.00.
Garlic: Local, per sack lots, 30.

VEGETABLES

These are the actual prics obtained October 7, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Beans: Green pods, lb., 7@10; Limas, 7@10.
Carrots, doz., 35@40.
Cauliflower: Local, per doz., 1.25; field crates, 1.75@2.00.
Cucumbers: Local stock, lug boxes 55@60; others, fair quality, 40@50. Shipping stock 85@1.00.
Celery: Local stock 1.10@1.25 per dozen bunches. Crates, 4.25@4.50; fancy shipping stock, 4.75@5.25.
Corn: Roasting ears, lug of 3 dozen, 80@1.00.
Eggplant, best, lb., 3@3½.
Peppers: Bell, 60@70 per lug box; others, 45@50; Chilis, best, 60@70; others, 45@55. Per lb., 4@5. Shipping stock, high as 1.00 per lug.
Lettuce, local, cr., 90@1.00; shipping 1.25@1.50.
Peas, local, lb., 12@13.
Rhubarb: Local, box, 1.00@1.35.
Squash: Summer, lug, 75@1.00; others, 60@70.
Tomatoes: Lug, ripe, 60@75; shipping, 85@1.15.
Turnips, doz., 30@50.

FRUITS

These are the actual prices obtained October 7, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms; Cash on the walk.
Apples, California: Bellefleurs, best packed, mostly 1.50@1.65; loose 4 lb. Local; Jonathans, scarce, packed mostly 2.75. Northern: Jonathans, fancy 3.00@3.20; extra fancy 3.25@3.50.
Bananas, 8@8½.
Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews, 85@90; Paul Rose, pack standard, 1.50@1.75.
Cranberries: Barrels, 13.25@13.50; boxes, mostly 4.00; 14 lb.
Grapes: Demand and movement moderate, market firm. Local and Northern stock: Per lb.: Tokays, 6@7; Muscats, 5@6; Malagas, 6@7; Hamburgers, 4@5; Concords, loose lugs, 8@10; Black Cornichons, mostly 6@7; Black Morocco, 4@5.
Nectarines, lb., best 5@7.
Peaches: Demand and movement slow. Local, various varieties, 5@6 lb.; others 4@5; lug boxes, best, 1.75@2.00; others, 1.00@1.50.
Pears: Northern Bartletts, No. 1, 7@9 lb.; No. 2, 5@6 lb.; lug boxes, 1.75@2.00; packed, 3.25@3.50.
Pineapples, lb., 12@13.
Plums: Hungarians, best, 5; Grand Dukes, 6 lb.
Pomegranates, lb., 8@9.
Quinces: Local lug, 1.25@1.50; lb. 5½@6.
3.65@4.00; best, 4.00@4.50; loose, 3.50@3.75.
Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1, small ½ lb.
Lemons: Valley stock: Fancy, packed, 6.50@6.75; loose, 5.50@5.75; local: packed, 3.65@4.00; best, 4.00@4 50; loose, 3 25@3.50. 4.75@5.50; best brands, 5.50@5.75; local pack, 2.50@3.00.
Oranges: Valencias, medium fancy 4.75@5.00; best brands, 5.75@6.00; local pack, 2.50@3.00.
Grapefruit: Local stock: Fancy, special brands 64s and 80s mostly, 6.00@6.50; 46s and 96s, 4.50@5.00; choice, 2.50 up. 2.50 up.

WALNUTS

Net prices have been named by California Walnut Growers' Association.
No. 1, 31½.
No. 2, 26.
Diamond Brand Buds, 34.
Golden State Buds, 34.
1918 No. 1 price was 28; fancy budded, 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14½; baby, 13.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat	19.00@21.00
Barley	16.00@21.00
Alfalfa	18.00@23.00
Wheat or Barley straw	9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, September 24:
Oats Red, Rustproof, 2.83¾.
Eastern Milo, 2.40@2.55.
Barley, 3.05@3.06¼.

San Francisco Markets

San Francisco, October 4, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, lb.:

Extras	66
Firsts	Nominal

Prices extras last week and year ago:

Sept.	30	Oct. 1	2	3	4	6
'19 ...	68	68	68½	68	66	66
'18 ...	65	65	67	68	..	..

Rcts. wk. ending Oct. 3, 2409 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	35
Ore. Triplets	33
Jack, full cream	25@27

EGGS

The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, dozen including cases:

Extras	75
Firsts	Nominal
Extra Pullets	61½
Undersized	52

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.
Prices extras last week and year ago:

Sept.	30	Oct.1	2	3	4	6
'18 ...	65½	66	66	66	..	..
'19 ...	79½	77½	78	78½	76	75
Sept.	30	Oct.1	2	3	4	6

Rcts. wk. ending Oct. 3, 257,790 dozen.

POULTRY

Hens, W. Leghorns, 26@30; colored, 34 @35; roosters, young, 34@35; old, 18@20; broilers, 32@33; fryers, 30@31; squabs, 2.50@4.00 dozen; ducks Indian Runner, 18@20; Pekin, 24@26; geese, 23@25; broiler turkeys, 38@40; turkeys old, 30@38. er turkeys, 38@40.
Belgian hares, live, 16@17; Jackrabbits. 1.50@3.00 dozen.

LIVE STOCK

Western Meat Company prices are:
Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.
Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4 @5.
Calves: Light weight, 12@12½; medium, 11@11½; heavy, 8@9.
Lambs: Yearlings, 10; milk, 12@12½.
Sheep: Wethers, 8½@9; ewes, 6½@7.
Hogs—Hard, grain-fed, 100 to 250 lbs., 16; do, 250 to 300 lbs., 15½ do, 300 to 400, 14½.
Moran @ Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:
Cattle—Good grass steers, 1000 to 1200 lbs. and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.
Hogs—Top packer hogs, hard and well finished, 175 to 250 lbs., 15; 150 to 175 lbs., 14; 250 to 300 lbs., 14; over 300 pounds, 15; under 150 lbs., 14. Usual dock and price discount for other weights and kinds.

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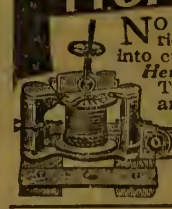

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Los Angeles

POTATOES

Potatoes: Per 100 lbs., River, choice 15; do, 250 to 300 lbs., 15½; do, 300 to 2.25; fancy 2.40@2.50ffi sweet, lb., 2½@3½.

ONIONS

Onions: Onions, fancy, Brown, 2.60; choice, 2.25@2.40; Reds, 2.25; Whites, 2.25; Garlic, 20@21.

VEGETABLES

Wholesale selling price:
Beans: String, 3@4; Limas, 4@5.
Carrots, per sack, 1.00@1.25; long, doz. 40@45.
Cauliflower, 75@80.
Cabbage, doz., 40@55.
Celery, doz., 30@35.
Cucumbers: Per box, 75; pickling, 6 per lb., No. 2 grade, 3 lb.; No. 3 grade, 1½.
Corn, sack, 1.50@2.50.
Eggplant, southern, fy., 50@75.
Lettuce [illegible]
Peppers, Bell, lb., 85@1.00; Chili, 40.
Peas, lb., 5@6½.
Pumpkins, per sack, 75.
Radish, 7@9 doz bunches.
Tomatoes: Sacramento River, 65@1.10; Bay, 60@1.00.
Spinach, lb., 2@3.
Squash: Summer, cr., 50@65; Italian, 50@75 box.

CITRUS

Wholesale selling price:
Per box: Lemons, fancy, 7.00@7.25; choice, 6.00@6.50; standards, 4.00@4.50; 5.00@6.00; choice, 4.00@5.00; oranges, 4.00@5.25.

FRESH FRUITS

Wholesale selling price:
Apples: Greenings, 1.50@2.00; Bellflowers, 1.50@1.75; Winter Bananas, $2.00@2.50; Newtown Pippins, 2.00@2.25; Jonathans, 2.00@2.50.
Bananas, 7½@8.
Blackberries: So., 10.00@12.00.
Cantaloupes; per crate, 2.00@2.80; pony crate, 1.50@2.25; flats, 50@60; Honey Dew and Casabas, lb., 1½.
Cranberries, 4.50@5.00 per standard box.
Figs, double layers: 1.00@1.25 box.
Grapes: Thompson Seedless, 1.50@2.00 per box; Malaga, 1.25@1.75, Los Angeles lug; Fontainbleus, 75@1.00 per crate; Rose Peru, 75@1.00; Muscats, 1.25@1.75; Tokays, 1.25@1.75.
Huckleberries, lb., 15@16.
Peaches: Sacramento 85@1.25 per crate, 1.25@2.00 per box; Cling, 1.25@2.00 per box; Elberta, 1.00@2.00, according to quality.
Pears: Box, 75@1.00.
Persimons, bx., 1.50@2.00.
Plums Cherry 50@1.00; Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00 @1.25.
Prunes: Fancy American blues, 2.50@3.00; choice, 1.00@1.80: according to size and weight
Pineapples, doz., 4.00@5.00.
Pomegranates, 75@2.00 box.
Quinces, bx., 1.00@1.50.
Raspberries: Ch., 13.00@15.00.
Strawberries: Ch., 14.00@16.00.
Watermelons: Watsons, lb., 1@1½.

HONEY

Demand improving slightly, market firm. Prices paid to producers: Extracted Light Amber Alfalfa, 14@15½; Light Amber Sage, 18½@19½.

BEANS, PEAS

Beans: Per cental: Small White, 8.00 @8.20; Large White, 7.00@7.25; Lima, 12.50@13.00; Pink, 7.00@7.25; Cranberry, 7.00@7.25; Blackeye, 6.00@6.50; California Bayos, 6.75@7.00; Mexican Red, 6.00@6:50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 6.25@6.50. in bond.
Dried Peas: Old crop, green, lb., 7½@7¾.

HOPS

1919 contracts per lb. around 60@70.

RICE

Prices per 100 lb. bag:
California: Fy., 10.50; ch., 10.25; flour, 5.25.

DRIED FRUITS

Prunes:
Prune prices announced by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.
Peaches:
Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1, 1920, are as follows:
Standard yellows, 14¾c; Muirs, 15c.
Choice yellows, 15½c; Muirs, 15½c.
Fancy yellows, 16½c; Muirs, 17½c.
Extra fancy yellows, 17¾c; Muirs, 18¾c.
Slabs, yellows, 14½c.
For "practically peeled" add 1½c per pound (any grade).
Prices above are all bulk basis.
For packing in 50-pound or 25 kilo boxes add 1 cent per pound.
25-pound or 12½ kilo boxes, add 1¼c per pound.
10-pound boxes, add 2c per pound.
Blue ribbon peaches packed 2-pound carons, 12 per case, $10 per case.
Blue ribbon peaches packed 2-pound cartons, 24 per case, $10 per case.
Bakers' special, "practically peeled," 16¾c per pound, bulk basis.
Apples:
Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; Fancy (in 50s), 23@23½.
Figs:
White: Cooking (in 50s), 15@16; choice (in 50s) 17@18, extra choice (in 50s) 19@20, fancy (in 50s) 21@22, extra fancy (in 50s) 23@24, Bricks, 12 No. 10s, 1.60@1.67½; bricks, 24 No. 8s 2.55@2.65, bricks 50 No. 6s 4.00@4.15, bricks, 70 No. 4s 4.20@4.35, layers, No. 10 2.50@2.80. Calimyrna: Cooking (in 50s) 19, choice (in 50s) 23, extra choice (in 50s) 24, fancy (in 50s) 26, extra fancy (in 50s) 27½, bricks, 10 1-lb. 2.75, layers, No. 10 2.95@3.20. Black: Standard 14, choice 17@18, extra choice 18@19, fancy 19@20.
Pears:
Standard 20, choice 22½, extra choice 24, fancy 26@27.
Raisins:
California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package 15, fancy, 16s, package 15, fancy, 12s, package 11¾, choice, 16s, package 14½, choice, 12s, package 11⅜, bulk, fancy in 25s 14¼, bulk, bakers, in 25s, 13½, bulk, Maiagas and Feherzagos, in 25s 13. Loose Muscatels: 4-crown, in 25s 14¼, 3-crown, in 25s 13¾, 2-crown, in 25s, 13¼, 1-crown, recleaned, in 25s 14. Seedless: Thompsons, 16s 15½, Thompsons, 12s 12⅛, Thompsons, bulk, recleaned, in 25s 14½, Thompsons, bulk, bakers, in 25s 15½. Bleached Thompsons: Choice, in 25s, sulfur 18, Fancy, in 25s, sulfur 18½, Extra Fancy, in 25s, sulfur 21, soda dipped, in 25s 17¾, oil dipped, in 25s 17¾. Sultanas, 16s 15¼. Sultanas, bulk, in 25s 14¼. Layers: 6-crown, flat pack, 20s, per box 4.05, 6-crown, flat, 10s, per box 2.20, 6-crown, flat pack, 5s, per box 1.20, 4-crown, flat pack, 20s, per box 3.20, 4-crown, flat pack, 10s, per box 1.75, 4-crown, flat pack, 5s, per box 1.00, 3-crown, tray pack, 20s, per box 3.10, 3-crown, flat pack, 20s, per box 2.95, 3-crown, flat pack, 10s, per box 1.60, 3-crown, flat pack, 5s, per box 95, clusters, 20-1s, cartons 3.45, clusters, 12-2s, cartons 3.80, clusters, 4-5s, cartons 4.50, vineyard run, 100s 13.00.

ALMONDS

California Almond Growers Exchange opening prices:
Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

GRAIN AND FEEDS

Oats: Red feed, 2.75@2.85; black. 3.00 @3.10 per cental
Corn: California yellow, 3.50@3.60 cwt., Egyptian 3.15@3.25; Milo Maize, 2.85@2.95.
Rye, 3.25@3.35.
Barley, feed, 2.90@2.95; brewing, 3.15 @3.20.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	2.20	3.66 2-3
No 2	2.17	3.61 2-3
No 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No 2	2.15	3.58 1-3
No. 3	2.11	3.51 1-3
Club and Sonora—		
No 1	2.16	3.60
No 2	2.13	3.55
No. 3	2.09	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags Wheat grading under No 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran 43.00@44.00 mill run, 42.00@43.00: Rolled barley 52.00 @54.00 Linseed oil cake meal, nominal: cocoanut cake or meal, 41.00@42.00 per ton.

HAY

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the Hay Market—for prices to consumer, charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay	
(light 5-wire bales)	17.50@19.00
No. 1 Wheat or Wheat and Oat Hay	15.00@18.00
No. 2 Wheat or Wheat and Oat Hay	12.00@15.00
Choice Tame Oat Hay	15.00@18.00
Other Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@14.00
Barley Hay	12.00@16.00
Alfalfa Hay	17.00@22.00
Stock Hay	8.00@12.00
No. 1 Barley Straw, bale	.50@80

Citrus Markets

Los Angeles, October 8, 1919.

The Valencia market is in an exceptionally satisfactory condition, $5 f. o. b. price prevailing. Some auction sales around $8 and $9 are common for good stock. The rain of last week held back picking for a time but packing houses were full so that there was scarcely any slacking of outgoing cars. Car shortage has lessened somewhat and between 400 and 500 cars weekly are now going out.

Lemons are in special favor and some exceptional prices are being received. Eastern prices are running usually between $7 and $8 but some auction sales have been made above $10.

Shipment

Shipments of citrus fruits to date since November 1, 1918: Southern California: Oranges, 33,110 cars, lemons, 9.30, total 42,419. To same date last season; oranges, 14,007, lemons 5,650, total 19.657. Central California this season: Oranges, 4,427, lemons 354, total 4,781. To same date last season: oranges, 2,539, lemons 115, total 2,654. Northern California: oranges 244, lemons 2, total 246. Last year same date: oranges 203.

TEHAMA COUNTY FARM BUREAU

The regular meetings of the Tehama County farm bureau will be held as follows during the month of October: Oak Park, 10; Richfield, 13; Antelope, 14; Corning, 15; Bend, 17; Los Molinos, 27; Proberta, 29.

There will be a meeting of the board of directors on Friday, October 17, at 1:30. This meeting will be for the purpose of electing a delegate to the State Federation of Farm Bureaus, which will meet at Berkeley on Wednesday, October 22.

GLENN COUNTY FARM BUREAU

October meetings will be held at Jacinto, 10; Codora, 13; Capay, 15; Plaza, 17; Willows, 20; Elk Creek, 22, 2 p. m.; Grapevine, 22, 8 p. m.; Larkin, 24.

The fall conference of farm advisers will be held at Berkeley October 20-25. The farm adviser will not attend meetings in the county between these dates since he will be in attendance at conference.

KITCHEN AND POULTRY YARD

Continued from Page 497

A good way to use all the broken china dishes is to crush the pieces fine, then mix the grit with wheat bran and feed the hens the mixture every evening. This makes the gizzards firm and covered with fat and the hens lay more eggs when fed in this way. When fowls of any kind have sore eyes there is no better remedy to use than warm borax water rubbed into the eyes with a feather. Two or three applications will cure all fowls not too badly affected. This simple remedy was tried after many others had failed and with splendid success; and it is good for young and old fowls of all kinds. Lime is cheap and when dusted plentifully over the premises occupied by chickens about once a week will prove highly beeficial.

1919 AGRICULTURAL CROPS

The last government estimate for 1919 crops in California gives the following figures: Corn, 2,888,000 bushels; oats, 5,576,000; barley, 31,000,000; potatoes, 11,686,000; sweet potatoes, 924,000; rice, 8,750,000; alfalfa, 4,431,000 tons.

NORWALK TIRES

give longest service on country roads. Try one and watch your mileage grow.

FACTORY DISTRIBUTORS:
Lichtenberger-Ferguson Co.
Los Angeles San Francisco Fresno

Announcing
Western Berkshire Congress
—SALE OF—
30 Bred Gilts and Sows 30
at Los Angeles Live Stock Show
Wednesday, October 22nd at 1:30 P.M.

This sale will be made up of selections from the best herds in the West, including a number of sows from show herds.

A. B. Humphrey, Pres. Escalon, Calif.
Frank B. Anderson, Secy. Box 724, Sacramento, Calif.

Col. Ord L. Leachman, Auctioneer

A post card to the secretary will bring a catalog.

Will You Plant This Year?

Have this work done by men who have had years of experience in this line and know how to get results.
Blasting done if necessary.
We guarantee 97 per cent of the trees that we plant will grow.
Large and small jobs taken.
We take care of large orchards after they are planted.
Write for prices.

Arrowhead Orchards P.O. Box 642, Sacramento, Calif.

GLOBE "A1" FEEDS
—Judge them on Business Principles!
FEED FOR SWINE, STOCK AND POULTRY
ASK YOUR DEALER

No birds get through *his* shot patterns

THE successful sportsman knows that his bag depends almost as much upon the shot pattern, or evenness with which the shot spreads out and covers the game, as it does upon his gun handling.

The secret of uniform game-getting patterns is in the control of the gas blast from the exploding powder. This in turn depends upon the *wadding* in the shell.

The Winchester gas control system

The Winchester system of wadding and loading is the result of repeated experiments to determine the most effective control of the gas blast.

The base wads of Winchester Shells are constructed to give what is known as progressive combustion to the powder charge. The ignition spreads to the sides, in all directions, as well as forward.

Under the heat and pressure of this progressive combustion the tough, springy driving wad expands and fills the bore snugly, completely sealing in the gas behind. In being driven through the bore this wad offers just enough resistance to the gas blast to insure complete combustion of every grain of powder, so that the full energy of the whole powder charge is developed at the muzzle. Thus none of the shot charge leaves the gun until it is being driven by the maximum energy and velocity possible from the load.

At the muzzle, the expanded, snug-fitting driving wad is slightly checked by the muzzle choke or constriction, while the shot cluster travels on unbroken by gas blast or wadding, making the hard-hitting uniform pattern for which Winchester Shells are world-famous.

A patchy pattern often means a miss, many times a cripple, and sometimes badly mutilated game.

The hard-hitting Winchester pattern is evenly distributed. No game gets through, and no game is mutilated.

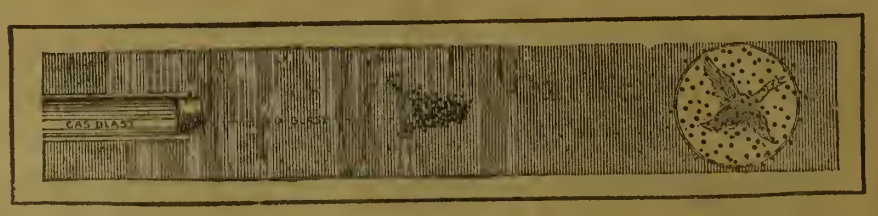
Uniform shells. From primer to crimp Winchester Shells are so balanced in construction as to insure the maximum pattern possible from any load. The broad fish-tail flash from the primer gives even and thorough ignition; the driving wads completely seal in the gas behind the shot; the stiffness of the crimp or turnover at the shell head is varied exactly according to different loads, great care being taken never to stiffen it to such a degree that it offers undue resistance to the powder explosion.

In addition Winchester Shells are, of course, thoroughly waterproof, insuring true shooting in damp saturating salt air or drenching rains. A special lubrication of the paper fibre prevents brittleness and splitting in dry weather.

Clean hits and more of them

To insure more hits and cleaner hits in the field or at the traps be sure your shells are Winchester Leader and Repeater for smokeless, Nublack and New Rival for black powder. Leading hardware and sporting goods dealers in every community carry Winchester arms and ammunition. They will be glad to assist you in determining the particular load best suited to your purpose. Upon request, we will send you, free of charge, our interesting booklet on Winchester Shotguns and Loaded Shells.

Winchester Repeating Arms Co., Dept 207, New Haven, Conn. U. S. A.



The Winchester system of wadding. The wadding expands evenly, sealing in the gas blast all the way to the muzzle, where the wadding is checked by the "choke" or constriction. The shot cluster travels on ahead unbroken. Actual test target 370 pellets out of 421 or ... of the shot charge (1¼ oz. of 7½ chilled) inside a 30-inch circle at 40 yards.

WINCHESTER

World Standard Guns and Ammunition

C A

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

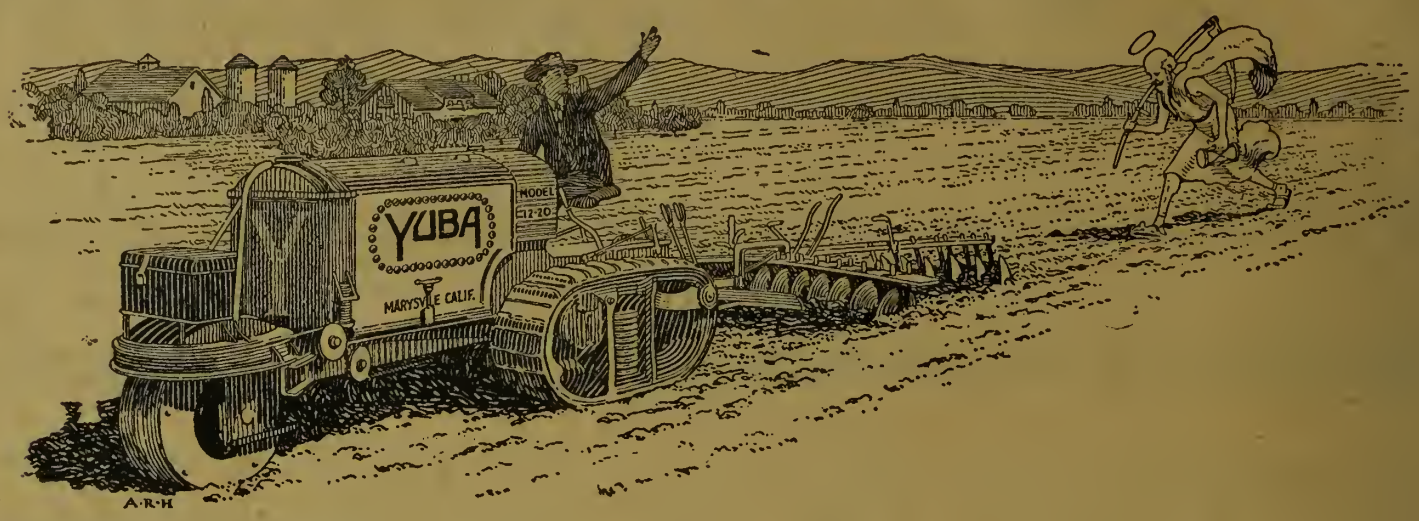
Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — October 18, 1919 — No. 16

California Will Produce This Year 7,500,000 Bushels of Rice

The field for rice production is being extended with even greater rapidity than that for cotton. The production started in a large way in the northern end of the Sacramento Valley. It was later taken up in the southern end, then in the San Joaquin, then in the Imperial Valley, and now rice threshers are humming almost in the outskirts of the city of Los Angeles. The scene above is from one of the rich fields of Yolo County.

Time has no terror for the owner of a Yuba



HE is confident of his ability to do his work well, quickly, and in proper season by reason of his knowledge of its long record of reliable performance.

HE is insured from the haunting dread of a breakdown at a time when minutes cost dollars by the high quality and superior strength of its working parts.

HE knows from experience and observation that he will continue to use his YUBA year after year, as a workman uses a fine tool—that a moderate annual outlay for repairs on wearing parts will restore its efficiency to par.

HE is certain that *time* will prove the economy of his investment in his YUBA tractor.

Ready for Immediate Delivery
There are two sizes of YUBA Ball Tread Tractors:

12-20 - 20-35

Write us for the catalogue of the size you need; tell us how many acres you farm, and the kind of soil.

Address:

Yuba Manufacturing Company

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A. F. GEORGE COMPANY, YUBA DEALER

200 N. LOS ANGELES STREET, LOS ANGELES, CAL.

California Cultivator

Vol. LIII, No. 16 — Los Angeles, October 18, 1919 — One Dollar Yearly

The Los Angeles Live Stock Show

FROM the time of the opening of the state fair late in August to the Southern California fair which closed in Riverside last Saturday there have been made many remarks in effect that California's advancement in the production of pure bred live stock has been most astonishing. To be sure, the breeding of thoroughbreds was established in California many years ago and gave a wonderful impetus in this direction, though this was largely taken up by the sporting people. Other types of pure breds have been maintained in California, and to its material advancement, but only within the last eight or ten years has this growth been marked.

At the state fair judges and others who for years attended exhibitions in other states, or possibly all states of the Union, remarked on the magnificent showing made by Pacific Coast breeders. And this showing was not brought about by offering great prizes, for there were no abnormally large premiums awarded even at the state fair, and in spite of the much smaller premium lists of the district and county fairs great strings of pure breds were exhibited. We heard it remarked at the Riverside fair that in one particular class of pure breds there was a showing even superior to that made at Sacramento.

Now comes the Los Angeles live stock show and later the one at San Francisco, which will be held November 1-8, and the same week that at Phoenix.

These great expositions are gratifying to all who have pride in California, and they are proving most educational, not only because of the exhibits but because of the sales which bring together large numbers of buyers and others who note the estimates of value placed upon these pure bred animals which have outstanding quality.

The Los Angeles show opens October 18 with every stall and every inch of available space occupied. Manager Thomas informs us that he has had a force of carpenters busy constructing new sheds and barns, and these have filled practically all the available space on the grounds at Exposition Park.

Below is given an outline of the judging and other features of the program for the guidance of those who may wish to avail themselves of the opportunity of getting greatest good from this exposition. Modern day judges have formed the habit of giving freely of their experience, and it is now considered entirely proper for the owner of an animal to ask why it has been placed first or last, as the case may be. The judges freely give their reasons for the belief that is in them, and this is proving one of the most attractive features at the state and other fairs. We doubt not this plan will be followed at the Los Angeles show and explanation made as to the reasons for placing the ribbons.

One feature which will also prove educational is the admitting of boys' and girls' agricultural school clubs. A number will attend from the high schools of Los Angeles and surrounding smaller towns. These club members will usually attend in a body and will not only watch the judging by the professionals but will themselves engage in judging contests.

The program for the week is:

PROGRAM LOS ANGELES LIVE STOCK SHOW

Saturday, October 18, 1 P. M. Weighing live stock. Band concert in afternoon.

Monday, 9 A. M. Judging poultry. Judging Aberdeen-Angus. Judging Holsteins. Judging Durocs and judging sheep. 1 P. M. Judging Shorthorns. 1.30 P. M. Horse show in front of grandstand, races, band concert.

Tuesday, 9 A. M. Judging Shorthorns, draft horses, Hampshires, poultry and Jerseys. 1 P. M. Judging Herefords, car lots of cattle and swine and Berkshires. 1.30 P. M. Horse show in front of grandstand, races, band concert.

Wednesday, 9 A. M. Judging Herefords, Berkshires, Guernsey cattle. draft horses, Poland-Chinas. 10 A. M. Zone 5, California Cattlemens Convention in Administration Building. 1 P. M. Judging steers, jacks and ponies, goats. 1.30 P. M. Sale of Berkshires. Horse show in front of grandstand, races, band concert.

Thursday, 9 A. M. Judging Ayrshires, rabbits, pigeons and cavies. 9.30 A. M. Farm Bureau Dairymens Convention in Administration Building. 1.30 P. M. Judging Dutch Belted cattle, horse show in front of grandstand, races, band concert. 2.00 P. M. Farm Bureau Dairymen's cow judging demonstration.

Friday, 9 A. M. Judging unfinished classes. 11 A. M. Judging draft teams. 1 P. M. Grand march of live stock, including all prize winners. 1.30 P. M. Horse show in front of grandstand, races, band concert.

Saturday, 9 A. M. Dog show, judging rabbits and cavies. 1.30 P. M. Horse show in front of grandstand, races, band concert.

Sunday, 1 P. M. All animals on exhibition, dog show. 1.30 P. M. Band concert.

We have asked Manager C. R. Thomas to answer in a few words as to why or wherein is the value of live stock shows.

WHY IS A LIVE STOCK SHOW?

By C. R. Thomas, Manager Los Angeles Live Stock Show

I HAVE been asked the question a good many times, "What are the especial benefits to be derived from a live stock show?" There are so many benefits to be derived from a live stock show that it is a little difficult to know where to begin to answer the question.

In the first place, the best animals of the various breeds of live stock are brought to a show, thus giving the breeders an opportunity to compare their own breeding with that of other breeders. Oftentimes a man stays so closely at home and becomes so wedded to his own animals that he does not know what his neighbors are doing and what kind of animals they are breeding, and sometimes he thinks that he has the best animals in the country and is so satisfied with them that he cares nothing about what others are doing.

But when this man comes to a live stock show, he very often goes home much wiser than he came—at least, if he is a good judge of live stock. As an illustration, I will relate a little circumstance that happened at the American Royal Livestock Show in Kansas City about 16 years ago. A young man from Ohio entered a calf, and every three or four days I received a letter from him stating what a wonderful animal he had and how he could easily win in his class. There were about 40 entries in the class his calf was eligible to compete in. One rule of the show was that no one could be excused from showing his animals without a reasonable excuse once they arrived at the show grounds, the same to be determined by the manager. The morning the calf was to have been shown the owner came to me with a long face asking to be excused from leading his calf into the ring. I asked him what excuse he had to offer. I knew the reason that he did not want to show and could hardly suppress a smile; but I wanted to know what he had to say. His answer to my question was that the calf had got loose the night before and got very much excited and had run all over the barn. I told him I supposed that was a good enough excuse and told him he did not have to lead his calf into the ring. After I told him this he smiled and said, "Mr. Thomas, I'm going to tell you the truth; my calf isn't good enough to show against the others here."

Did that young man go home discouraged? No; he went home with a determination to get something better than he had ever had before, and to start breeding along the right lines, and he was afterwards heard from. So it is with a great many people; they don't know until they see assembled the best that there is to be had, and then they can draw true comparisons.

A live stock show also creates a market for the breeders who exhibit there. The blood of champion and prize-winning animals is always sought by ambitious breeders.

A big live stock show also is a benefit not only to the breeders but the people at large, for the reason that it gives the breeders an opportunity to exchange ideas which are always valuable. Different methods of feeding are discussed, the kind and quantity of feed to be used, etc. It brings the breeders more closely together and thus engenders a fellowship and good feeling that is beneficial.

Much can be said in the papers and by correspondence, but no man can describe an animal just as it looks.

A live stock show not only benefits often the breeders themselves and the spectators, but it is a benefit to the community in which it is held. The merchants, the manufacturers, the hotel proprietors and other interests in a city where a live stock show is held will tell you that it brings a better class of people to the city than does almost any other attraction — a class of people which usually sets apart one week in the year to attend the show, at which time they take their families with them, the women to do their shopping while the men examine the live stock. And in all of the large cities where big shows are held annually the merchants look forward to these shows and encourage them to the utmost, knowing the benefits that they annually receive.

The live stock and allied interests of the United States are about 16 million dollars greater than the combined value of all the railroads of the United States, with the watered stock included, and the quality of the live stock is getting better each year; and it is to a large extent the live stock shows which are responsible for the improvement.

Branching off a little from the benefits of the show, I will state that the agricultural returns from Los Angeles County are the greatest of any county in the United States. Of course, it is the productive quality of the sire that is responsible for these returns, but in order to hold the record this county has established it becomes necessary to keep the soil well fertilized. And everybody knows that the best fertilizer in the world is barnyard manure.

A live stock section is always a rich section.

The judges are:

Dairy Cattle

Holstein-Friesian: John B. Erwin, Minneapolis, Minnesota. Other dairy breeds: Ed. Carey, Carlton, Oregon.

Beef Breeds

Shorthorns and Aberdeen-Angus: Frank Brown, Carlton, Oregon. Herefords: Wallace Good, Kansas City, Missouri.

Hogs

Duroc-Jerseys and Berkshires: E. J. Barker, Thorntown, Indiana. Poland-Chinas and Hampshires: C. R. Doty, Charlestown, Oregon.

Continued on Page 521

WIRE FROM DEAN H. E. VAN NORMAN AT NATIONAL DAIRY SHOW, CHICAGO

"Hurrah for California. First on certified milk goes to University of California. First on market milk and market cream to Elliott-Brant, whose cream scored 100, first time this high score ever given at National Dairy Show. On City House Department Exhibit Los Angeles gets first. The Pacific Coast gets six out of nine firsts in milk and cream classes. Dupee of Santee won grand champion on Guernsey bull."

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to live stock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member — Eastern Offices:
Tom D. Costello, Steger Building, Chicago, Ill.
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C. A. Cour, Globe Bldg., St. Louis, Mo.

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Saturday, Oct. 18, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

One feature of California's rice growing industry is shown on the cover of this issue. In a few years it has increased from the experimental stage to an equal importance with wheat growing. The value of the industry to the state this year will be in excess of $15,000,000.

100 PER CENT MILK

Note the honors thrust upon California and chronicled in the copy of telegram from Dean Van Norman on Page 503. One California dairy has shipped sweet cream across the continent, which two weeks after its production scored 100. "The first time this high score was ever given at National Dairy Show." This cream was produced on the Elliott-Brant Rancho, Owensmouth.

SUCCESSFUL FAIR

President John L. Bishop, Secretary Van Pelt and the entire board of directors of the Southern California Fair Association, which closed a successful five day fair at Riverside last Saturday night, have reason to be highly gratified at the results of this year's exhibition. The association is only some half dozen years old and the first fairs which were held out on Magnolia Avenue were a remarkable contrast to that just closed. The general agricultural exhibit, including the fruits, was a great advance over all preceding fairs, but the most marked advance of all was in the showing of live stock. It demands material extension of the grounds before another show can be held.

LOAD AND UNLOAD

The railroad administration is calling attention to the delay in unloading of products. Much more time than normally is required to transport produce from the Pacific Coast to the East because of congestion, then greater time in unloading calls for nearly doubling the time the car takes in making the round trip. The worst of it is that the car shortage is causing the producer the greatest loss. We call attention to the situation at Lodi where hundreds of cars of grapes were held until the best of the season passed simply because of inability to secure enough refrigerator cars.

The producer can expedite matters at this end by holding the cars in loading as short a time as possible. Still more, Eastern distributing points can aid, for it has been determined by the administration that cars are held in Chicago an average of 4.37 days, while figures on 36 cars at Denver show an average delay in unloading of 6.36 days.

Load and unload quickly.

THE SILLY SEASON

Since the silly season is an open season we direct attention to a plan that is the result of a great burst of intelligence on the part of a Sacramento city official, to wit: A state wide boycott with the announced purpose of bringing down price of eggs and butter is to be organized among the housewives of the state. We forget just how far the price of the above named products is to fall—something like 35 cents for eggs and 40 cents for butter seems to be about right to the worthy official.

We wish him well, this modern Don Quixote, but before he starts out on his program we respectfully refer him to a careful study of the success that attended the original "Don" who sallied forth to do battle with the windmills, and in an effort to arm him well for the fray that he is about to engage in we would like to point out that the prices of butter and eggs are not local matters. The price of eggs is a national and the price of butter an international proposition. But it is hardly probable that this information would deter so dauntless an official accustomed to wrestling with the weighty problems of a municipality. Anyway, he is getting a deal of free publicity—a commodity not held in disdain by those holding office at the hands of the public.

In the meantime our advice to our readers is that they keep on milking the cows and gathering the eggs.

RICHES ACROSS THE BAR

What is to become of the riches which formerly passed over J. Barleycorn's bar? This question gives opportunity for a discussion in "Nation's Business." The confectioners at first claimed that the sale of sweets would be vastly increased because of the fact that sugars are valuable in satisfying the craving for alcohol. The soft drink people, again felt these riches would be theirs. After preliminary research investigators have found that the moneys which were formerly spent over liquor bars will go into other channels in about the order given below. First, the savings banks will be the greatest beneficiary. After the banks come soft drinks and ice cream; third, the movies; fourth, candy, and finally, tobacco.

THE LOS ANGELES LIVESTOCK SHOW

Today the gates open at the Los Angeles Livestock Show, and the event can, and should, be regarded as one of utmost importance to the future of California live stock development, and, indeed, the future welfare of the agricultural and horticultural resources of the state in general and Southern California in particular.

Notwithstanding the fact that Southern California has always maintained an extensive live stock industry, it has been but comparatively recently that serious attention has been accorded the production of pure breds. The marked advance registered the past few years suggests the possibilities in this direction and justifies the prediction that some day—not distant—Southern California will boast of owning many of the best herds and flocks of the Pacific Coast.

The science of modern agriculture has demonstrated no fact with greater certainty than that successful agriculture is based on animal husbandry. And if there be those who doubt this great truth they are certain to have it impressed upon them sooner or later. Rather than wait for this fact to be made plain the lesson learned by older countries should be taken to heart and farming operations ordered accordingly.

Just as science has proven that live stock husbandry is fundamental to a successful agriculture, so has science demonstrated that pure bred and high grade live stock is infinitely more profitable than that of little or no breeding. On our high priced lands of the South only efficient live stock should have a place, and the Los Angeles Livestock Show was designed and promoted in the hope that it would hold out an inspiration to all and develop an appreciation of the part that live stock must play if we are to build a satisfactory and profitable agriculture.

This new institution deserves, and doubtless will be accorded, the hearty support of the territory it is planned to serve. The permanency of the show as an annual affair will depend on the support tendered the initial event, and we venture to predict that the 1919 Los Angeles Livestock Show is but the forerunner of a long series of shows that will bring to expression the degree of live stock consciousness so long looked forward to by those who believe in the greatness of California.

ENTRIES AT CALIFORNIA INTERNATIONAL

Gordon H. True, manager of the California International Live Stock Show, which will be held in the California Building at San Francisco, November 1 to 8, announces that close to 1,000 head of cattle, horses, swine and sheep have been entered and that telegraphic reservations have been made by exhibitors who were not able to get the entries in on closing date. Thomas Mangan, superintendent of the horse show, says that close to 200 head of horses will be entered in this department. The entries for poultry, pigeons and rabbits do not close until October 20. Carlot entries for fat stock close October 18.

Manager Gordon H. True is now trying to crowd the quarters so that he will have sufficient stall and pen space in the big California Building. More than 250 horses will be entered in the night horse show classes, and it is feared that some stock will have to be quartered outside of the building.

The partial list of entries is announced as follows:

Shorthorn Cattle: Henry M. Elberg, Woodland; Ormondale Company, Redwood City; Fair Oaks Ranch, Willits; Alexander and Kellogg, Suisun; Pacheco Cattle Company, Hollister; Leon F. Douglass, San Rafael; Wm. A. Bond, Newark; T. S. Glide, Davis; Thos. Harrison, Santa Rosa; Estate of Thos. B. Dibblee, Lompoc; Thos. T. Miller, Hollister; H. L. & E. H. Murphy, Perkins; University of California, Davis; Caledonia Stock Farm, San Francisco.

Hereford Cattle: J. A. Bunting, Mission San Jose; Harold Rice, Paia, Maui, Hawaii; University of California, Davis; H. M. Barngrover, Santa Clara; W. J. Bemmerly, Woodland; Hereford Corporation of Wyoming, Cheyenne, Wyoming; H. H. Gable, Esparto; Will Henn, Kansas City, Missouri.

Aberdeen Angus Cattle: University of California, Davis; Congdon and Battles, Yakima, Washington.

Holstein Cattle: Frank B. Anderson, Sacramento; Frank Reed Sanders, Phoenix, Arizona; University of California, Davis; A. W. Morris & Sons, Woodland; Henderson Company, Sacramento; R. L. Holmes, Modesto; Napa State Hospital, Napa; Palo Alto Stock Farm, Palo Alto; Toyon Farms, Los Altos.

Jersey Cattle: L. J. Belknap, San Jose; University of California, Davis; Guy H. Miller, Modesto; J. A. Goodall, Keyes; W. J. Hackett, Ceres; M. Fortini, Orland; Frank Reed Sanders, Phoenix, Arizona.

Guernsey Cattle: A. B. Humphrey, Escalon; L. D. Smith, Berkeley.

Ayrshire Cattle: University of California, Davis; J. Henry Meyers, San Francisco; E. B. McFarland, San Mateo.

Dutch Belted Cattle: Frank Reed Sanders, Phoenix, Arizona.

Rambouillet Sheep: University of California, Davis; Bullard Bros., Woodland.

Shropshire Sheep: Butte City Ranch, Butte City; University of California, Davis; J. M. R. Boyd, St. Helena; Vaughan & Fox, Lyons, Oregon.

Hampshire Sheep: Caila Grove Farm, Manteca; University of California, Davis.

Southdown Sheep: University of California, Davis.

Romney Sheep: Coffin Bros., Yakima, Washington; University of California, Davis.

Corriedale Sheep: Ellenwood & Ramsay, Red Bluff; Coffin Bros., Yakima, Washington.

Lincoln Sheep: Coffin Bros., Yakima, Washington.

Berkshire Swine: A. L. Stephenson, Los Molinos; Mrs. John J. Weeks, Yuba City; Frank B. Anderson, Sacramento; Castleview Ranch, Santa Rosa; A. B. Humphrey, Escalon; University of California, Davis; W. F. Sandercock, Sacramento; Anchorage Farm, Orland; Walter E. Graham, Del Paso Heights.

Duroc-Jersey Swine: L. J. Belknap, Jersey Queen Farm, Santa Clara; University of California, Davis; J. H. Rosseter, Burke; Conejo Ranch, Newbury Park; F. M. Johnson, Napa; S. E. Whiting, Sacramento; Harvey Berglund, Dixon; Roy Fisher, Lincoln, Nebraska.

Poland-China Swine: McCarty and Starkweather, San Francisco; University of California, Davis; H. I. Marsh, Modesto; Geo. V. Beckman.

Hampshire Swine: C. J. Gilbert, Lancaster; Roy Fisher, Lincoln, Nebraska.

Chester White Swine: C. B. Cunningham, Mills; University of California, Davis; Oak Knoll Farm, Lakeport.

Tamworth Swine: R. Heckley, Santa Rosa; Dr. Jas. J. Summerfield, Santa Rosa.

Yorkshire Swine: Lloyd and Tointon, Santa Rosa.

Percheron Horses: Merritt-Bowers Company, Tulare; N. W. Thompson, Patterson; Ruth Maxwell, Sonoma; University of California, Davis.

Belgian Horses: Merritt-Bowers Company, Tulare; N. W. Thompson, Patterson.

Shire Horses: Easton and Ward, Diablo; Merritt-Bowers Company, Tulare.

American Saddle Horses: H. C. Ahlers, San Francisco; Merritt-Bowers Company, Tulare.

Thoroughbred Horses: Frankenheimer Bros., Stockton; Ed Cebrian, San Francisco; J. H. Rosseter, Burke.

Standard Bred Horses: Merritt-Bowers Company, Tulare; University of California, Davis.

Arabian Horses: S. C. Thompson, Concord.

In addition to the above the following entries have been made in the different classes, assuring the strongest kind of competition:

Herefords: John H. Cazier & Sons, Wells, Nevada; Charles Rule, Jenner.

Holsteins: Mrs. Annie Donders, Fresno; J. P. Phillips, Fresno; J. W. Scutter Holt; V. F. Dolcini, Davis.

Jerseys: E. F. Smith, Hayward; J. E. Thorp, Lockeford.

Guernseys: W. H. Dupee, Edgemoor Farms, Santee.

Hampshire sheep: Conway Ranch, Woodland.

Berkshires: J. H. Rossiter, Burke.

Durocs: J. E. Thorp, Lockeford; V. F. Dolcini, Davis.

Hampshire swine: Conejo Ranch, Newbury Park.

Percherons: L. A. Hall, Mountain View; Palo Alto Percheron Farm, Palo Alto.

Clydesdales: Estate of Thomas B. Dibblee, Lompoc; E. A. Simpson, Hood.

Toggenburg goats: University of California, Davis.

Anglo-Nubian Goats: Bralef Stock Ranch, Santa Rosa.

Saanen Goats: Bralef Stock Ranch, Santa Rosa.

The Southern California Fair at Riverside

Editorial Correspondence

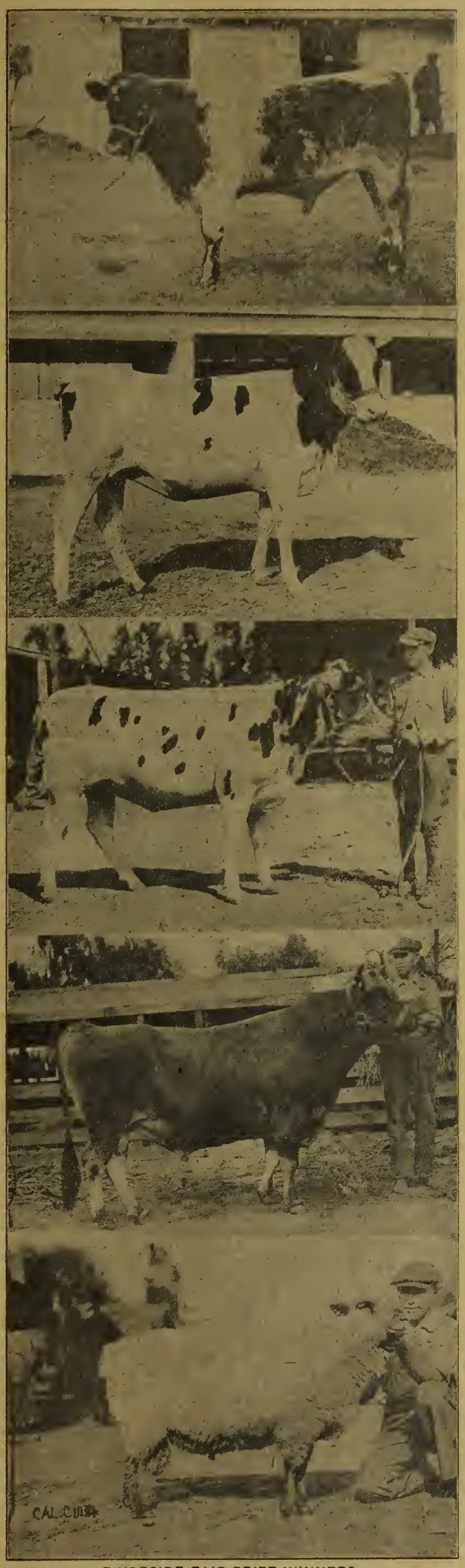
THE management of the Southern California Fair, which closed last Saturday night at Riverside, has occasion to feel highly gratified at the exhibition made of Southern California products and the reception given to the exhibits by the fair going public.

It was really and truly an agricultural fair, and with field crops and general agricultural productions made a far greater showing than most of us supposed was possible. Riverside has the reputation of being the home of the navel orange, and as the first great producer of navel oranges is often considered an exclusively fruit center. Such a fair as that of last week shows the falsity of such an idea. There were booths built of alfalfa, of milo and other sorghum grains, and sheaves of barley, wheat and oats were most generously used in decoration.

If I were to try to pick out the most striking of the exhibits I would have a task, for viewing the magnificent show of pure bred live stock, the exhibit tent of the farm bureaus of the county and that of tractors, trucks and farm implements, one could hardly feel justified in saying this one or that one was the best.

The farm bureau exhibit was wonderfully informing to the members of the bureau, but even more so to those of us who were looking at its activities from the outside. It consisted of demonstrations of methods more than of exhibits of products. The fourth grade object lesson plan of imparting information was followed. If one asked a question as to the dipping vat with sacks of grain ready to plunge into the bluestone, grain storage, milking machines, Babcock test or other more complicated processes, there was always the remark: "This is exactly how we do it." The successful cow with her 10,000 pounds or more of milk and three or four or five hundred pounds of butter fat stood alongside the boarder with a few hundred pounds of milk, or, perhaps a larger quantity of milk with very small fat production. In the next booth was the Babcock test in actual operation, showing to every dairyman who desired to know exactly how the yardstick was applied to the worth of his dairy stock.

To show the advantages of bulk storage of grain the bureau did not put up a placard and say: "It is wise to economize by this method of handling grain," but built an exact model of the $23,000 concrete elevator just completed at Murietta. This elevator has a 33,000 bushel capacity and is saving to the farmers who put up the money for its building all they put into it. J. V. Thompson, president and general manager of the elevator company, was on hand ready to give information as to the method of operating, handling and cleaning the grain and to show that it was absolutely mouse and rat proof and arranged on lines of greatest saving of labor and of preserving grain in best of condition. The company has found in the transportation companies warmest support of this method of handling. One of the greatest single items of savings, described by Mr. Thompson, is in the returns from the screenings and defective grains which are separated from the sound grains and kept in the possession of the company to be sold for low grade stock feeds. In addition to the value of this formerly waste grain there is saved the freight charge on it to the consumer's end of the line.



RIVERSIDE FAIR PRIZE WINNERS

Upper, Avon's Sensation, owned by F. L. Hall, junior champion. Second from top, It Sienpje Korndyke, owned by G. M. Brown, second junior heifer. Another Holstein owned by George Jr. Republic, Ida De Kol Pearl Lyons, winner of first as senior yearling heifer. Fourth from top a great Jersey bull, Walnut Park Noble, senior champion, owned by Geo. W. Thomas & Sons, Shropshire ram U. of C., 530, owned by Thomas & Sons, first and champion.

Both President J. E. Wherrell of the bureau and County Agent R. N. Wilson were in the tent giving information to every inquirer, especially where the inquirer was looking for information as to the advantages to him of becoming a member of one of the local centers. A strong membership campaign is now under way.

Adjoining the farm bureau tent was that of the Southern California Milch Goat Breeders' Association. Three hundred milch goats and kids were exhibited, and the enthusiasm in that tent was catching. The poor man's cow is growing in favor in every section of California.

The big tent which housed the tractor and implement exhibit was humming with activity because of the many motors operating "still" exhibits of tractors and trucks and farm implements. To give a list of the exhibitors in this tent would require much space, but I may say that every need of the farm could be met by selection from the implements and machines there displayed. The farm truck exhibit was perhaps one of the most striking in this great tent. Tractors were likewise shown in all types up to medium size. There were none of the great 75's which have been so much a feature in many tractor demonstrations.

Across the way from this implement tent was the mammoth tent housing general farm products displays. Here also were the county and community feature exhibits. These were not given the artistic setting of similar exhibits at the state fair, but in quantity and quality of products I believe they were fully equal. One of the most educational of the exhibits in this tent was made by the combined beekeepers' clubs of San Bernardino and Riverside Counties. It was a most convincing argument of the magnitude of the industry in those two counties. Of striking interest was the exhibit by Messrs. Kinzie of honey plants of Southern California. These were arranged like botanical specimens and gave a clear idea of the value and number of California's honey producing plants.

Corona, home of the orange and lemon, had an exhibit of alfalfa, milo, and sheaves of grain which surprised the visitor, as did the dearth of citrus fruits. Almost the entire exhibit, which was in charge of Mr. Jones of Corona, was given up to these general agricultural and field crops. Some magnificent dent corn ripened this year was a feature of the exhibit.

The California Date Association came over from the Coachella Valley with an exhibit showing commercial pack of a small portion of its 200,000 pound date crop which it anticipates it will produce this year. There were illustrations of the new 40 by 120 date packing house at Coachella and of methods of preparing fruit for market. The fruit was also exhibited in jams, marmalades, confections and pastes of nearly all kinds. Letters were shown giving analysis of date seed which it is expected to make into stock feed and possibly food for humans.

Continued on Page 508

Agricultural News Notes of the Pacific Coast

Northern California

Yolo County has 310 acres of figs.

Manteca is to have a large broom factory.

The Marysville district is out of bean bags.

Hops bring 75 cents a pound at Santa Rosa.

Chico harvest hands receive from $5 to $8 a day.

Alameda County has 13 large canneries operating.

Ungraded rice threshed last week at Colusa sold from $6 to $6.25.

The Orville cannery averages 50,000 cans of tomatoes daily.

Sonoma County grapes are going East at $30 or better a ton:

Rice fields are suffering damage from ducks in Glenn County.

Last week a site for a new cannery sold in Oakland for $150,000.

Rain and fog is delaying the bean harvest in northern counties.

The famous Hooker oak near Chico is under treatment by a tree surgeon.

The big new rice mill at Colusa will start on October 20 with 100 employes.

A 750 tract of rice land in Colusa County was sold for nearly $100 an acre.

The estimate of Butte County's hop crop is 5,500 bales, worth $1,000,000.

Pears from the Stennett orchard in Nevada County brought $6.20 a box in New York.

Sacramento's municipal garden of 30 acres brought in $3,000 in tomatoes this year.

Purple vetch seed is in great demand in the northern counties at 15 cents a pound.

From the Sacramento delta district 300,000 sacks of potatoes have reached Sacramento by river boats.

For the first time in history a carload of wheat was shipped from Auburn, Placer County, last week.

The Humphrey's vineyard, in Sacramento County, last week shipped a car of Tokays to Havana, Cuba.

Sutter County has just secured 1,000 seedling peaches of the wild Chinese peach resistant to alkali.

A shipment of 4,000 bales of hops to England, valued at $500,000, is being made from the Sacramento Valley.

Rice growers in the Sacramento Valley are seeking to hire 20 airplanes to drive ducks away from the fields.

Grape growers in several districts in Napa County have sold their crop to an Eastern buyer for $28.50 a ton.

Glenn leads the rice counties with a $9,000,000 crop. Colusa is second with $8,000,000, and Butte third with $5,000,000.

The Northern California Milk Producers' Association is filling an Eastern order for $390,000 worth of powdered milk.

The California Fruit Distributors of Sacramento has sent forward 18,000 carloads, with 10,000 more, principally grapes, to go.

A state committee of 55 met at Stockton September 29 and adopted a strong anti-Japanese program regarding land owning.

D. H. Elmore, Tulare, got 600 sacks of barley from 20 acres, then put in field corn and sold it standing for $1,500. Good double cropping.

Central California

Kern County has 2000 acres of cotton.

Pixley is to have a eucalyptus lumber mill.

Sacramento County leads the state in pear production.

The Turkish sweet potato plant employs 115 persons.

Turlock has a jelly farm where six acres of roselle are grown.

A 32-acre orange grove at Lindsay, 11 years old, sold for $40,000.

The ten year old beet sugar factory at Turlock was moved to Utah.

The Emerzian 80 acre vineyard at Tulare paid $312.50 an acre this year.

The average potato yield in San Joaquin County is 80 bushels to the acre.

The Covell ranch of 225 acres of grapes near Modesto sold for $600 an acre.

Dinuba's Chinatown, recently destroyed by fire, is rapidly being rebuilt.

The Carnation Milk Company will build a condensary at Gustine, Merced County.

In three infested townships, Merced County is cleaning out the Russian thistle.

The Fresno Turkish Tobacco Company is the latest combination of growers.

A dozen Merced County dairymen have paid fines for not properly cooling milk.

The Merced-Stanislaus Sweet Potato Growers Association now has 225 members.

Reports throughout Central California are to the effect that hog prices are dropping.

The Wilson tract of 1200 acres near Dinuba is offered the state for a land colonization scheme.

The Alta district of Tulare County has an usually heavy tonnage of extra fancy cluster raisins.

At Grass Valley 100 head of cattle sold at auction, the highest price being $9.50 per hundred.

A million dollars a year for three years will be spent for advertising by the California rice growers.

At the Hanford Poland China sale of Haag-Bernstein, a boar sold for $570 and sows averaged $189.40.

It is estimated that 40 per cent of the state's peach crop is grown in Fresno, Kings and Tulare Counties.

One almond tree on the Schultz place at Terra Bella, Tulare County, yielded 95 pounds of nuts; sold for $28.50.

The Central California Cantaloupe Company, composed of about 20 Japanese growers, shipped 275 cars from 650 acres.

A new evaporator near San Jose dried grapes in 12 hours, apricots in six hours, and plums in nine hours, all in fine condition.

R. L. Nougaret, our official viticulturist, has been making a survey of vineyards in Sonoma County with Commissioner Bremner.

An Italian near Lodi, before and after working hours, cared for an acre and a half vineyard of Tokays and sold 750 crates at $2 each, or $1500.

Southern California

Hemet has a new broom factory.

Colton has secured a park site of 14 acres.

Cotton ginned in Blythe to October 1 was 1100 bales.

Oxnard lemons sold at Boston last week at $9.50 a box.

Brawley shipped eight carloads of cattle on October 1.

Seed barley in Southern California is bringing $100 a ton.

San Bernardino County will build an insectary at Upland.

The ten acre Spittler orange grove at Yorba Linda sold for $38,000.

Yucaipa is sending 10,000 boxes of apples to the cannery at Wineville.

Japanese raise 85 per cent of the melon crop in the Imperial Valley.

The Imperial Valley will have a honey crop for 1919 of 20 carloads.

The California Avocado Association meets at Santa Barbara, October 24-25.

A cloudburst cut off Palo Verde Valley from the outside world for a full week.

The Tri-Counties Reforestation Committee will meet at Anaheim October 9.

The Lima bean growers met at Oxnard October 6 and set the price at 14½ cents.

T. R. Canady, a jeweler at Santa Ana, sold $360 worth of vegetables from his city garden.

W. F. Bollinger, Pomona, has had a seedless fig crop on one tree for many years.

The Monrovia-Duarte growers have choice of three railways, therefore no car shortage.

Irwindale, Los Angeles County, shipped 102,624 boxes of citrus fruits the past year.

Mrs. Pachita of Hemet earned $60.20 last week for cutting peaches in the local cannery.

A few Ventura bean ranches bore a heavier crop this year than last. All were irrigated.

A Newhall apricot tree is 62 inches around three feet above ground, planted in 1883.

Mexican cotton pickers to the number of 2,000 have crossed the line into Imperial Valley.

The Yucaipa apple packing house is handling only Delicious and Rome Beauty at present.

Last week $2250 an acre was paid for 35 acres in walnuts near Mound City in Ventura County.

Orange County walnut growers want the school children to pick nuts; the school authorities say no.

The last tunnel on the San Diego-Arizona railway is being finished. Trains will start December 1.

Pomona growers complain of walnuts dropping. Some blame foggy nights; some blame red spider.

The West Ontario Citrus Association received one-half more money this year than any previous year.

Three ranchers at Blythe were taken to court last week for allowing Johnson grass to seed on their lands.

Early table grapes will be planted in both Coachella and Imperial Valleys, as they ripen earlier than elsewhere.

The Coast and General

Oregon's potato crop will be short this year.

Hay in Klamath County, Oregon, is $35 a ton.

The Idaho honey crop is estimated at $270,000 a year.

Oregon expects to yield a 1919 prune crop of $40,000,000.

Every part of the United States reports a car shortage.

A 160 acre ranch at Chandler, Arizona, sold for $425 an acre.

The cherry crop of The Dalles, Oregon, district totaled 1,000 tons.

Wheat on the Hill farm at Peoria, Oregon, yielded 45 bushels an acre.

The 1919 grain crop of Umatilla County, Oregon, is worth $9,000,000.

A 1,200 acre orchard in Okanogan Valley, Washington, sold for $50,000.

Growers of peaches are hauling them 50 miles into Portland, Oregon.

There is a heavy demand for wild blackberries at Bellingham, Washington.

The 210 acre Nelson ranch at Chandler, Arizona, sold for $400 an acre.

Lane County, Oregon, has 8,000 acres of corn, 2,000 more than last year.

Two carloads of Bear Creek, Oregon, pears sold in New York for $3.85 a box.

Wenatchee Valley, Washington, has shipped 2,500 cars of Jonathans this season.

A moth borer has destroyed the seeds of Acacia Koa in the Hawaiian Islands.

California-Arizona cotton growers are receiving about $195 an acre for their crop.

A potato grower at Nampa, Idaho, made $10,000 net profit from a rented 40 acre farm.

The lower Yakima Valley, Washington, reports a heavy apple loss through a hard windstorm.

A. J. Stevens, Cottage Grove, Oregon, has picked 13 tons of string beans from three acres, bringing him $1,700

Hood River, Oregon, vinegar factories offer $10 a ton for cull apples after the "cookers" have been sorted out.

The first cannery in Grays Harbor County, Washington, began operations recently at Montesano on wild blackberries.

Sanderson Brothers of Yakima paid $40,000 for a 30 acre apple orchard in 1914. This year the crop sold for $40,000 and the orchard has paid well every year.

Work on the concrete highway between Tempe and Mesa, which is a continuation of the concrete highway between Phoenix and Tempe has again between Phoenix and Tempe, has again five or six months.

At the International Soil Products Exposition at Kansas City, September 24 to October 4, Maricopa County was awarded first premium for county exhibits and several special prizes. A number of individual prizes were also won by Arizona farmers, among them being first prize for American long staple cotton, dwarf milo and alfalfa hay. Among the states' exhibits Arizona won second prize for best general display.

Standardization Law a Success

By Ernest Braunton

THE 1919 standardization law in regard to fruits and nuts is a grand success and is in general running very smoothly. In the larger commercial centers very little trouble is experienced by the officials; in the more rural districts conformation to legal requirements is more slowly made, but all will finally cooperate to raise the standard of the earth's products. Nearly all growers and packers welcome the enforcement of the law, for it elevates the business and places all on a common level.

The writer recently made the rounds of Los Angeles fruit stalls to the number of about 50 and visited the mammoth city market with County Horticultural Commissioner Ryan, Market Inspector Shepherd and State Inspector Taylor. Very little trouble was experienced on the trip and good nature prevailed even when some handlers of fruits were "called down." It is the policy of both county and state officials to be very lenient, kind and courteous to all first-time violators of the law. They are plainly shown wherein they are delinquent and warned against a recurrence of the delinquency. After that subsequent infractions are more severely dealt with.

The apple standardization law is a separate enactment and is a little more strict in its requirements than the one covering produce in general. But it is the one that is most nearly complied with. It is quite evident that all growers and packers of large amounts have sought to meet every requirement, and those falling short do so through ignorance. The law states that every box of apples must be labeled with the grower's or packer's name and place of business, the name and grade of apples, and the net weight or number of apples contained in the box. Some fall short in one or more provisions, as the following example will show; the name of packer only is changed. On the end of the box is a typewritten paper pasted on which read the following lines, from top to bottom: "Delicious." "A. N. Greeley, Yucaipa, Cal." "Sept. 30, 1919." "Net weight 30 pounds or more." The grade or brand is not given, though the law requires it.

Pears, plums, peaches and prunes are usually well up to the standard when coming from a packing house or large grower, but considerable trouble is experienced with local growers who haul their produce to market in open lug boxes. The local authorities have induced nearly all of this latter class to adopt a card system. On every box a card is tacked, containing the grower's name, the name of the produce and the net weight. The cards are small, the size of an ordinary business card. One local firm of growers has its name printed on the lower half of card thus: "Smith, Jones & Co., Montebello, Cal." On the upper half, one below the other, are the names of three commodities they grow: "Tomatoes, Potatoes, Sweet Potatoes." Before each name is a blank space for grade or name of variety and after each name a space for the net weight. This is far superior to stamping with a rubber stamp, for as boxes get old and dark colored or dirty the stamp cannot be read, and it could not truthfully state the contents of the box, for the latter varies in kind and weight. Officials are much pleased to find that nearly all handlers are adopting the card system. Large firms buying produce in the field send the cards out with the driver or packer and they are tacked on and filled out before the boxes leave the field.

The rubber stamps used on apple and other boxes are almost useless, for the reason that they cannot be read. The writer counted 43 boxes before he found one on which he could read every word. This is largely owing to the roughness of the wood, but the stamper has so many to decorate that it can hardly be done properly. A blank space for the stamp should be left on each label, which would then be made plain to all. For this reason the writer believes the law should be amended, setting forth the size and style of label, what it should contain and where the blank should be left for stamp. All three of the officials interviewed were heartily in favor of such a measure. When asked as to confiscations, they stated they never seized fruit at first infraction of the law, but after one warning, the offender had his fruit sent to an orphan asylum or other charitable institution, with the compliments of the county or state. It has seldom been found necessary to force such generous action on a grower the second time. One fault noticed on many boxes is that a fancy label is on one end, with all legal requirements printed thereon that could be printed and the net weight or number stamped on the other end. All should be on the label end of box.

Reports from Central California show that more tobacco will be planted next year and more tobacco factories erected.

FARMERS ADOPTING TRAILERS

Many farmers and fruit growers are finding the trailer or semi-trailer one of the most useful pieces of farm equipment. The light two wheel and four wheel, high speed trailer is used with runabouts and touring cars for hauling small quantities of farm products to market which otherwise would go to waste or be fed to live stock. Too much time would be lost if these small lots were taken to market with horse and wagon, but a round trip to town with the family car and a trailer loaded with a few hundred pounds or half a ton can be made in a couple of hours or less. Produce handled in this way includes milk, butter, eggs, live poultry, fruit, vegetables and even live pigs, calves and cows. The car is used at other times without the trailer for all customary purposes.

Semi-trailers are used extensively where there is more and heavier hauling to do. Loads of two to three tons are carried on semi-trailers with runabouts and touring cars. The rear deck of the runabout or the body of the touring car back of the front seat is removed and a fifth wheel device bolted into the frame over the rear axle. The front end of the semi-trailer is attached to and supported by this fifth wheel. Weight of the load is thus divided between the automobile and the two wheels of the semi-trailer. The trailer is detached whenever desired.

Small farmers find that trailers and semi-trailers, used with their automobiles, often serve all their hauling needs. Says a cattle breeder in Arizona who has hauled a two wheel trailer 15,000 miles behind his light runabout and has not had an outlay of more than $15 on the trailer:

"I have carried cows, calves, bulls up to a ton weight; lumber, grain, large trees, wood, coal and many other things used on my farm. Such a vehicle is indispensable to me and I think would be more generally used by farmers if they realized the many uses the trailer can be put to."

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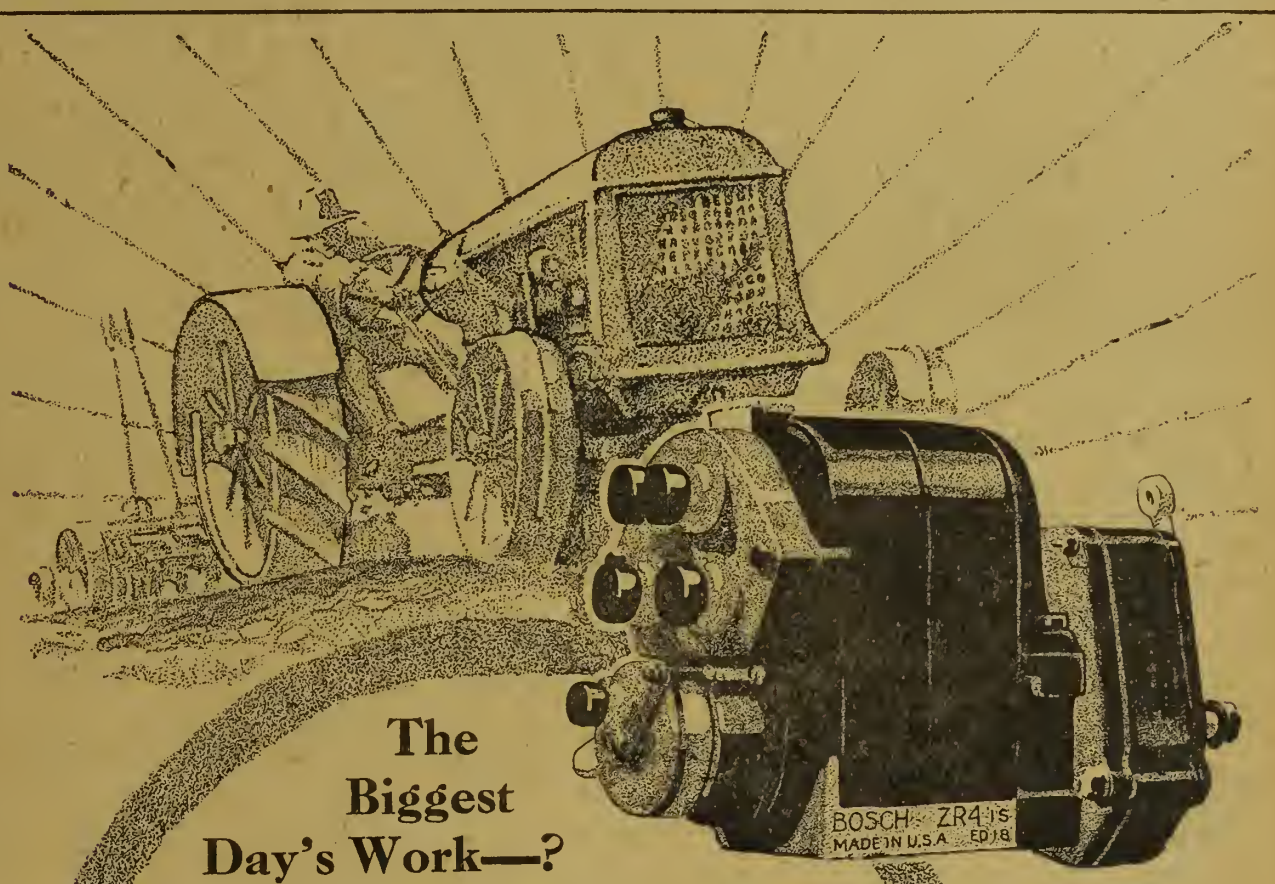

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SOUTHERN CALIFORNIA FAIR

Continued from Page 505

Riverside County's exhibit made little attempt at artistic design but was a great display of general farm products. Elsinore had a most attractive booth featuring the brick and clay products industry of that section. Of course grapes and practically all fruits were also striking features in this exhibit. Arlington, Moreno, Banning, Beaumont, Northside, Hemet and other communities of Riverside County had individual and most creditable exhibits.

The most striking arrangement of displays was that made by Orange County in charge of Mr. McDannald. Walnuts naturally were most in evidence and there was a large exhibit of semi-tropical fruits little known and yet to be proven out in this state. There were cherimoyas, sapotas, bananas, feijoas, and many varieties of avocados. The San Diego back country exhibited butter "beans" some yards long, sugar beets, oats and other grains. Here again the agricultural end of the county's productions predominated.

RIVERSIDE LIVE STOCK EXHIBIT

By T. J. Hitte

OUTSIDE what might be termed the "big league" fairs and live stock shows of the Pacific Coast country the live stock exhibit at the Southern California Fair at Riverside, October 7-11, easily holds the record in number of entries, in diversity of breeds and in the average high tone of the general line of exhibits.

Riverside is no longer a mere feeder for other big shows. Her live stock feature is a tub standing squarely on its own bottom. She commands a field that is unique in the more than promising character of its live stock interests, and she has played a winning hand early in the day in catering to the development of those interests through a quick and substantial recognition of their importance to the upbuilding of a well balanced system of agriculture.

The fair called forth a line of draft horse exhibits that is one of the surprises of the season. The principal competition lay between the fine exhibit from F. L. Hall's "Rosecrest" establishment at Perris and that from the Merritt-Bowers stud at Tulare.

The Shorthorn feature of the show was likewise largely dominated by fine lines of exhibits from the Rosecrest herd and the Tagus Ranch. The Herefords were represented by the H. D. Ogden herd at Alpine. In the Holstein section there were five well defined angles to the competition. The Burr Farm herd, Los Angeles; Stalder Bros.' herd, Riverside; George Junior Republic herd, Chino; Tampton Bros.' herd, Artesia; and the E. R. Stalder herd at Nuevo.

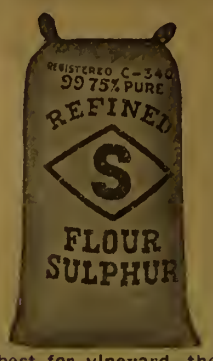
The Jerseys were represented by the J. E. Wherrell herd of Riverside; the Grant A. Brown herd from Eastmont Farm, El Monte, and the Golden Glen herd, owned by Geo. W. Thomas & Sons at Arlington Station, Riverside.

Hollow Hill Farm, Colton, had full sweep in the Gurensey section, with a line of exhibits, however, worthy of world competition.

In the swine department popular interest was supreme. The Duroc section was of a character not to be outclassed this side of the big Middle West shows. While the more pretentious show herds from Winsor Ranch, Bonita, San Diego County, and Diamond Bar Ranch, Los Angeles County, were in the ascendency as to numbers, to say the least, it was evident that there were present numerous formidable competitors from all points of the compass, such as Fallfadale Farm herd, Perris; Ireland Ranch, Owensmouth; Hewitt Bros., Van Nuys; Charnock Ranch, Hemet; H. S. White, Chino; J. S. Prendergast, San Bernardino; W. M. Taylor, San Bernardino; C. F. Myers, Lankershim; W. Moore, Fallbrook, and C. F .Mitchell & Son, San Diego.

The Hampshire section had fine displays from the Gordon & Langdon herd at Perris, the C. J. Gilbert herd at Lancaster and the Fairbanks Ranch herd at Redlands. It was one of the

SULPHUR



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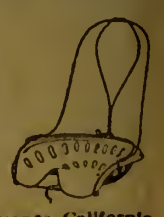

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finest displays yet seen on the coast.

In the Poland-China division there were excellent exhibits from H. B. Peake's "Poland-China Farm" at San Bernardino, from the H. Christiansen headquarters at Arlington Station, as well as smaller displays from the herds of Burton C. Platt at Eagle Rock and the Italian Vineyard Co. at Guasti.

The Berkshire brought forth displays from F. L. Hall's Rosecrest Farm at Perris and from the Italian Vineyard Co. herd at Guasti.

There were about 300 goats on exhibition, accentuating the fact that Southern California is one of the greatest goat produoing sections of the world.

Following is full list of awards. Prof. J. I. Thompson of the University of California placed the awards in the Duroc-Jersey classes, while all other swine classes were judged by Walter T. Gatton of Pomona. F. H. Scribner of Los Angeles and Dr. L. M. Hurt of Pasadena officiated in cattle classes.

HORSES

Percherons

Exhibitors: Merritt & Bowers, Tulare; J. J. Prendergast, Redlands; George A. Carter, Perris; W. E. Galwas, Riverside; F. L. Hall, Perris; E. R. Stalder, Nuevo.

Stallion 4 or over—1, Merritt & Bowers on Paicines Padre; 2, Prendergast on Loussett; 3, Merritt & Bowers on Inquiet; 4, Merritt & Bowers on Palo Alto Prince; 5, Carter on Garmon.

Stallion 3 under 4—1, Merritt & Bowers on Woodland; 2, Galwas on Restraint.

Stallion 2 under 3—1, Merritt & Bowers; 2, Hall on Baronet.

Mare 6 or over—1, Hall on Rosalia; 2, Hall on Berna.

Mare 2 under 3—1, Hall on Miss Fontana; 2, Hall on Rosena Lady.

Mare 1 under 2—1, Hall on Miss Hall; 2, Hall on Miss Led; 3, Stalder on Agnes.

Champion stallion any age—Merritt & Bowers on Woodland.

Champion mare any age—Hall on Miss Fontana.

Stallion and three of his get, either sex—Hall on Castillion; 2, Hall on Baronet.

One stallion and four mares, any age—Hall.

Five stallions owned by exhibitor—1, Merritt & Bowers on Woodland and four others.

Specials by Percheron Society of America: Stallion 3 yrs. or over bred and owned by exhibitor—Merritt & Bowers on Woodland. Stallion under 3, bred and owned by exhibitor—1, Merritt & Bowers on Colon; 2, Hall on Baronet. Champion stallion, bred and owned by exhibitor — 1, Merritt and Bowers on Woodland. Mare 3 years or over, bred and owned by exhibitor—Hall on Rosalia. Champion mare, bred and owned by exhibitor—Hall on Rosalia. Get of stallion, 3 colts, either sex of same stallion, American bred—Hall on stallion Castillion; colts, Miss Fontana, Rosena Lady, Miss Hall. Produce of mare, two colts either sex, American bred, produce of same mare—F. L. Hall on mare Rosalia, colts Molly and Berna. First champion stallion—Merritt & Bowers on Woodland. Reserved stallion, open class—Merritt & Bowers on Cadet of Paicines. Champion mare, open class—F. L. Hall on Rosalia.

Clydesdales

All awards Merritt & Bowers, Tulare.

Belgians

All awards Merritt & Bowers.

Shires

All awards Merritt & Bowers.

Grade Farm Horses

Exhibitors: Hall Brothers, Winchester; Falfadale Farms, Perris; W. E. Galwas, Riverside; Newport Estate, Ethanac.

4 and over—1, Hall on Fagus; 2, Hall on Berna; 3, Falfadale on Eukeiele.

3 years old—1, Galwas on Queen.

2 year old—1, Falfadale on Prince; 2, Newport on Nancy Hanks.

1 year old—1, Falfadale on Ruby; 2, Falfadale on Bird; 3, Newport on Nancy.

Less than 1 year—1, Hall on Bob; 2, Falfadale on Sam.

Mare with two of her colts— Falfadale on Beauty, Sam and Ruby.

Sweepstakes, best mare or gelding—1, Hall on Fannie; 2, Falfadale.

Brood mare with colt at side—1, Hall on Fannie; 2, Falfadale on Beauty and Sam.

Heavy Draft Horses

Exhibitors: Merritt & Bowers, F. L. Hall, Fred Newport, Ethanac.

Draft Team

Best two-horse team, each horse 1600 lbs. or over—1, Merritt & Bowers on Cricket and Victoria; 2, Hall.

Best two-horse team, each horse under 1600 lbs.—1, Newport.

Best four-horse team, each horse 1600 lbs. or over—1, Merritt & Bowers; 2, Hall.

Mules

Matched span, 3 or over, California bred—1, Merritt & Bowers on reds; 2, Merritt & Bowers on blacks.

Under 1 year—1, Hall Bros on jenny; 2, Falfadale Farm on jack.

Jack Stock

Jack 4 or over — 1 and 2, Merritt & Bowers, Tulare.

Jack 3 and under 4—1, Merritt & Bowers on General Pershing.

Standard Bred Horses

Stallion 4 or over—1, Merritt & Bowers on Varcoe.

Mare 2 yrs. old—1, Frank Rees, Hemet, on Uva.

CATTLE

Holsteins

Exhibitors: Frampton Bros., Artesia; George Jr. Republic, Chino; W. C. Lookingbill, Riverside; Stalder Bros., Wineville; Burr Farm, Los Angeles; E. R. Staider, Nuevo; C. C. Buford, Riverside; George A. Smith, Corcoran.

Bull 3 and over—1, Frampton on Segis Pontiac De Kol Burke; 2, George Junior Republic on Dicter Spofford Korndyke Lad 5th; 3, Lookingbill on King Kasteleinje Hengerveld.

Bull 2 and over—1, Stalder on Rosamaine's Pontiac Netherland.

Bull, senior yearling—1,Burr Farm on Sir Manuel Korndyke.

Bull, junior yearling—1, E. R. Staider, Nuevo, on Rosamaine's Pontiac Ormsby; 2, W. C. Lookingbill on Paola Count Segis.

Bull, senior calf—1, George Junior Republic on Republic Tuebie Korndyke; 2, Stalder Bros. on Rosamaine's Pontiac De Kol Keeva; 3, Stalder Bros. on Rosamaine's Pontiac Jean.

Bull, junior calf—1, Burr Farm on Paul Veeman Korndyke; 2, Stalder Bros.; 3, Lookingbill on Paola Gold Leaf.

Cow, 3 and over—1, Burr Farm on Durmella 2nd; 2, Burr Farm on Topsy Clothilde Hengerveld; 3, Buford on Georgia Pontiac.

Cow, 2 and over—1, Lookingbill on Alta Rosabelle Korndyke; 2, George Junior Republic on Snowflake of Juliana of Rock; 3, Stalder Bros. on Rosamaine's Artis.

Heifer, senior yearling—1, George Junior Republic on Ida De Kol Pearl Lyons; 2, Stalder Bros. on Rosamaine's Pontiac Cold Drop; 3, Burr Farm on Duchess Ormsby Ladivale.

Heifer, junior yearling—1, Staider Bros. on Rosamaine's Johanna's Mercedes; 2, Burr Farm on Lt. Seempje Korndyke; 3, Geo. A. Smith.

Heifer, senior calf—1, Frampton Bros. on Vara Mia Pontiac; 2, E. R. Stalder on Aralia Rowena Princess; 3, Burr Farm on Dorthia Witle.

Heifer, junior calf—1, Burr Farm on Veeman Bendoni; 2, George Junior Republic on Victory Pontiac Maid; 3, Burr Farm on Veeman Pontiac.

Senior champion bull—Frampton Bros. on Segis Pontiac De Kol Burke Clyde.

Junior champion bull—George Junior Republic on Republic Tuebie Korndyke.

Senior champion cow—Burr Farm on Durmelia 2nd.

Junior champion cow—Stalder Bros. on Rosamaine's Johanna Mercedes.

Best Bull — Frampton Bros. on Segis Pontiac De Kol Burke Clyde.

Best cow—Burr Farm on Durmelia 2nd.

Aged herd—1, George Junior Republic; 2, Stalder Bros.

Young herd—1, Stalder Bros.; 2, Burr Farm; 3, George Junior Republic.

Calf herd — 1, Burr Farm; 2, Stalder Bros.; 3, George Junior Republic.

Four animals either sex, get of one sire—1, Frampton; 2, Stalder.

Two animals either sex, get of one sire—1, Stalder; 2, Burr Farm.

Shorthorns

Exhibitors: F. L. Hall; Frank E. Collier, Wildomar.

Bull, 3 and over—1, Hall, Perris, on Knight's Crown.

Bull, 2 and over—1, Hall on Bryant's Knight.

Bull, junior yearling — 1, Collier on Orange Flash; 2, Hall on Knight's Archer.

Bull, senior calf—1, Hall, red; 2, Hall, roan.

Bull, junior calf — 1, Hall on Avon's Sensation; 2, Hall on Avon's Type.

Cow, 3 and over—1, Hall on Calla Blossom; 2, Hall on Moss Rose.

Cow, 2 and over—1, Hall on Barbara's Red Rose; 2, Hall on Bartlett Herd Queen.

Heifer, senior yearling — 1, Collier on Palomar Maid; 2, Hall on Betsy Lady Warren.

Heifer, junior yearling — 1, Hall on Aline.

Heifer, senior calf—1, Collier on Palomar Lil; 2, Hall, Red; 3, Hall, Roan.

Heifer, junior yearling—1, Hall on Mina Anne; 2, Hall.

Senior champion bull—Hall on Knight's Crown.

Junior champion bull—Hall on Avon's Sensation.

Senior champion—Hall on Calla Blossom.

Junior champion cow — Hall on Mina Anne.

Best bull—Hall on Avon's Sensation.

Best cow—Hall on Calla Blossom.

American Shorthorn Breeders' Association Special Prize: Champion Shorthorn bull over 12 months, owned by exhibitor in this district—Collier.

Reserve champion bull over 1 year old—Hall on Knight's Crown.

Champion cow or heifer, any age—Hall on Calla Blossom.

Aged herd—Hall.

Young herd—Hall.

Calf herd—Hall.

Four animals, either sex, get of one sire—1, Hall on Avon's Glory; 2, Hall on Knight's Avon.

Two animals, either sex, get of one sire—Hall.

Guernseys

Exhibitors: Hollow Hill Farm, Colton; W. P. Hodge, Hinkley; W. C. Lookingbill, Riverside.

Bull, 3 and over—1, Hollow Hill Farm on King of Hollow Hill Farm.

Bull, 2 and over—1, Effie's King of Hollow Hill Farm.

Bull, junior yearling—1, Topper Langdon of Hollow Hill Farm.

Bull, senior calf — 1, Hodge on Carl Master of Hollow Hill Farm; 2, Lookingbill on Hidden Valley of Arcadia; 3, Hollow Hill Farm on Devel E. King of Hollow Hill Farm.

Bull, junior calf — 1, Lookingbill on Pable Desire Jacker; 2, Hollow Hill Farm on Counsel Langdon of H. H. F.; 3, Hollow Hill Farm on Ruben King of H. H. F.

Cow, 3 yrs. and over—1, Hollow Hill Farm on Imp Fan of Brickleigh; 2, Hollow Hill Farm on Imp Brittle Mistletoe;

(Continued on Page 516.)

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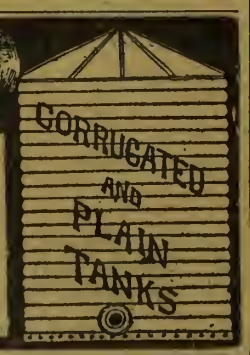

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Harvesting Apples

In Bulletin 1080 prepared by the department of agriculture, "Preparation of Barreled Apples for Market," there is a fund of information regarding harvesting which may be of interest to Pacific Coast horticulturists. Barreling hardly has interest in a box apple section, but from the harvesting suggestions we quote:

In harvesting the crop it is generally advantageous to use both sacks and baskets, as the latter are especially convenient for gathering fruit near the ground, while the sacks can be used to advantage for ladder work, as the pickers have both hands free. The chief disadvantage of sacks is that their use involves a greater possibility of bruising the fruit. In emptying either the basket or the sack, care should be taken to avoid dropping the fruit. If a basket is used it should be lowered to the bottom of the lug box or other receptacle and inverted gently. A certain type of sack is constructed with a drop bottom so that the fruit can be emptied without bruising it.

Ladders Make or Mar

Much efficiency in picking depends on the use of ladders of the proper type. Several varieties are in common use. Step ladders are especially satisfactory for work in small trees and in picking from the lower branches of larger trees. The most desirable types are wide and flaring at the bottom, narrow at the top and supported with but one prop. As a rule not enough consideration is given to the selection of ladders.

Where the crop is packed over tables that are moved about the orchard the packers usually carry the fruit in the picking utensil to the packing table. While it is common practice for the pickers to do this it should be avoided by assigning certain members of the crew to this task. They should also furnish the pickers with empty receptacles as needed.

In small orchards, when climatic conditions are especially favorable, it may be advisable to pack in the orchards, but in most instances some sort of shelter will insure better results.

Incombustible Vegetation

By M. B. Curtis

Some ten years ago the writer spent two years in southeastern Texas. The country is covered with a dense growth of mesquite, cat's claw, palo verde and many other trees and shrubs. The growth is very dense. Underneath and in open spaces, grows what is known as mesquite grass that resembles Bermuda grass. It grows from root cuttings and spreads by creeping along the ground and rooting at the joints. Unlike Bermuda it is easy to get rid of by plowing or cultivation. This country along the Rio Grande is at times very dry and crops cannot be successfully grown without irrigation. This section with its dense growth, with dead grass underneath, never suffered from forest fires. No one ever took pains to put out a fire; they were set indiscriminately every where; they never spread. I have seen a mesquite log smoulder along for a week and the fire from it never spread more than 20 to 30 feet. Immense brush piles would only burn a narrow circle around them. We cleared 200 feet and started fires under all sorts of conditions but they never spread

The mesquite grows under arid conditions, even in the Imperial Valley. Under irrigation it is a beautiful tree, resembling the pepper with its pendulous branches.

The mesquite grass is valuable for pasture and forms a dense mat. In time of drouth it simply suspends business and is ready to start with the first rain. I have seen it under five to eight feet of water for two weeks. It grew vigorously as soon as the water receded. Planted in rows it spreads and forms a dense mat, making a good lawn in a short time. The forestry department has a nearly clean slate in the San Dimas Canyon and San Gabriel country. May we not take a page from nature's book and grow something on our mountains that will not burn so readily? Mesquite grass will make a grass mat that will prevent washing.

Control of Walnut Codling Moth

To control the codling moth pest, which has done such serious damage to walnut groves, especially in Ventura and Santa Barbara Counties, the last legislature appropriated $10,000 a year for two years. The expenditure of this fund and investigation and control work was placed in the hands of the state department of agriculture which imposed the following regulations:

No sacks which have been used as containers for walnuts brought to any establishment where walnuts are handled shall leave until subjected to the necessary treatment to prevent them from acting as carriers of the said walnut codling moth.

It shall be unlawful for any person to transport from any locality to another any sacks which have been used as containers for walnuts, or which are of unknown origin unless said sacks be accompanied by a certificate by a duly authorized representative of the director of agriculture that they have been treated immediately prior to their leaving their last place of storage or their former use and have not, since such treatment, been exposed to infestation by said codling moth.

Any person who shall bring or cause to be brought from any district infested with walnut codling moth into a district where the pest is not known to exist any walnut sacks, containers, or orchard appliances shall, upon notification by any official charged with the enforcement of this act, cause all such sacks, containers, etc., used in the transportation thereof to be treated in such manner as will guarantee to the satisfaction of said official their freedom from the said walnut codling moth.

POLAND WANTS CALIFORNIA "LADYBIRDS"

Agricultural Director Hecke is in receipt of a request from the Polish ministry of agriculture at Warsaw asking that their agricultural department be furnished with ladybirds, Hippodamia convergens Guer.

COLLECTING THE PARASITES OF BLACK SCALE AND MEALYBUG

A parasite collector of the state department of agriculture is now in Africa collecting insects parasitic to black scale and mealybug. These will be sent to the state insectary at Sacramento where they will be propagated for later distribution to infested orchards.

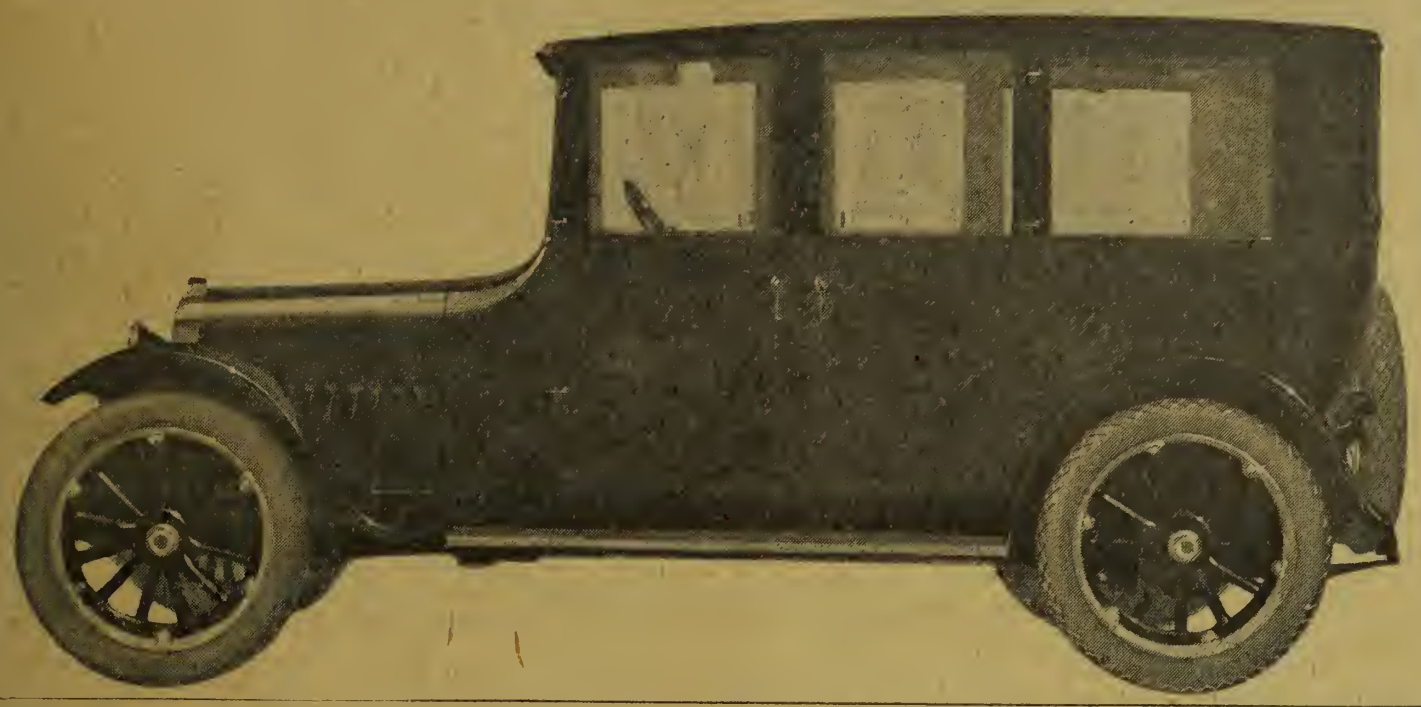
E. W. Rust, the collector, is being assisted with his work by government entomologists at Cape Town and Pretoria.

Peter Bisset, of the office of foreign seed and plant introduction, United States department of agriculture, has been inspecting the federal plant introduction gardens at Chico.

The government insectary, which has been located at Berkeley, will be moved to Sacramento as soon as a building can be secured or erected.

Oakland

OAKLAND OWNERS REPORT RETURNS OF FROM 18 TO 25 MILES PER GALLON OF GASOLINE AND FROM 8,000 TO 12,000 MILES ON TIRES



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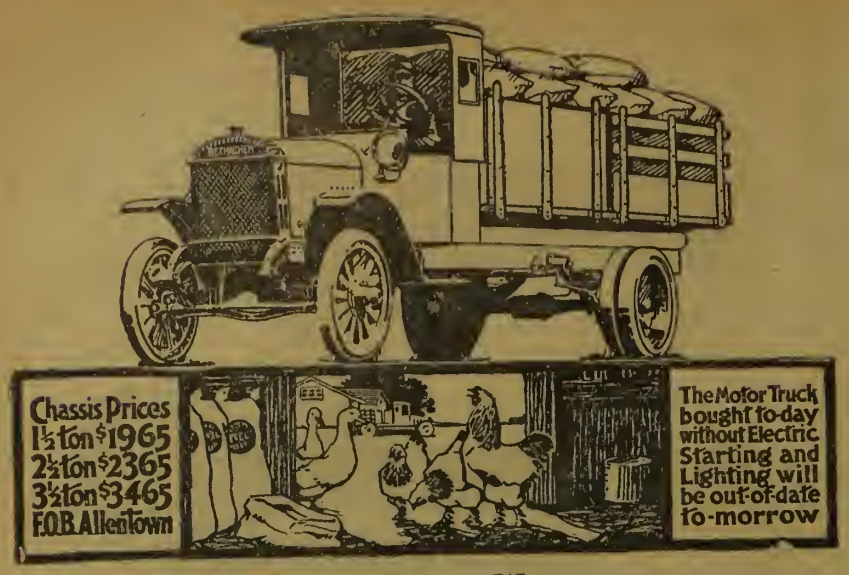
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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Melon Aphis

I have lost my melons on account of insect pests for two years. The young growth is attacked during tbe montb of August after first fruit is about half grown, tbe lice gatber on tbe under side of leaf, causing leaf to curl, and further growth is checked and blossoms and young fruit wither and fall off. Ants and flies gather in large numbers but they do not seem to destroy the pest. Owing to the fact that the lice attack the under side of the curling leaf it is rather difficult to apply any liquid solution. Can you suggest a remedy?—Subscriber, Pomona.

Melon aphis calls for a strenuous fight. If it is allowed to bave its way and go on and multiply either on the melon vines or on weeds in nearby fields it gives such an early infestation the next spring that the coming crop is reasonably sure to be destroyed before action can be taken. Control should be undertaken the preceding season in cleaning away all weeds, and the moment the pest becomes apparent spray or else burn the vines before a new generation can come on. Tbere may be secured a measure of control if great numbers of lady birds are installed in the field. These may be secured from the state horticultural commissioner early in the spring time. That is, they may be if tbe supply is sufficient. Tbe best control is preventing the pest from ever getting a foothold. It is the honeydew exuded by these aphis which calls the ants and they surely do not destroy the pest but aid and nurture it.

Ophthalmia

My rabbits are dying with a disease, the symptoms of wbicb first appear in tbeir eyes. Tbe lids are inflamed and half closed. Tbe bead bas a peculiar look as tbough it migbt be slightly swollen. They eat a little at first but finally refuse food altogetber and sit humped up with their ears flat on their backs and their sides drawn in. They last only about tbree days from the time tbey first show signs of sickness. The last day they breathe very fast. I bave lost half a dozen in about two weeks. I always separate the sick ones from the others as soon as I notice any sickness. So far the adult rabbits have been the only ones affected. For one meal I feed them bay and for the other a mash of alfalfa meal, beet pulp and rolled barley. I feed green alfalfa and carrots once in a wbile. Will you please tell me what is the cause and remedy of tbis disease?—Subscriber, San Luis Obispo.

Tbis is ophthalmia, a disease that affects tbe eyes. The cause is irritating gases from dirty hutches or dirty ground beneatb. Often tbe woodwork under hutch or ground below becomes filled with moisture and filtli and the gases arising cause the trouble. Often tbe butches though cleaned are disinfected with liquid tbat is too strong. Be sure butches and ground are clean and dry. Dry dust thrown into hutcb tbree or four times and swept out absorbs moisture and thus removes difficulty. Bathe eyes witb warm water. You can also use one-quarter ounce of wbite copperas to a pint of water, bathing eyes tbree or four times a day. Give your green feed regularly, three or four times a week.—W. D. White.

Unproductive Avocados

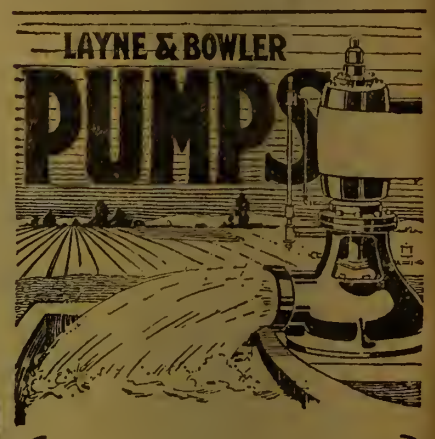
We have 40 of the prettiest avocado trees there are, I believe, anywhere, but as these trees were planted about five years ago and as yet have never blossomed, I am becoming rather anxious as to the final outcome. They are, I believe, mostly of the Taft variety, and while we have as a rule, enough frost to nip them a little every winter, tbey have gone ahead in growtb until they have become beautiful trees. Wbat I wish to find out is: Will these trees bear here; how they should be taken care of, water, fertilizer and so forth?—J. D. K., Redlands.

The original Taft tree did not fruit until 17 years of age and the budded stock seldom bears until seven or eight years old, though we have seen tbem bear at five years. We believe your trees are in good condition and will yield a crop in a year or two, possibly in 1920. Give them tbe same treatment accorded orange trees.

Citrus White Scale

I am sending some kind of bugs which I found on an orange tree. Please tell me what they are and what to do to get rid of them.—Subscriber, Long Beach.

These are the common white fluted or cottony cushion scale which promised in the later eighties to destroy California's citrus industry but which were later brought under control by the introduction from Australia of the vedalia. This beneficial insect has been generally scattered over the



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state and will possibly find your white scale within a reasonable length of time. However, the safest procedure is to write to Harry S. Smith, State Insectary, Sacramento, and ask for a colony of the vedalia. He may require in payment for same a colony of your white scale for pasturing these beneficial insects which he is propagating. In this connection we quote from a letter just received from the state department of agriculture as follows: Some weeks ago County Horticutural Commissioner Donald D Penny turned a swarm of ladybugs, vedalia cardinalis, loose in the trees in the Plaza at Watsonville, and they are now busy destroying the cottony cushion scale that has been infesting the trees. They work rapidly and are making great headway in relieving the trees of these parasites. They multiply rapidly also and there is a large number of them on the trees now.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Calf With Indigestion

We have a small heifer calf about four months old that does not chew her cud. She was lively when we bought her at one week old but is dull now. We give her twice a day two quarts of whole milk from a fresh cow, one quart skimmed milk, calf meal, middlings, some salt and all the water she wants. She lies down all day and sometimes will not come for her feed. Her eyes are bright but she does not seem to have much life. The passages from the bowels seem to have a lot of slime. She grows but is very poor and when she gets near a piece of metal will lick it or try to bite it. What would you advise?—Subscriber, Dobbins.

Your feed is altogether too rich for the calf. From your letter it seems that the calf is not getting any roughness. The bovine family must have something to make a cud. The middlings make a sticky, gummy mass, and of course the calf is sick. It does not need sweet milk at four months old. A gallon of sour milk twice a day would be all right, and by all means give it alfalfa and corn fodder if you can get it. If you want to add any more to the feed give a pint of rolled barley.

For medicine get one and one half pints of raw linseed oil, three ounces of turpentine and one dram of aloin. Mix and give half a teacup of the mixture once a day. Shake the bottle well to thoroughly mix the medicine. There will be six doses. If the medicine physics the calf then give less at a dose.

Pigs Caught Cold

I have some small pigs about three weeks old that are in good condition except they cough and sneeze. They also rub or scratch themselves on most parts of the body. Have dipped them in Kreso dip; one to 70 of water. What more would you advise doing for them?—Subscriber, Pinos Altos.

Give them a clean, dry place to sleep. Get of your druggist one pint of the syrup of cocillana compound and give each pig half a teaspoon of it twice a day. Give it with a spoon on the tongue. The Kreso dip should cure the itching. Sprinkle it around where they sleep also and remove any old straw or rotten wood where fleas or mites may breed.

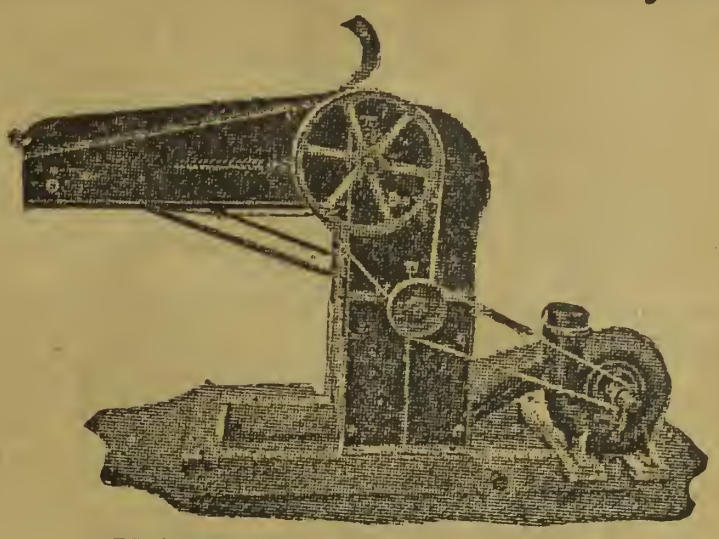
Cow With Laminitis

I have an eight year old Jersey cow that has very long hoofs and they seem hard and I think the feet are feverish. She is very lame when she gets up in the morning and stands like a foundered horse; that is, stretched out. When she first gets up she will raise one foot and then another and shake it as though something was tied to it that she wants to shake off. She improves later in the day. The hoofs and dewclaws seem too dry and grow out in ridges. Otherwise she seems to be in perfect health. What would you suggest doing for her?—Subscriber, Escondido.

Yes, it is laminitis, or founder, the same as horses have, but is not so common, partly because cows that have indigestion bad enough to cause founder usually die. The foot is made up of a bone the shape of the foot, that is covered by soft tissue in layers called the laminae, where the blood circulates and outside of that the hoof or horn of the foot. A bad case of indigestion is likely to be followed by inflamation of the laminae of the feet, but nobody knows why. The disease is called laminitis. This inflammation causes an abnormal growth of the hoof. It grows thick and wrinkled and binds too tight, causing lameness. There is little or no remedy for it. Soaking the feet in cold water gives temporary relief. Running in a wet pasture will also help. You can fatten her and dispose of her for beef. The trouble will not affect the meat in any way.

O. L. Raper, a prominent rancher and stockman of Glenn County, has recently purchased the entire herd of Shorthorns owned by Chas. Silva of Sacramento. The purchase included about 40 head of cows and heifers, and this addition to Raper's herd gives him the ownership of one of the largest herds of registered Shorthorns in the upper Sacramento Valley.

Notice to Stockmen and Dairymen



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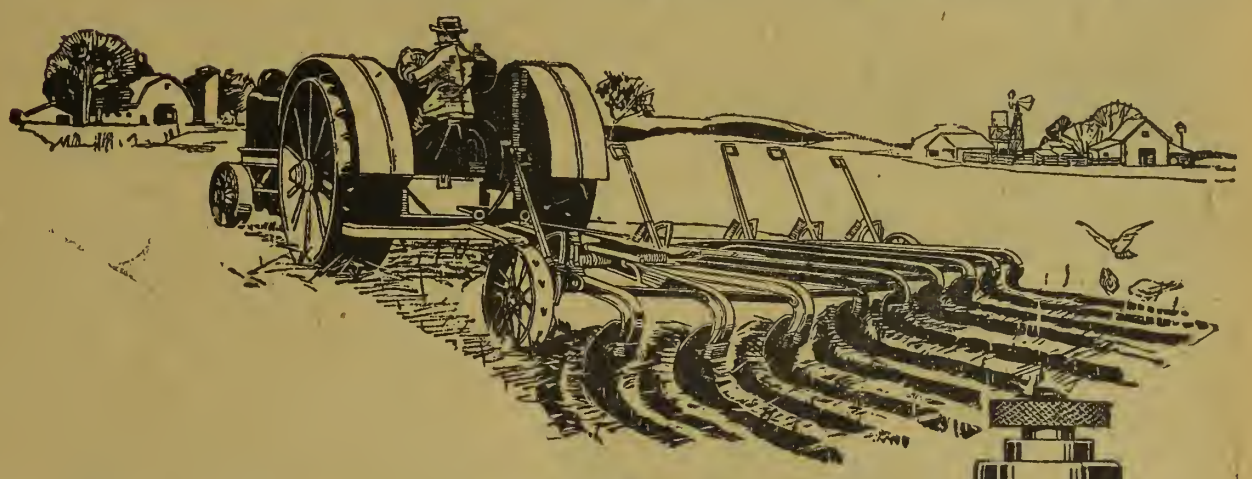

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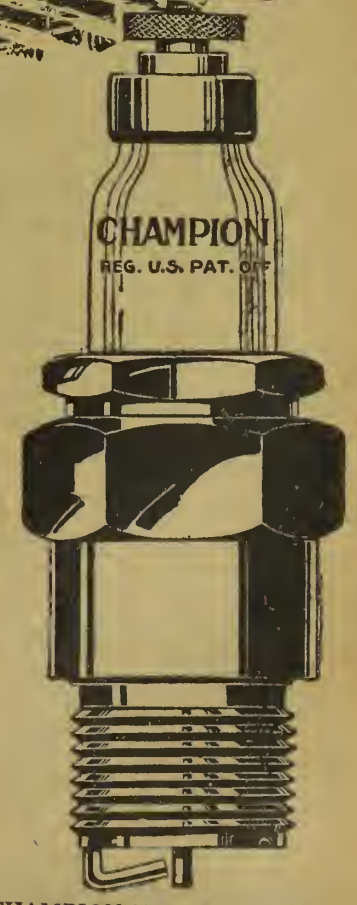

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New "Currant" Grape

The 7,000 cuttings of a dark variety of Corinth grape, known as "Panariti," which the department of agriculture distributed last spring from its experiment vineyards and from the vineyards of cooperating growers in California, have grown in splendid fashion the past season, reports show, and as a result much material in the way of cuttings and propagating stock of this variety will be available by the spring of 1921 for the extension of the currant industry in the United States.

The Panariti is a dark currant grape introduced by the department several years ago. Previous to the introduction and distribution of this sort, commercial production of currants in this country was not at all promising, in spite of the fact that the United States imports annually over 30,000,000 pounds of dried grapes made from such varieties. These grapes produce the currants of commerce used by housewives in cakes, puddings and other dishes.

The fact that a great market is already created for this product means much to the grape growers of the West. A product, however meritorious, with which the public is not familiar, requires a great deal of costly advertising and educational promotion to become fairly popular with the consumer. Nothing of this sort is needed so far as currants are concerned. The development of a new branch of the grape growing industry is of special interest to the vineyards of the Pacific Coast at this time when the industry is undergoing a radical readjustment.

Large production has been found to be dependent on ringing the trunk or bearing canes at the time the vines are in bloom. Unless this is done, the individual fruits in the cluster are not likely to be uniform in size and period of ripening. This early ripening grape is expected to produce currants of satisfactory quality in the bay counties where raisin production has not heretofore developed.

The name "Panariti," which has been applied to this variety, is taken from the name of one of the most famous grape growing districts in Greece where this sort was obtained. The Panariti is a distinct variety of the type of grapes used for the making of currants and should not be confused with other sorts of the currant type of grape previously introduced into the United States.

SHORTAGE OF SUGAR BEET SEED

The department of agriculture says that the sugar beet seed situation for 1921 is serious because of the limited production of sugar beet seed in Europe as compared with former years, because of the increased activity in beet sugar production in European countries, and because of the increased acreage planted to beets in this country in recent years. It is probable that several years will elapse before normal quantities of sugar beet seed will be produced in European countries. American growers, therefore, must depend to a considerable extent upon home grown sugar beet seed. There seems to be no good reason why this country should not produce its full requirement of sugar beet seed annually. The domestic production, now totaling millions of pounds, has demonstrated that seed of the highest quality may be produced in this country.

The present indications are that there is sufficient sugar beet seed, either imported or domestic, now in the hands of nearly all of the beet sugar companies in the United States to take care of the entire acreage to be planted in 1920, but that there is very little foreign seed now available for importation, and that the foreign production in the immediate future will be limited. Since sugar beet seed stored under normal conditions will retain its vitality for several years, it would be advisable for sugar companies to secure any seed of good quality now available and not more than two years old.

The domestic production is increasing rapidly. In 1918 about 6,000 acres of sugar beet seed were grown, while in 1919 upwards of 10,000 acres were planted to beet roots for seed. Unfortunately, drouth interfered with a normal production in some localities this past season, but the resulting reduction in yield was local and temporary and should not prevent or retard the efforts that are being made to produce in this country an adequate supply to meet the American requirement for 1921 and the years following.

In order to produce a crop of seed next year for the 1921 planting, it will be necessary to select the beet roots this fall, pit them so they will not freeze during the winter, and plant them as early as soil and weather conditions will permit next spring. Persons desiring full details in regard to growing sugar beet seed should address the Office of Sugar Plant Investigations, Bureau of Plant Industry, Department of Agriculture, Washington, D. C.

APPLE STANDARDIZATION WORK AT GRASS VALLEY

Commissioner Norton, writing to the state department of agriculture, comments on the workings of the standardization law as it affects apples.

"I have given instructions to my inspectors to cause no arrests, but to refuse shipment to all fruit that did not meet the requirements of the law, and I find that the plan works out all right. After a shipper has had to repack 50 or 100 boxes, he is a little careful about culling out defects the next time. I was short one inspector for a time and had to attend to four stations. A Chinaman offered 47 boxes of Bartletts for shipment, and upon inspection I found them about 40 per cent wormy. I told him to repack and throw out the wormy ones. He said, "Me send him San Flancisco." I told him that he could not sell them anywhere until he culled out the wormy ones. He dumped them all out on the floor of the freight house, removed the wrappers, and proceeded to repack with new wrappers. I told him in the best Chinese at my command that the proceeding was all wrong and that I would not let him ship them, but he only swore softly and kept at work. When he had finished he went to the freight office and told the agent to ship them to 'One Lung & Co., San Flancisco.' The agent refused to accept them without my inspection stamp, so he got an expressman to haul them to Chinatown, where he stacked them up, and they still remain there.

If you had been on the Arizona

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If you had been one of her proud sailors you would have left New York City in *January*, been at Guantanamo, Cuba, in *February*, gone ashore at Port of Spain, Trinidad, in *March* and stopped at Brest, France, in *April* to bring the President home. In *May* the Arizona swung at her anchor in the harbor of Smyrna, Turkey. In *June* she rested under the shadow of Gibraltar and in *July* she was back in New York harbor.

Her crew boasts that no millionaire tourist ever globe-trotted like this. There was one period of four weeks in which the crew saw the coasts of North America, South America, Europe, Asia and Africa.

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Apply at any recruiting station if you are over 17. There you will get full information. If you can't find the recruiting station, ask your Postmaster. He knows.

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"Each of my inspectors is provided with a rubber stamp bearing the number of the inspector, and every box of fruit shipped out of the county bears the imprint of this stamp. The rubber stamp is indispensable in this county as we have four stations without an agent, and the train men will not pick up a shipment of fruit that has not been stamped."

A RECORD OLIVE CROP

Olive growers of the Redlands section report a larger crop on their trees than there was last year. The average yield per acre of the fruit in this section has been half a ton, but this season the outlook is for 25 per cent more fruit. There are several hundred acres of bearing olive trees in San Bernardino County. Olives sold to the buyers last fall in the orchard at an average of $170 per ton. They never sold above $80 a ton up to about 1914, when the war shut out importations of Italian and Spanish olives from America.

OREGON GROWERS COOPERATE

The new cooperative fruit marketing association organized this summer in Oregon has taken the name Oregon Growers Cooperative Association. It has already signed up 10,000 acres of fruit bearing orchards and expects to have 20,000 before January 1, at which time it will begin active work. Headquarters is at Salem. R. C. Paulus is to be general manager.

Contracts made with the growers call for handling all agricultural or horticultural products of members for the five years 1920 to 1924, fresh, dried, canned or in by-products.

FRUIT GROWERS WILL CONVENE AT CHICO

The fifty-second Convention of California Fruit Growers and Farmers will be held in Chico, November 10-15. The program will be arranged and sessions conducted by the newly organized state department of agriculture. The Chico chamber of commerce is in charge of local arrangements and is cooperating with the department in plans for making the convention a big success.

FLORIDA'S CITRUS CROP LARGE

Estimates place the coming citrus crop at 10,000,000 boxes. This includes both oranges and grapefruit. The orange crop will be about normal, but there will be a great increase in grapefruit. Grapefruit shipments commenced about three weeks ago; oranges will not start till the last of October. The fruit is ripening very early.

APPLES PICKED GREEN

Owing to many complaints of immaturity from Eastern receivers of Gravensteins the state department of agriculture has determined to arrange next year an early inspection and fix date for first picking in order to obviate occasion for any such complaints another year.

WALNUTS

Walnuts are not running so large a proportion of No. 1's as last season, but the tonnage is much greater. Price named by the California Walnut Growers Association on No. 1's is 31½ cents as against 28 cents last year; on No. 2's, 26 cents as against 25 cents in 1918. Much of the new acreage coming into bearing is of budded nuts which are bringing 32 to 34 cents.

TUOLUMNE APPLE PACK

W. I. Newcomb, district apple inspector, is in Tuolumne County supervising the packing of this season's apple crop, which is reported to be unusually heavy. This is the first year that the apple growers of this county have used the state apple stamps, hence they are desirous of getting started right and producing a standardized product, which may win recognition for the delicious Tuolumne County apples in the markets of the state.

ELASTIC KNIT
UNDERWEAR

GUARANTEE—We guarantee Hanes Underwear absolutely—every thread, stitch and button. We guarantee to return your money or give you a new garment if any seam breaks.

Greatest underwear value in America at the price!

You can't get greater warmth or better workmanship or more comfort or *more actual wear* than every suit of Hanes winter weight underwear for Men and Boys surely will supply!

Hanes is made in winter weight Union Suits and Shirts and Drawers. Illustrated here is the staunchest, most comfortable, wear-resisting union suit ever sold at the price.

Hanes Union Suits have the most desirable and dependable features—unbreakable seams; reinforced, non-stretching buttonholes *that last the life of the garment;* tailored collarette that cannot gap; shape holding elastic shoulders; elastic knit wrists and ankles; pearl buttons sewed on to stay. And, a closed crotch *that stays closed!*

Hanes Shirts and Drawers have the same desirable quality; perfect workmanship and features. Drawers have the durable, snug-fitting 3-button sateen waistband.

Union Suits for Boys in quality, cozy warmth and workmanship are unsurpassed at the price! Reinforced at all buttonhole and strain points. In fact they duplicate Hanes Union Suits for men, with added fleeciness. Made in sizes from 2 to 16 years. Two to four year sizes have the drop seat.

If your dealer cannot supply "Hanes" write us direct.

P. H. Hanes Knitting Co., Winston-Salem, N. C.
New York Office, 366 Broadway

Warning to the Trade—Any garment offered as Hanes is a substitute unless it bears the "Hanes" label.

Uniformity

RED CROWN GASOLINE

You can depend on the uniform, high standard of Red Crown gasoline. Look for the Red Crown sign before you fill.

STANDARD OIL COMPANY
(California)

The Gasoline of Quality

You Want FERTILIZER That Gives the BEST Results
Figure cost per box of fruit, not cost per acre

We are manufacturers of highest grade fertilizers from BEST GRADE Agricultural Chemicals.

We solicit your inquiries for descriptive list and prices of our FAVORITE BRANDS for Oranges and Lemons. Also for Deciduous Trees and Truck Farms.

Our fertilizers are fully guaranteed. Station reports show it is not unusual for our fertilizers to run considerably over our guarantee.

RESULTS obtained with our fertilizer show that lowest prices never buy the best goods. Our prices are right, and cheapest by the crop test.

Agricultural Chemical Works
518 I. N. Van Nuys Building — Los Angeles, Calif.
Telephones: Pico 3619; Home 66022

California International Live Stock Show

California Building, Panama-Pacific Exposition Grounds

San Francisco, Cal.
November 1st to 8th

Presents the most complete showing of Cattle, both dairy and beef, Horses, Swine, Sheep, Goats, Poultry and Rabbits ever offered on the Pacific Coast.

The Dairy Division, with its competitive display of Dairy Products, and an extensive exhibit of modern dairy and barn appliances, makes this the "National Dairy Show of the West".

The Night Horse Show will feature some of the most celebrated track and road horses of the country, comprising the fullest program of horse events ever offered in the West, including spectacular and novelty performances by U. S. Cavalry Troops.

San Francisco, with the cooperation of the entire West, has provided a really big live stock attraction that is both educational and entertaining and an exposition that you cannot afford to miss.

Show Opens Saturday, November 1st.
Show Closes Saturday, November, 8th.

California International Live Stock Show Corporation
W. T. Sesnon, President Gordon H. True, Manager

Pure Hawaiian Cane Molasses

Pork Production

By actual test will increase pork production five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price.

Milk Production

One of our customers writes: "We are out of molasses and our cows are falling off in their milk badly, hence we would appreciate immediate shipment. Kindly ship us two tons more in addition."

We supply it in barrels or tank cars for shipment anywhere. Attend the California International Livestock Show, San Francisco, Nov. 1 to 8.

W. H. Young Company
Holbrook Bldg. San Francisco

Hauser's Digester Tankage
Gives Greatest Value for Least Money
It Makes Them Fat
Hauser Packing Co. Los Angeles

RIVERSIDE LIVE STOCK EXHIBIT

Continued from Page 509

3, Lookingbill on Raymond Lilly of St. Saviours.

Cow, 2 yrs. old and over—1, Lookingbill on Francis of Hidden Valley; 2, Hollow Hill Farm on Grace, King of H. H. F.; 3, Lookingbill on Imported Alta Ruby.

Heifer, senior yearling—1, Hollow Hill Farm on Den King of H. H. F.

Heifer, junior yearling—1, Hollow Hill Farm on Primrose King; 2, Lookingbill; 3, Hollow Hill Farm on Britiana Langdon of H. H. F.

Heifer, senior calf—Hollow Hill Farm on Fern, King of H. H. F.

Heifer, junior calf—1, Hollow Hill Farm on Mesha E., King of H. H. F.; 2, Hollow Hill Farm on Mora Langdon of H. H. F.

Senior champion bull—Hollow Hill Farm on Trip Fan of Brickleigh.

Junior champion bull—Hollow Hill Farm on Topper Langdon of H. H. F.

Junior champion cow—Hollow Hill Farm on Primrose.

Best bull—Hollow Hill Farm.

Best cow—Hollow Hill Farm.

Aged herd—Hollow Hill Farm.

Young herd—Hollow Hill Farm.

Calf herd—Hollow Hill Farm.

Four animals, either sex, get of one sire—1, Hollow Hill Farm on Cara Glenn and three others; 2, Hollow Hill Farm on King of H. H. F. and three others.

Two animals, either sex, get of one sire—1, Hollow Hill Farm; 2, Hollow Hill Farm.

Swine and other awards next week.

FIRST TULARE LIVE STOCK SHOW

The agricultural and business interests of Tulare County staged the first annual Tulare County Live Stock Show at Tulare, October 6-11. The show is really an outgrowth of a series of public sales held in Tulare during the past year and indicates the influence that public sales can exert on a community. Following several successful sales the breeders and business men of Tulare decided to build a sales pavilion. Funds were raised by popular subscription; ground was purchased and the pavilion built. The enthusiasm thus developed encouraged those interested to establish an annual show or fair and the one just held was the result.

Extensive and attractive exhibits of farm products were made by the communities of Earlimart, Lindsay, Alta, Corcoran, Pixley, and by the Tulare board of trade and the farm bureau.

The farm machinery exhibit occupied the whole of a large tent. Nearly every kind of implement and a large number of tractors were shown.

Commercial displays represented nearly all lines of industry of the city and community.

The showing of live stock was the outstanding feature of the fair and would have been a distinct credit to a fair much older and larger. The showing was made possible because Tulare has developed into one of the leading live stock centers of this state.

Seven herds of Holsteins, two of Jerseys and one of milking Shorthorns were shown in the dairy division. The swine department consisted of seven herds of Duroc-Jerseys and six herds of Poland-Chinas.

Merritt-Bowers Co., Tulare, and John Burrell of Hanford had all the entries in the horse and jack classes.

Holsteins

The showing made by the Holstein exhibitors was the best seen to date outside of the state fair. The classes were well filled and competition was keen for the three top places in nearly every class. H. E. Vogel of Fresno landed both the championships. Segis Alcartra De Kol Burke was champion bull and the good cow, Betsy Lamb Prilly was champion female. W. J. Higdon of Tulare won all the groups and the get of sire and produce of dam classes.

Exhibitors: H. E. Vogel, Fresno; W. J. Higdon, Tulare; R. C. Sturgeon, Tulare; R. F. Guerin, Tulare; Alex. Whaley, Tulare; A. Mitchell, Tulare; T. J. Gist & Sons, Tulare; L. W. Bardsley, Tulare.

Aged bulls—1, Vogel on Segis Alcartra De Kol Burke; 2, Higdon on King Korndyke Pontiac 20th; 3, Gist on King Sadie Vale Rose.

Two year olds—1, Bardsley on Prince Riverside Meade; 2, Guerin on King Korndyke Sadie Vale; 3, Sturgeon on Segis Pontiac Abbekerk.

Senior yearlings—1, Higdon on Model Bonnie Fobes De Kol; 2, Mitchell on King Abbekerk Johanna Segis.

Senior bull calves—1 and 2, Higdon on Model Bonnie Walker and Model Walker Bonnie; 3, Gist on Halbert Pontiac Scott.

Junior bull calves—1, Higdon; 2, Whaley on Madrigal Acme of Eldorado.

Aged cows—1, Vogel on Betsy Lamb

Duroc Jerseys
Bred and raised under right conditions. Correct as to type and size.
D. C. Cummins & Son
VISALIA, CALIF.

Hazelwood Farms

OFFER

60 Head From Their Herd

AT THE

Western Royal Stock Show, Union Stock Yards

SPOKANE, WASH.

Tuesday, November 4

All Hazelwood Quality. A Herd of World Wide Reputation, Production and Show Ring Quality.

ALL TUBERCULIN TESTED

Geo. A. Gue, Sales Manager JOHN L. SMITH, Owner

Gue and Cranke, Auctioneers

The Bell Cow for Profit

Jersey Cows don't eat merely to live, but to produce the richest quality of milk from the smallest amount of feed. They are the money-makers.

Any breeder will tell you that a dollar's worth of feed goes farther and yields a greater return when fed to a Jersey. Jersey Milk averages 5.87% butter fat. Jersey Milk, Jersey butter and Jersey cheese bring the biggest prices on the market.

JEREY

Breeders will tell you that the Jersey is the Pride-Prize-Profit breed. Let us tell you why the Jersey is *the* investment cow! Write for free literature about Jerseys.

THE AMERICAN JERSEY CATTLE CLUB
324-C West 23rd Street New York, N. Y.
An Institution for the benefit of every Jersey owner

JERSEYS

Jersey Bull
For Sale
A fine straight one, bred right, priced right
S. F. Williams
Chico, Cal.
Member Orland Jersey Cattle Club

Venadera Herd
Offers two Register of Merit cows. Bred to Aitama Interest and Jap's Perfection Owl. Due Dec. 13 and Jan. 1.
Guy. H. Miller
R. 1, Modesto, Cal.

All My Records
Are made under ordinary dairy conditions
The Farmers Cow is
The Jersey
Young Bulls For Sale
C. D. Hayworth
Modesto Cal.

Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
Modesto Cal.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R.R. Box 46 Tulare, Cal.

10 Jersey Bulls
We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.
Arden Dairy, Certified
El Monte, Cal.

get him with a ---
StephensTrap
—and ship his hide to DENVER.
Stephens will pay you the highest prices for all Western Furs — Coyotes, Skunks, Muskrats, Wild Cats and all others. DENVER is the Closest and Best Market on Earth for Western Trappers and Fur Shippers.
WRITE TODAY For Big Illustrated Trappers Guide FREE
Stephens of Denver is the largest exclusive buyer of Western Raw Furs in the world. Stephens charges you no commission—saves you 50c to $10 on express or parcel post and you get your money back 2 to 10 days quicker—because Denver is closer to your town than any other important Fur Center. Every shipment personally graded and priced by a member of the firm.
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Trappers Guide and Trap Catalog free

Priliy; 2, Higdon on Model Bonnie Echo; 3, Guerin on Allenvail Clothilde Walker.

Two year olds—1, Higdon on Fay Tritomia Hengerveld Walker; 2, Gist on Carnation Segis Colanthe; 3, Whaley on Jennie Veeman of Eldorado.

Junior yearling heifers—1 and 2, Higdon on Hengerveld De Kol Segis Cornucopia 2d and Daisy Creamcup Burke.

Senior yearling heifer—1 and 2, Higdon on Miss Bracelet Fobes Korndyke and Blanche Nudine Clothilde Walker.

Senior heifer calves—1, Higdon on Miss Hartog Walker; 2, Whaley on Eldorado Melba.

Junior heifer calves—1 and 2, Higdon on Pearl Segis Pontiac and Miss Hertinga Pontiac; 3, Sturgeon on Clothilde Pontiac Segis Burke.

Aged herd—1, Higdon; 2, Gist.

Young herd—1, Higdon; 2, Mitchell.

Calf herd—1, Higdon; 2, Whaley.

Get of sire—1 and 2, Higdon; 3, Whaley.

Produce of dam—1 and 2, Higdon; 3, Vogel.

Senior and grand champion bull—Vogel on Segis Alcartra De Kol Burke.

Senior and grand champion cow—Vogel on Betsy Lamb Prilly.

A. A. Jenkins of Tulare made a clean sweep of the Jersey classes with P. Lowson of Tulare wining two seconds. Chas. L. Weaver of Tulare made an attractive showing of milking Shorthorns.

P. B. Thornton made the awards in the dairy classes.

Duroc-Jerseys

Joe N. Chinowth, of Visalia, showed the champion Duroc-Jersey boar in Lord's Orion Cherry King V, that was first prize senior yearling at the state fair. R. C. Surgeon, of Tulare, had the champion sow, a senior yearling, Model Belle II.

Exhibitors: Joe N. Chinowth, Visalia; Fulgham and Sons, Visalia; J. P. Walker, Visalia; R. C. Sturgeon, Tulare; Valley Land Co., Tulare; A. P. Cope, Tulare; R. C. Clifford, Strathmore; C. E. Ellis, Tulare; Alex Whaley, Tulare.

Aged boar—1, Chinowth on Joe's Orion Cherry King 5th; 2, Fulgham on Col. Chief.

Senior yearlings—1, Chinowth on Lord's Orion Cherry King; 2, Valley Land Co. on Tagus Defender.

Junior yearling—1, Cope on Tagus Defender Beauty.

Senior boar pig—1, Chinowth on Al's Orion King; 2 and 3, Ellis.

Junior boar pig—1 and 2, Sturgeon; 3, Fulgham.

Aged sows—1, Walker on McCarty's Kentucky Beauty; 2, Whaley on Ohio Lady.

Senior yearlings—1 and 2, Sturgeon on Model Bell 2d and Model Bell 3d; 3, Gist on Katydid Sensation.

Junior yearlings—1 and 2, Walker on Pioneer Queen 3d and Beauty Maid 2d.

Senior sow pigs—1, Sturgeon on Valley Surprise; 2, Ellis on Defender Lady; 3, Walker.

Junior sow pigs—1, Fulgham on Royal Critic; 2, Chinowth on Orion Lady; 3, Clifford on Lady Uneeda Col.

Young herd—1, Chinowth.

Senior and grand champion boar—Chinowth on Lord's Orion Cherry King 5th.

Senior and grand champion sow—Sturgeon on Model Bell 2d.

Poland-Chinas

The California, a junior yearling son of Mc's Big Orange, owned by Shinn and Elliott, of Tulare, was champion Poland-China boar. Bob's Giantess, owned by Shinn was champion sow.

Exhibitors: H. C. Shinn, Tulare; A. J. Elliott, Tulare; R. F. Guerin, Tulare; Z. M. Losleben, Tulare; W. E. Martin; C. L. Weaver, Tulare.

Aged boar—1, Weaver on King of Golden Gate; 2, Losleben on Sunshine Chief.

Junior yearlings—1, Shinn and Elliott on The Californian; 2, Martin on California Big Bone Leader; 3, Guerin on Big Bone Leader of Sunnyside.

Senior boar pigs—1, Elliott on Tulare Gerstdale Jone; 2, Shinn on Fortuna Bob.

Junior boar pig—1, Guerin on Visalia Boy; 2, Elliott; 3, Shinn.

Aged sows—1 and 2, Shinn on Bob's Giantess and Bridges' Bobbie; 3, Guerin on Belle's Beauty.

Senior yearlings—1, Martin on Rose Royal; 2, Weaver on Big Maid; 3, Guerin on Major Giantess.

Junior yearlings—1, Shinn on Hancherdale Hula; 2, Elliott.

Senior sow pigs—1 and 2, Elliott; 3, Shinn.

Aged herd—1, Shinn; 2, Guerin.

Young herds—1 and 2, Elliott.

Senior and grand champion boar—Shinn and Elliott on The Californian.

Senior and grand champion sow—Shinn on Bob's Giantess.

Clayton N. Slocum, of Willows, made all the swine awards to the satisfaction of the exhibitors and the ringside.

OPENS TODAY!

LOS ANGELES
LIVE STOCK SHOW

The West's Greatest Live Stock Exposition

Exposition Park
October 18-26

FIVE BIG SHOWS IN ONE

Kennel Exhibit *Race Meeting*
Poultry Display
Society Horse Show
International Live Stock Exposition

150---Famous Horses in Racing Every Day---150

Many Amusements
Educating Entertaining

YOU'D BETTER NOT MISS IT!

LACTEIN
CONDENSED BUTTERMILK
FOR HOGS AND POULTRY

BUTTERMILK IS NATURE'S FOOD AND TONIC

Lactein is pure buttermilk as it comes from the churn, pasteurized, super-soured and condensed. It contains all the health giving food and tonic values of the original buttermilk without the useless bulk of water. On account of its high lactic acid content it will keep almost indefinitely.

Lactein is now recognized as one of the most necessary food digestive agents known for both growing hogs and poultry, due to the large amount of lactic acid it contains. The lactic acid aids digestion and assimilation, causing the hog or fowl to digest all the good from the grains given them to eat, and to eliminate all the dead and diseased matter from the digestive organs thereby promoting growth and preventing disease. Lactic acid is considered the best tonic, appetizer, liver and bowel regulator known for hogs and poultry.

Costs Less Than 2c. Per Gallon To Feed

One gallon of Lactein mixed with thirty gallons of water and fed with the usual grain feed will show greater gains than from feeding the grain alone, besides it will keep the hogs and poultry healthy and their appetites keen.

If your dealer does not handle Lactein, write us for our booklet and prices.

LACTEIN COMPANY 905 E STREET MODESTO, CALIF.

The Public Sale

By R. P. Royce

WITH the marked increase in public sales held in California during the past year, and in view of the certain extension of this form of selling as our live stock industry develops, and because this plan is comparatively new to this state, it may not be out of place to correct some of the misconceptions held by the public and to point out a few of the advantages and disadvantages of the public sale from the standpoint of the seller, the buyer, the community and the breed.

Since the earliest times the public sale has been used to secure distribution of products, and the fact that the plan continues in vogue is evidence that it is fundamentally sound and meets with general approval.

All values are predicated on supply and demand. The public sale simply serves to bring together the source of supply and the origin of demand. Therefore the values established can be considered as real and justified and perhaps truer values than can be established by any other means. Of course it is recognized that in connection with supply and demand values vary with the quality and degree of perfection of an article, but the public can be relied on to appraise quality for what it is worth.

The question was recently asked: "Do public sales serve a real purpose or are they occasions where breeders get together and connive to boost prices?"

The public sale is a legitimate method for disposing of live stock, and if it appears that breeders do attend and buy in competition with each other, thereby appearing to advance prices, the fact should be borne in mind that men interested in the same breed know values better than others not interested and their buying is nothing more than a business transaction and should serve as a guide to those who are not familiar with the breed.

Because a sale is public it does not necessarily follow that no opportunity is afforded for sharp practices, or, to put it more bluntly, crookedness. A sale is just the same as any other form of transaction and its honesty depends on the honesty of the seller. The writer believes that the majority of men are honest, and he is convinced that no class of men do business on a higher level than do live stock breeders. No business is so entirely dependent on the integrity of the individuals engaged in it as is the pure bred business, and the fact that so few scandals develop in the industry and that such scandals are so vigorously handled are proof positive that the business can boast of as clean a record as any. Undoubtedly crooked public sales of live stock do occur, but our readers can rest assured that they are few, and simply because a few shady sales have been put across the entire system should not be condemned and all sales looked upon with suspicion.

Aside from the distribution secured through it, the public sale has come to be recognized as one of the most important factors in extending the influence of better breeding stock. A sale properly advertised attracts buyers from a wide territory, men interested in the same breed and men about to enter the business. Ideas, observations, experiences and advice are exchanged, broader views are encouraged and the fact made plain that the interest of all is common and that one's own progress is limited to the progress of the breed as a whole.

Thus enthusiasm is stimulated, and enthusiasm is vital for advancement. By coming in contact with established breeders and sale attenders the new man is in a position to gain much information and to broaden his acquaintance. Furthermore, he can gain, as in no other way, perhaps, a correct knowledge of the bloodlines and type most sought and can note the values attached by men who know. He can therefore make more inteliigent selections.

Many breeders prefer to dispose of their surplus stock in one or more public sales a year for the reason that such a plan eliminates a lot of day to day detail work and permits them to transact the year's business in a short time. They get their receipts at once and therefore know how to handle their business a bit more definitely than otherwise. All details, such as testing, recording and transferring, can be done at one time. They feel that sales attract prospective buyers to the farm who would never visit the place otherwise, and they know that that is good publicity. They have confidence that the average crowd can be relied upon to set satisfactory values and they are willing to take the chance.

The principal disadvantage to the seller is the risk that he might not draw a representative crowd or that he will be unlucky with the weather man.

In addition to the advantages suggested above, the buyer always has the chance of picking bargains, and he can always set his own price, at least he does not have to take the seller's valuation. He has the opportunity of making numerous selections at one time rather than having to spend time and money in traveling from herd to herd. About the only real disadvantage, if indeed it can be called a disadvantage, to the buyer is the fact that he is forced to buy in competition.

Most pure bred sales are held with a definite guarantee as to health and breeding abilities of the animals offered, and such guarantees are binding and reliable. In a sale where animals are sold without any sort of guarantee, but just "as is," the buyer takes his chance and has no recourse of any kind except where fraud can be established.

The various breed record associations, the press and fellow breeders make it their business to see that sales are conducted in such a manner as to leave no ground for complaint, as it is recognized that crooked sales cast a shadow over all interests concerned and the business suffers accordingly.

There is one place in the sale business that is a source of occasional unfortunate transactions. There is no denying the fact that public sale averages tend to develop keen rivalry between the breeders, and there is always the danger that a few speculative men in an effort to establish records will resort to underhand practices to make these apparent records by means of "wash sales." In their desire to hang up a high record men will sometimes sell an animal at private treaty for a conservative amount and then put it through a sale and have the buyer run the price up—or resort to other unfair methods. Some men, usually those who have little experience in selling at auction, fear that the crowd will take advantage of the offering and not pay a fair price, and they set about to "protect" the sale by having a friend "bid in" any animal that does not bring a certain price. This practice is rather more rare now than a few years ago, because it has been proven time and time again that such methods do not pay in the long run and cast discredit on the seller. The man who attempts to "protect" his animals is not a good sport, and the fact that he does is evidence that he does not know actual values and has an exalted opinion of his productions. This fact can be established; given a representative crowd, they will pay all that an article is worth.

The public sale serves another purpose besides setting values on the seller's productions; it is perhaps the most important factor in establishing the general range of values for the entire breed. As pointed out above, the sale attracts other breeders and provides an opportunity for them to note the values placed by the public on the seller's stuff and to compare the different sale offerings with his own herd. He can therefore, arrive at a correct conclusion as to what prices he can expect.

100 REGISTERED HOLSTEINS 100

—AT PUBLIC AUCTION—

C. A. Miller Ranch, Ripon, Calif.

Thursday, October 30, 1919

In this sale C. A. MILLER will disperse his entire herd with the exception of two cows and a few heifer calves, about 50 head; GOTSHALL & MAGRUDER will contribute 30 head; H. A. De WOLF will contribute 20 head. The cattle are one of the best bred lots to be sold this season, and include a very large percentage of young animals from calves up to open and bred heifers, and young cows, mostly with A. R. O. records or from A. R. O. dams.

A. R. O. COWS WITH RECORDS UP TO OVER 28 LBS. BUTTER IN 7 DAYS.

HEIFERS FROM DAMS WITH RECORDS UP TO OVER 32 LBS. BUTTER IN 7 DAYS.

COWS AND HEIFERS BRED TO A 33 POUND SON OF KING MEAD OF RIVERSIDE.

COWS AND HEIFERS BRED TO A SON OF SIR SKYLARK ORMSBY HENGERVELD

DAUGHTERS OF SIR VEEMAN KORNDYKE PONTIAC, 30-POUND SON OF SIR VEEMAN HENGERVELD

DAUGHTERS OF PRINCE GELSCHE WALKER

DAUGHTERS AND SONS OF KING KORNDYKE PONTIAC 20TH, THE $6500 SON OF MISS VALLEY MEAD DE KOL WALKER

Also a fine selection of sons and daughters of King Segis Pontiac Jannek; It; Moorland King Mead Haskins; King Paul Korndyke Vale; Prince Gelsche Walker 11th; Prince Aralia Walker; Nudine Butter Boy; Sir Segis Walker; King Morco Alcartra; Colantha Sir Pontiac Aaggie; and others of most popular high record breeding.

IF YOU WANT SOME OF THE BEST BRED, YOUNG REGISTERED HOLSTEIN CATTLE TO BE OFFERED THIS SEASON, BE SURE TO ATTEND THIS SALE.

Every animal guaranteed to be a breeder; no animal tuberculin tested. Catalog free on request.

NOTE—Sale will be held on C. A. Miller Ranch, 6½ miles northwest of Ripon, 13 miles southwest of Stockton on French Camp Road. Tidewater & Southern cars from Stockton and Modesto will stop at ranch on sale day. Parties coming by Southern Pacific will be met at Ripon morning of sale.

Auctioneers:
Col. Ben. A. Rhoades, Los Angeles
Col. Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Calif.

Warranted to Give Satisfaction

Gombault's

Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of **Caustic Balsam** sold is warranted to give satisfaction. Price $1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

BANISH BLACKLEG

by using Parke, Davis & Co.'s scientifically prepared

Blackleg Vaccines

BLACKLEGOIDS

The Reliable Blackleg Vaccine in Pill Form.

25 MILLION SUCCESSFUL VACCINATIONS.

BLACKLEG AGGRESSIN

(Germ-Free Blackleg Vaccine)

A Natural Aggressin

WRITE FOR FREE INSTRUCTIVE BOOKLET ON BLACKLEG PREVENTION.

Animal Industry Department of

PARKE, DAVIS & CO.

DETROIT, MICH.

GUERNSEYS

196—368

These figures represent the average butter fat production of a grade herd in Minnesota before and after the use of a pure bred Guernsey bull. The improved herd brought the owner prosperity, — the original, only drudgery. Write to breeders for descriptions and prices and send for our free booklet, "The Grade Guernsey."

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THE AMERICAN GUERNSEY CATTLE CLUB
Box C 35 Peterboro N. H.

Some of the finest

GUERNSEYS

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Only Bull Calves For Sale

Hogs Cows Pigs

120 spring shoats, 100 weanling pigs, 30 brood sows, some registered Duroc-Jerseys. Some cross breeds—3 boars, 2 of them State Fair prize winners.

8 fine cows. Heavy milkers and rich in cream.

Ranch for rent, 55 acres alfalfa, 45 acres pasture. Abundance water, machinery.

J. A. BARKER Dixon, Calif., Box 82

America's Pioneer Dog Medicines

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DOG DISEASES

And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc., 118 West 31st Street, New York

Public sales can be made important affairs from a community standpoint. A well advertised sale will bring many visitors to a community who would probably never come except for the sale. There are many towns and villages in the great pure bred centers of the East that owe their entire claim to fame to the fact that they happen to be the seat of some breeder's operations. The writer could cite several instances where live stock sales furnished the stimulus for certain civic and municipal improvements. Many a country town has gained a better hotel because of the public sale.

Sales can be made to serve the community in other ways. Consignment and combination sales are dependent on cooperation, and once the cooperative spirit is given birth in a community the possibilities are unlimited. At Tulare, after a few sales had been held in the community, the business interests of the county recognized their value to the community, and in order to encourage the holding of more a modern sales and show pavilion was built through cooperative effort. Today there is not a county in the state where a finer or more progressive spirit is manifested than will be found in and around Tulare. Consignment sales have done much to develop the same spirit at Hanford and to give that town the reputation of being the Poland China center of the Coast.

Public sales are established institutions and are certain to play an important role in the development of the pure bred live stock industry of California. They can be made factors for good or bad, just to the extent that they enjoy the support and confidence of the breeders, the community and the buyers. In that respect the public sale is no whit different from any other institution. The vast majority of sales are clean and should be so regarded by the public.

VALUE OF LIVE STOCK SHOWS

By B. O. Cowan

The importance of pure bred live stock in the development of California is better understood now than at former times. This is clearly indicated by the large number of pure breds of the various breeds that have been brought into the state during recent years. The Cultivator and other agricultural and stock journals can render a valuable aid to farmers and ranchmen by impressing the importance of this industry of the state. Fairs and distinctive live stock shows are valuable educators. Aside from the substantial encouragement given to breeders by these exhibitions, they furnish the public with an excellent opportunity to see the value of improved blood in all classes of live stock. These exhibitions of prize winners have converted thousands of stockmen from the use of scrub sires. The long list of exhibitors at the October show in Los Angeles as given in the California Cultivator of October 4 was interesting information, but it would have been much more instructive and satisfactory if the entries had been arranged by breeds. Draft horses, dairy cattle, beef cattle and several breeds of hogs were enumerated in a veritable jumble and among these several breeds of goats are butted in to make confusion worse confounded. As an illustration, there are seven entries of goats and 13 of Duroc hogs, yet no two given consecutively but each one sandwiched with some other breed. This suggestion may seem a trivial criticism, but it certainly is in the interest of a more orderly arrangement of live stock information and greater satisfaction to readers.

GOAT BREEDERS ORGANIZE

The Central California Milk Goat Breeders' Association recently organized has issued a booklet containing constitution and by-laws of the association and list of officers. The officers are: Dr. Carl Wilson, president; Miss Irmagarde Richards, vice president; Edwin C. Voorhies, secretary-treasurer, Agriculture Hall, Berkeley. Executive committee: Dr. Wilson, Miss Richards, Edwin C. Voorhies, L. A. Bridinger, O. H. Freschlag.

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Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam: ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—
Milk 338 days 13,849.40
Butter 866.28
At six years—
Butter seven days 34.13
Milk 532.40
At five years—
Butter seven days 28.85

She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.

Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho

Anoakia Breeding Farm
Santa Anita, California

Anita M. Baldwin, Owner W. H. Taylor, Supt.

WHERE CAN YOU GET

a better young bull than Kounias Hengerveld Ormsby, whose dam made nearly 21 lbs. from 500 lbs. milk as 3 year old, and sired by a son of King Korndyke Hengerveld Ormsby with 56 A. R. O. daughters? Priced to sell quick.

Kounias Pure Bred Stock Farms

Modesto, Calif.

WHERE TO BUY YOUR

herd bull. We can be of material assistance to you in solving this question.

Sir Veeman Korndyke Pontiac

Our senior herd sire is a son of Sir Veeman Hengerveld, the sire of more 30 pound cows than any living sire. Five other sires bred for production. A good sire will increase your milk production. We have increased ours 100 per cent the past two years. We can sell you a young bull at a very reasonable price.

BURR FARM, Los Angeles, Calif.

Breeders of Registered Holsteins

Farm at E. 26th St. and Downey Road

Business Address, 8th St. and Towne Ave.

Young Holstein Bulls

Just a few by Sir Veeman Korndyke Pontiac. One of these young bulls will increase your profits. Better get yours before they are all gone. We will be pleased to write you full particulars.

R. F. GUERIN Visalia, Calif.

Breeder of Holsteins and Poland-Chinas

Grape Wild Farms

BERKSHIRES—GUERNSEYS

Grape Wild Rose, Grand Champion Sow Cal. State Fair, 1919

Grape Wild Farm Winnings at the 1919 Cal. State Fair

Premier Breeder.
Premier Exhibitor.
Senior Champion Sow.
Grand Champion Sow.
Junior Champion Boar.
Reserve Junior Champion Boar
1st Senior Yearling Boar.
1st Senior Boar Pig.
1st Junior Boar Pig.
1st Aged.
1st Aged Sow.
1st Senior Yearling Sow.
1st Young Herd.
1st Herd Bred by Exhibitor.
1st Pen Barrows.

Also

15 2nd and 3rd Ribbons.

Specials by Western Berkshire Congress on Animals bred by exhibitor. Sows, 1st, 2nd, 3rd, 4th and 5th.

Every animal in our Show Herd was of our own line of breeding, of Uniform Large Type.

Grape Wild Farms **Escalon, Cal.**

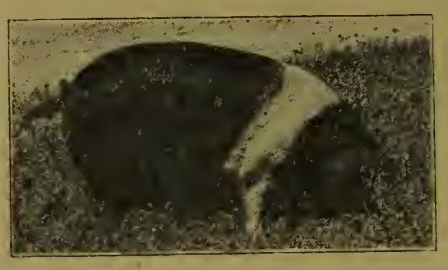
A. B. HUMPHREY

Attend the California International Live Stock Show
San Francisco, Nov. 1 to 8

GRAND CHAMPION HAMPSHIRES

Herd Sires...

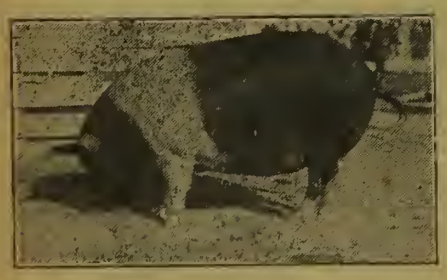
Goldmine, Prince and Honest Lad



Blood Lines of Gen. Tipton Again, Director, Pat Maloy, Sioux Queen and Hawkeye Lad

200 Pigs for season's trade. Bred sows and sows with litters for sale. Write or call.

Llano Vista Rancho, F. A. Langdon, Mgr; Perris, Calif.



Hampshire Headquarters

The big boar, The Harvester Again at head of herd. Home of Wavelet, the noted senior yearling, 1918; also Leading Wave 3d, Mary Pickford—both prize winners. See our show herd at Riverside and Los Angeles. Young stock for sale.

C. J. Gilbert **Lancaster, Calif.**

A Few Big, Roomy, Arch-backed Sows and Gilts of Choice Breeding For Sale—Bred For Fall Litters

O.U.R. Hampshire Swine

Weanling pigs of both sexes at very reasonable prices. Visit the ranch and see these animals.

Ortega-Underhill-Rancho THOS. T. DINSMORE, Mgr. Santa Barbara, Calif.

Three fine Junior Yearling Boars of unsurpassed breeding and high individual merit.

Butte County Herd

Of the right kind of Duroc-Jerseys. Butte's Golden Pet a 700 lb. sow, with the largest bone and best feet of any sow on the Coast. More in the herd of like calibre. Write me for young stock.

W. V. BENNETT **Nord, Calif.**

Select Registered Herefords at PUBLIC SALE

Friday, Nov. 7, San Francisco

The offering will consist of an especially selected lot of registered Hereford cows, heifers and bulls, that will surpass in average quality and in number of top attractions any previous offering of the breed in the West.

Among some of the good ones already selected are: CALIFORNIA PRIME DONALD, junior and grand champion bull at 1918 California State Fair; NEVADA LAD 8TH, first prize senior calf at 1918 California State Fair; ISIS 2ND and FAIRLAND VENETIA 2ND, first and second prize senior heifer calves at 1918 California State Fair, and they are both safe in calf to the $10,000.00 bull, BEAU BLANCHARD 76TH.

Sale Under Auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, Pres., Wells, Nev. J. A. Bunting, Sec., Mission San Jose, Cal.
Auctioneer: Col. Earl Gartin, Greensburg, Ind.
Sales Manager: C. L. Hughes, Sacramento, Cal.

Poland-China Farm

BLUE VALLEY MODEL HEADS HERD

Big Type in Blood Lines Big Type in Fact

We Breed For Size, Feeding Qualities and Prolificacy

Peake's well known breeding establishment, popularly known as Poland-China Farm, is located at the outskirts of the city of San Bernardino. The great boar Blue Valley Model is chief herd boar in service. He was junior champion boar at Riverside, 1919; and we also won the blue ribbon on Peake's Blue Valley Charm (boar under one year); also 1st on aged herd, 1st on young herd, and 1st on breeder's young herd—bred by exhibitor; and many lesser prizes.

We want you to write us your wants, if in the market for stuff that builds up the breed.

H. B. PEAKE, Manager **San Bernardino, Cal.**

Come to the KEY HERD of the Pacific Coast

for your Duroc-Jerseys. We have some exceptionally good buys just at present. Don't you want something bred to the grand champion boar

SENSATION WONDER 1st.

We have a magnificent lot of spring pigs of foundation herd quality. Write us for prices and description.

We satisfy our customers.

H. P. Slocum and Son
Willows, California

SAN JOAQUIN COUNTY REVIVES FAIR

After a lapse of 17 years San Joaquin County held a fair at the old fair grounds near Stockton, October 6-8, and while this year's show left much to be desired, it will undoubtedly serve to encourage wider efforts next year. In a community as rich and progressive as San Joaquin County there is certainly no reason why a splendid showing of agricultural, horticultural and live stock resources can not be made. If enthusiasm is developed and a comprehensive show established, it will mean much to the community. There is no enterprise that will serve to stimulate the use of better live stock as will a fair.

J. E. Thorp, of Lockeford, made the only showing of Jerseys. H. E. Cornwell and R. L. Holmes, of Modesto, and J. M. Campbell, of Escalon, made the principal exhibits of Holsteins. Cornwell's Ciruela Walker was champion female and Sir Johanna De Kol Rag Apple from the same herd was champion bull.

A. B. Humphrey, of Escalon, was the only exhibitor of Guernseys.

J. E. Thorp took all the championships in Duroc-Jerseys.

Geo. V. Beckman and Sons, of Lodi, J. F. Lehman, Lodi, and N. K. Horan, of Lockeford, had entries in the Poland-China classes. Beckman's aged boar, Matchless Big Bob of U. F., was senior and grand champion boar and their sow Belle's Beauty was given top rating among the sows. The Beckmans had the aged herd and Lehman was first with his young herd.

A. B. Humphrey made the only showing of Berkshires.

Professor C. W. Rubel, assistant state leader of farm advisers and Professor V. C. Bryant of the extension department served as live stock judges.

LOS ANGELES SHOW

Continued from Page 503

Sheep

All breeds: C. R. Doty.

Poultry.

All breeds: E. C. Branch, Lee Summit, Missouri.

Horses

Draft breeds: F. W. Wilson, Reno, Nevada. Light breeds: Chas. Green, Centralia, Missouri.

Goats

S. H. Bowman, Los Angeles.

The superintendents are: Beef and cattle, F. E. Lewis, II; dairy cattle, George M. Brown; horses and mules, Fred H. Bixby; swine, Charles H. Hill; sheep and goats, Harold Braly; poultry, rabbits and pigeons, Walter M. Ross.

CONVENTION OF CATTLEMEN

Of profound importance to the cattlemen of California is the coming convention to be held at the Palace Hotel, San Francisco, on Wednesday evening, November 5 and the mornings of Thursday and Friday, November 6 and 7.

Among the principal matters to come before the convention will be:

Discussion of the Kenyon bill, and a memorialization to congress by the cattlemen of California as to whether this measure is endorsed or opposed by them, or modified form of regulation suggested.

Consideration of the report of the marketing committee of the California Cattlemens Association, which will be of paramount interest to the breeders of cattle within this state.

Instructive and interesting addresses by men selected for their ability to treat on the subjects concerning which they have been asked to speak.

The opportunity for the cattlemen of the state to meet one another and voice their recommendations as to what may best be accomplished through their organized cooperation.

WHY, OF COURSE

"Pop," said the youthful seeker after knowledge, "why do words have roots?"

"I suppose, my son," answered the weary parent, "so the language can grow."

Durocs and Holsteins

Select Blood Lines — Highest Individuality

Inspection of Herds Solicited at all Times

These Herds Constitute an Educational Feature of our School

At the Southern California Fair at Riverside, 1919, our great bull, Dicter Spofford Korndyke Lad 5th was again made grand champion of the show, in strongest of competition. We likewise won 1st on senior bull calf, Republic Tuebie Korndyke; 1st on senior yearling heifer, Ida De Kol Pearl Lyons; 2nd on junior heifer calf, Victory Pontiac Maid; junior champion bull; 1st on aged herd; and two 3rds in classes.

Our young Durocs are the get of Cherry Chief 2d and California Great Wonder, and out of Golden Model dams.

Our methods are calculated to develop the best there is in these great breeds. Our equipment is up-to-date, and common sense methods are enforced. Write or call.

California George Junior Republic

CHINO, CALIFORNIA

R. A. CONDEE, Farm Superintendent

"Everything for the Dairy"

Mrs. M. G. Lima's Dairy, San Luis Obispo, De Laval Equipped

DE LAVAL
DEPENDABLE EQUIPMENT

De Laval Cream Separators
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Engines . . . *The Alpha*
Feed Cutters . . *The Acme*
Pumps . . *The Viking*
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A Special catalog on either of the above lines mailed upon request

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Information and prices on any of these items quoted upon request.

BOILERS
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WASH SINKS
MILK CAN CARTS
BABCOCK TESTERS
VATS OF ALL KINDS

De Laval Dairy Supply Co.

61 Beale Street — San Francisco

THIRD SALE OF SHORTHORNS

Under auspices of California Shorthorn Breeders' Association will be held on

Thursday, November 6th, 1919

at 1:30 P. M. Sharp

at California Building, Exposition Grounds

SAN FRANCISCO

In conjunction with the San Francisco Live Stock Show, Nov. 1st to 8th, 1919

30 Head of Cows and Heifers
10 Head Bulls

Unquestionably the greatest lot of Shorthorns ever offered at public sale in California.

For catalogue, address

California Shorthorn Breeders Association

222 Sharon Building, San Francisco

Auctioneer: Earl Gartin, Greensburg, Indiana

THIS IS YOUR SALE

POLAND-CHINAS

Tulare, Calif.

Tuesday, Oct. 21st

46 Bred Sows and Gilts

4 Young Boars

Every animal has been selected with the view of making this sale worthy the breed. The breeders are consigning animals of proven merit sired by as good boars as can be found in the West. They are bred to boars of equal merit. This sale will not disappoint you. We invite you to come.

Geo. W. Bell, Tulare, Auctioneer

Sale starts at 12.30 P.M. Lunch at 11.30 A.M.

R. F. Guerin, Pres. Tulare Hugh C. Shinn, Sec'y

Matchless Big Bob

has proven a sire of remarkable big type, growthy Poland-Chinas. Recent sales, both public and private, stamp him as one of the leading sires on the coast. Don't you want one of the "make good" kind? Write for description of what you desire.

Geo. V. Beckman & Sons, Lodi, Calif.

Big Model Fellow

The boar the breeders could not fault. At State Fair he was 1st senior yearling and reserve grand champion. As indication of his character notice his height, length, depth and smoothness — notice how he stands on four good feet. Pay particular attention to his hams. This is the kind of a boar we want.

J. F. McSwain, Merced, Calif.

Prize Winning Boars

Just a few—very few—left, of top young boars. I was the largest winner at State Fair. I am breeding Poland-Chinas that our best judges say are the right kind. Get one of these now. Let me describe one to you.

J. F. LEHMAN LODI, CALIF.

Come and See Them

Our Big Type Poland-Chinas are the real kind of hogs. If you can't come write for what you want. We have them if you want the prolific, quick growing, big type-kind.

Poland-China Ranch H. B. Peake Mgr. **San Bernardino, Calif.**

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

A New Herd of Shorthorns

One of the most notable additions to the pure bred live stock interests of this state is the establishment of a high class herd of Shorthorn cattle by Easton & Ward, owners of Blackhawk Ranch near Diablo, Contra Costa County.

For a good many years the name of Blackhawk has been familiar in live stock circles of the West because of the activity of the owners in Shire horse breeding. Originally the breeding plant was located at Burlingame, but a few years ago several thousand acres just at the foot of Mount Diablo were purchased and the owners set about developing a plant that would be one of the outstanding establishments of the West. During the comparatively short time in the new location a marvelous amount of work has been laid out and accomplished; the entire tract has been fenced; water has been developed; one of the most attractive country homes in the state built; and what is perhaps one of the most satisfactory barns in California has been erected. Much more remains to be done but the owners have a very definite notion of what they want and a determination to see the plan to completion.

Blackhawk Ranch is an ideal stock ranch, combining as it does plenty of splendid range and enough tillable land to provide grain and other cultivated crops. Having such a property it was a foregone conclusion that cattle would be handled in connection with the horses maintained. Incidentally, it is of interest to state that this firm has an abiding and well founded faith in the future of draft horse production. The owners are not blind to the fact that the demand for horses has been light the past few years and that breeding operations have fallen to an alarming point, but they are continuing to breed all the mares and they are certain to reap the results of this foresight.

At present the Blackhawk Shires represent a stronger collection than was ever in the barns, and practically every animal has been bred and developed by themselves. The string that is being fitted for the fall shows is of a quality to justify the prediction that they would give a good account if seen in any show. At least two three-year-old stallions, one two-year-old stallion, and the famous black five-year-old mare Blackhawk Chessie will make the circuit. Blackhawk Chessie has developed wonderfully since shown in her three-year-old form. She is now a mare of massive proportions, yet retains her sweetness and style. Her way of going will be the despair of mares attempting to take her measure. There is a possibility that she may be seen in the Eastern shows—none of which will be too exclusive for her to be at home. If one has the idea that horse values have depreciated he will be quite disillusioned by asking a price on Chessie.

But it is the Shorthorns that claim our attention at this time. Mr. Ward and Manager Lovell investigated the problem very thoroughly for several years and reached the conclusion that Shorthorns were best adapted to their conditions and would fit in to their plans. Accordingly, they spent a good deal of time studying the trend of times as regards the breed and decided to establish a herd of high class individuals combining modern type and popular Scotch breeding. Two months were spent in visiting the leading herds of the Middle West, and they returned with about 40 head. Space does not permit mentioning all, but a few can be referred to. For a herd bull the three-year-old Roan Radium was selected. This bull, a beautiful roan, was bred by Ogden & Son of Marysville, Missouri. He was sired by Radium, whose three daughters sold in the recent Bellows Bros.' sale for $4,266. His dam was Banker's Sweetheart, a Buttercup sired by Diamond Goods. Roan Radium is a very compact, masculine fronted bull, level of lines, with a thick covering of smooth, mellow flesh. Calves by him indicate that he is a prepotent sire.

Among the females are a number of outstanding matrons. One, a sweet-headed, thick-fleshed, dark roan, daughter of Village Favorite, a grandson of Villager, and out of a Mysie dam by Golden Crest, is a particularly pleasing type. The light roan, Violet Village Belle, by Village Knight and out of Violet's Pride, by Violet's Favorite, is the sort that attracts attention in any herd — very broody, thick and smooth. Another light roan by the same sire and out of a Victoria dam is regarded highly. Clara 10th, a white daughter of Village Knight and out of Linwood Clara 4th, has those qualities real breeders look for in herd matrons. Red Lady 39th, by Sultan Royal, a son of Whitehall Sultan and from a Roan Lady dam, has proven her ability as a producer. Roan Lady 37th, by Village Knight, from the same dam as Red Lady 39th, is much the same valuable type. Manager Lovell thinks a great deal of Silver Butterfly 2d, a daughter of Gainford Champion and out of a Butterfly dam. Gainford Champion is one of the leading sires of the breed.

It is not planned to have out a show herd this year, but with such a foundation it can be expected that the Blackhawk Shorthorns will make their appearance by another year. Messrs. Easton and Ward contemplate building up the herd until it numbers between 100 and 150 head of breeding cows.

Village Blossom

One of the matrons in the Blackhawk herd of Easton & Ward.

ARCATA COW TESTING

The value of cow testing is shown in the report of productions made by the cows in the Arcata Cow Testing Association. This is one of the oldest associations in the state. The report for July shows 56 cows making better than 60 pounds butter fat per month. The top notcher in the entire association was in the herd of W. W. Turner, whose Jersey cow, No. 24, produced 1581 pounds of milk with a test of 5.2 or a total of 82.1 pounds fat. Mr. Turner had four other cows making 63.2 pounds of fat or better. Another herd with a remarkable record was

CAUTION

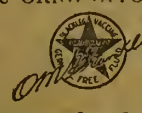
Do Not Be Deceived

There is only one GENUINE O. M. FRANKLIN Blackleg Aggressin (commonly called Vaccine).

Beware of imitations. You cannot afford to have anyone experiment on your animals.

Accurate use of the GENUINE O. M. FRANKLIN Blackleg Vaccine positively protects against Blackleg.

Be absolutely safe in using the ORIGINAL and GENUINE manufactured by THE KANSAS BLACKLEG SERUM CO., under the direct supervision of Dr. O. M. Franklin the ORIGINATOR.

This Seal  on Every Bottle

The Kansas Blackleg Serum Company

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AUCTIONEER
Sacramento
(1004 5th Street)

My services are available to all who plan to sell live stock, farm equipment or real estate and who want the high dollar. Pure bred live stock sales a specialty. Terms reasonable. Write or wire for dates.

The Leading Live Stock Auctioneers.

Col. Ben A. Rhoades
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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References. The leading breeders in the state. Write or wire for dates and terms.

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1501-3-5 South Main St.
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Brighton Farm Herds

Registered Shorthorns
and
Berkshires---Both Sexes

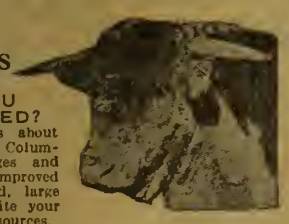
H. L. & E. H. Murphy
Perkins, Cal.

California Breeders

have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales

CALIFORNIA BREEDERS SALES & PEDIGREE CO.,
C. L. HUGHES, Sales Mgr. Sacramento, Cal.

Cattle Ranges



ARE YOU INTERESTED?
In knowing facts about Central British Columbia Cattle Ranges and mixed farming, improved and non-improved, large and small? Write your requirements, resources.

J. H. BROWNLEE, Canadian Land Surveyor, Peoples Savings Bank Bldg.
Phone Main 2335J Sacramento

PIPE

100,000 FEET OF NEW AND SECOND-HAND PIPE AND CASING

PIPE—Practically all sizes from ⅛ to 15 inches.
CASING—Practically all sizes from 8 to 14 inches.
All pipe and casings have good threads and couplings on each joint.
RIVETED PIPE — 4 to 12 inches, as good as new. We also carry valves and fittings.
MAIL ORDERS GIVEN PROMPT ATTENTION
Write, phone or wire for quotations.

Adams Pipe Works
Bay and Mateo Sts. *Los Angeles, Cal.*

that of S. V. Foster, Jr., whose top notch cow was a Jersey, No. 47. She produced 1354 pounds milk which tested six per cent or a total for the month of 81.2 pounds fat. In the same herd were 16 other cows going above the 60 pound mark. These 17 cows would require only two months to produce enough butter fat to equal the average dairy cow the United States over for 12 months. Such cows are profit makers. In the same association is the herd of Martin Pontoni, who had seven cows producing 62.3 pounds fat or better. Another was that of E. Biondini with five cows producing 62 pounds fat or better. R. L. Chaffey had four cows with 62.06 pounds or better. Geo. McCready had three cows with 62 pounds or better. Other dairies with two cows all running about 62 pounds were those of James Kirkpatrick, Peter Iversen and James Vierria. Dairies of one cow better than 62 pounds were those of Martin Diaz, William Peterson, C. W. Thompson, Frank Rieberie, Axel Kijer and A. N. Hunt. The reports for the same association for August are not so good as there were not so many cows in the high producing class. In fact, there were only 27 or less than half of the earlier month. One cow, however, in the high producing class was in the dairy of D. J. Turner, whose Jersey (Bess) produced 83 pounds fat from 1664 pounds milk.

DUROC SALE EVENT

By T. J. Hitte

A stirring event in Southern California Duroc-Jersey circles is that to be staged by the Ireland Ranch for January 1. This is the date claimed by Dr. Creamer for public sale of bred sows to be held at the ranch at Owensmouth. Not a thing is to be left undone that can go to make the offering a real attraction for ranchers and Duroc fanciers. The Ireland Ranch Durocs are noted for size, smoothness, quality, prolificacy and, in fact, for everything that goes to the make-up of an ideal up-to-date type of hog. The 1918 record in the show ring amply shows this fact. The blood of the big champion Cherry Volunteer II will be much in evidence. A foundation sow here of no small note is Cardinal Lady C., dam of last year's winners, among them the champion barrow, Buzz, that made history for the breed at both Riverside and Los Angeles. Three big sows of the right type will be seen at these shows this year; Ireland's Maid, Ireland's Model Lady and Reformer Queen. An outstanding senior boar pig is to be seen also in the Ireland Ranch show herd, by Cherry Volunteer II, and out of Ireland's Maid. The show contingent will consist of eight head.

FEED COST OF RAISING HEIFERS

The importance of providing cheap feed for growing heifers and practicing thorough culling is brought out by the results of feeding experiments recently completed by the dairy division, United States department of agriculture. In these experiments groups of calves were fed from birth to one year and two years of age and a record kept of all feed consumed.

In one experiment 11 heifer calves were raised to the age of one year. The amount of feed consumed by each calf was as follows: Hay, 571.8 pounds; grain, 885.5 pounds; silage, 3,693.1 pounds; milk, 110 pounds; skim milk, 2,414 pounds. Estimating the hay at $30 per ton, grain at $60, and silage at $8 per ton, milk at four cents and skim milk at three-fourths cents per pound, the cost of raising each heifer to one year of age was $72.42.

Five of the calves from the first experiment were then fed for one more year. During this second year each calf consumed on the average 1,117.8 pounds of hay, 1,221.6 pounds of grain, 8,031 pounds of silage. Using the same figures for computing the cost of the feeds consumed during this second year, the total cost of raising a heifer from birth until two years of age was $157.96. These figures emphasize the necessity of providing cheap feed for heifers such as pasture and silage and bring out the importance of caretully culling the heifers to avoid raising those which will prove to be inferior cows.

Mossdale Farm

JERSEY CATTLE **DUROC-JERSEY SWINE**

We believe that the test of a sire lies in his ability to sire uniform, prize winning offspring, and we are proud of the record of Mossdale sires.

Jerseys---

Our herd bull, JOLLY SENATOR RALEIGH, was never defeated in class as a yearling or as a two-year-old and this year he was grand champion, as a three-year-old, at the California State Fair, the Kings County Fair and the Fresno Fair. And at each of those shows his get won the get of sire class.

Duroc-Jerseys---

The record of Mossdale Durocs at recent fairs is proof of their merit. Freddy You'll Do, our herd boar, sired the winning get of sire group at the above fairs.

We can furnish young things of either breed at prices that are attractive. Write us your wants.

See Mossdale Exhibits at Los Angeles and San Francisco

J. E. Thorpe **Mossdale Farm** **Lockeford, Calif.**

Economy Stock Powder
will keep your pigs in condition by acting on the liver, kidneys and blood. Will keep the stomach sweet, expel worms, aid digestion and prevent white scours and thumps.
Send for a free sample and our booklet "Economize Your Farm."

Economy Hog and Cattle Powder Co.
1016 Hearst Building San Francisco

California Wonder

KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets

Jacks and Jennets for sale at all times. Come and see them.

John Burrell
R. F. D. B. Box 74
Hanford, Kings County, Cal.

M. BASSETT, Hanford Calif.

Breeder Big Type Poland-Chinas

A carefully selected lot of bred sows and gilts will be offered at public sale October 7th.

The Pacific Herd of Big Type Polands.

Herd sire, King Hadley and A Wonder blood lines.
A few classy 6 months old boars for sale.
Satisfaction or money refunded. Prices reasonable.

Mrs. C. H. Andrews
Route 1, Box 46. Modesto, Calif.

KEEPING AHEAD

That's my motto. The kind of Poland-Chinas bred by me is what's keeping me ahead. SMOOTH KING, by Kansas King, a boar of quality, has recently been added to my herd. My kind are your kind. Write,

Eugene Miner **Lodi, Calif.**

BASSETT, CRAWSHAW AND ROSS SALE

By B. S. Bennett

The Poland-China sale of Bassett, Crawshaw and Ross was held in Hanford, October 7. While the attendance was not as large as is usually the case when sales are held in Hanford, it was demonstrated that it does not require a large attendance to hold a successful sale. Fifty-six bred sows and gilts were sold for an average of $151.35, and five young boars for $105. The top of the sale was the gilt Model Wonder by Model Fellow, from the Bassett consignment, J. F. McSwain, of Merced, being the purchaser, at $360. Mrs. C. H. Sears, of Bakersfield, selected a gilt by Rossmead Bob from the Ross consignment at $340 and H. D. McCune, of Lemoore, selected from the Crawshaw consignment Gerst Juno II. by Cal. Gerstdale, at $180. Ord L. Leachman, of Sacramento, was the auctioneer. Following is detailed report of the sale:

Bassett Consignment

1—C. T. Starr, Hanford, $180.
2—J. F. McSwain, Merced, $360.
3—H. K. Dickson, Bakersfield, $120.
4—J. F. McSwain, $130.
6—J. P. Galeener, Modesto, $130.
7—J. F. McSwain, $125.
8—J. H. Cook, Paradise, $170.
9—J. F. McSwain, $115.
10—Ellyn Kent, Bakersfield, $160.
11—Les McCracken, Ripon, $140.
12—H. H. Rowland, Shafter, $140.
13—Orval Filmore, Bakersfield, $130.
14—J. F. McSwain, $125.
15—J. F. McSwain, $140.
16—J. P. Galeener, $135.
17—Z. M. Dickey, Dinuba, $95.
18—J. F. McSwain, $115.
19—J. F. McSwain, $110.
20—J. F. McSwain, $190.
21—Les McCracken, $165.
22—M. Delfino, Bakersfield, $145.
23—J. F. McSwain, $115.
24—J. F. McSwain, $110.
25—J. F. McSwain, $95.
26—Les McCracken, $95.
31—M. Delfino, $155.
32—H. Stephens, Bakersfield, $155.
35—Cora Dinzer, Lemoore, $115.
36—Les McCracken, $100.
38—Z. W. Dickey, $115.
39—M. R. Vierra, Hanford, $60.
40—Les McCracken, $50.
41—C. T. Starr, $140.

Crawshaw Consignment

42—C. A. Vaughn, Hanford, $120.
43—Les McCracken, $105.
44—E. G. Myers, Riverdale, $110.
45—Z. M. Dickey, $160.
46—Z. M. Dickey, $100.
47—W. E. Mullen, Shafter, $135.
48—Chas McNeil, Fresno, $135.
49—W. E. Martin, Tulare, $165.
50—Chas McNeil, $140.
51—Wm. Bernstein, Hanford, $125.
52—W. D. Trewhitt, Hanford, $140.
53—Les McCracken, $120.
54—Les McCracken, $120.
55—H. K. Dickson, $135.
56—Glenn Davis, Bakersfield, $125.
57—Frank Johnson, Hanford, $145.
58—N. Jinnett, Bakersfield, $135.
59—H. D. McCune, Lemoore, $180.
60—R. S. Willis, Lemorre, $165.
61—R. S. Willis, $165.

Ross Consignment

63—C. L. Newport, Hanford, $150.
64—A. Buckland & Son, Fresno, $325.
65—Z. M. Dickey, $185.
66—J. F. McSwain, $210.
67—Mrs. C. H. Sears, Bakersfield, $340.
68—Les McCracken, $150.
70—Les McCracken, $150.
71—J. F. McSwain, $330.

H. P. Slocum and Son, prominent breeders of Duroc-Jersey swine have recently purchased 400 acres of land near Arbors, Glenn County, and they expect to transfer their breeding operations to their new location at an early date. Clayton Slocum reports a very heavy demand for pure bred Durocs.

WESTERN BERKSHIRE CONGRESS CONSIGNMENT SALE

Los Angeles Live Stock Show

Wednesday October 22

30 Carefully Selected Bred Sows, Gilts and Boars

Breed Berkshires for Profit

Berkshires are the oldest improved breed of swine—that is the reason that Berkshires are the most popular and profitable. Berkshires have won more contests in competition with other breeds than any one breed. Berkshire barrows are usually champion barrows. Berkshires are economical feeders, mature early, are prolific, are good mothers and kill out very high. They are the most perfect hog. They are the hog of no regret.

An Opportunity

The purpose of this sale is to give Southern California hog raisers an opportunity to test out the above facts and the offering has been carefully selected from a number of the best herds on the Pacific Coast. The sale will therefore furnish an opportunity for breeders and beginners to select breeding material that is of foundation character.

This Offering

Will consist of 30 head of bred sows, bred gilts and a few top boars. Included in the lot are a number of show ring winners and all represent the highest type Berkshires being produced. Every sow or gilt to be sold is guaranteed to be a breeder. The boars are particularly attractive and are good enough to go into the best herds. Every animal immune to cholera.

Remember: the Berkshire Hog Is the Standard Hog

For catalogs and any further information, address the secretary.

WESTERN BERKSHIRE CONGRESS

A. B. HUMPHREY, President, Escalon, Cal. FRANK B. ANDERSON, Secretary, Box 724, Sacramento, Cal.
COL. ORD L. LEACHMAN, Auctioneer

A BULL is known by his BREEDING and his GET

Senior Herd Sire

King Pontiac Netherland Segis 3rd

His First Ten Daughters to Freshen

Made in seven days 18 pounds of butter from 54.4 pounds of milk at the average age of 2 years, 3 months, 3 days. Having inherited great production blood his daughters are proving his ability to transmit these desirable qualities. One of his sons will increase your production.

See Him and His Get at the Los Angeles Live Stock Show

ROSAMAINES RANCH STALDER BROS., Owners Riverside, California

THE SAN FRANCISCO SHOW

By David J. Stollery

Thoughtful cattlemen, as well as the active representatives of other branches of live stock, have for years past been exerting their efforts toward making possible a San Francisco live stock show, and the culmination of their hopes is at hand.

The educational advantages arising out of a truly representative live stock show are beyond description, and no live stock breeder can visit such a show as is contemplated for San Francisco during the first week in November without receiving inspiration, and to the live stock producer, inspiration spells profit.

The business men of San Francisco have gone to both trouble and expense in making possible this first exhibition, realizing that on the agricultural industry of California the prosperity of the state depends. The authorities have kindly donated the use of the California Building, Exposition Grounds, San Francisco, for the show, a truly ideal location for this "Show of Shows." It may be necessary to make other arrangements for a place to hold future shows as the California Building is but a temporary structure, so that it behooves the cattlemen to give support to the show by their attendance in order that its perpetuation may be deemed worth while as a result of the support accorded it.

NATIONAL SWINE SHOW CHAMPIONS

At the National Swine Show held at Des Moines, Iowa, September 29-October 4 championships were awarded as follows in the principal breeds:

Poland-Chinas: Senior champion boar—Bloomendaal Bros., Orange City, Iowa, on The Pilot. Junior champion—E. C. Caverly and Sons, Toulon, Illinois, on Nobility. Grand champion—The Pilot. Senior champion sow—Meyer Bros. and Parkhart, Hooper, Nebraska, on Miss Bob Wonder. Junior champion—Winn and Moore, Randolph, Missouri, on Big Model 2d. Grand champion—Miss Bob Wonder.

Duroc-Jerscys: Senior champion boar—Ed Kern, Stanton, Nebraska, on Great Orion Sensation. Junior champion — Clyde Lorentz, Leonard, Missouri, on Major Sensation. Senior champion sow—W. M. Putman, Tecumseh, Nebraska, on Queen of Pathfinders. Junior champion sow — Ira Jackson, Tippecanoe City, Ohio, on Walt's Orion Lady 14th. Grand champion sow—Queen of Pathfinders.

Berkshires: Senior champion boar—Piping Brook Farm, Greenwich, Connecticut, on Fairview Ruler. Junior champion—Rodgers Bros., Harrodsburg, Kentucky, on Matchless Lee's Double. Grand champion—Fairview Ruler. Senior champion sow—Piping Brook Farm on Lady Premier 208th. Junior champion—Rodgers Bros. on Royal Matchless Lady. Grand champion—Lady Premier 208th.

Chester Whites: Senior champion boar—B. M. Boyer and Sons, Farmington, Iowa, on Prince Big Bone. Junior champion—C. F. Brown, Webster City, Iowa, on King Anak. Grand champion — Prince Big Bone. Senior champion sow—Raymond Brown, Dunlap, Iowa, on Big Nellie 2d. Junior champion—Raymond Brown on Perfection 2d. Grand champion — Big Nellie 2d.

Hampshires: Senior champion boar—Keystone Farms, Marion, Ohio, on Messenger All Over. Junior champion—Willie Essig, Tipton, Indiana, on Essig's Model. Grand champion—Messenger All Over. Senior champion sow—Willie Essig on Lady Big Bone. Junior champion — Wickfield Farms, Cantrill, Iowa, on Miss Liberator. Grand champion—Lady Big Bone.

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

WINSOR RANCH
Duroc-Jersey Hogs

We Can Furnish You With a Real Herd Boar or a Foundation Brood Sow

The largest boar of the Orion Cherry King family
WINSOR'S GIANT ORION
The largest boar on the Pacific coast—82 inches from between eyes to root of tail. A real giant and absolutely smooth. Sired by Orion Cherry King Jr.

Model Defender Lady, Grand Champion Sow Cal. State Fair, 1919

GREAT SENSATION 3rd
A fall boar without an equal.
Sire----Great Sensation.
Dam---Uneeda Lady, the $5000.00 sow.

At the 1919 California State Fair we won Grand Champion sow, senior and reserve senior champion, first aged and first senior yearling sows, 2nd and 4th under year sows, 2nd senior yearling boar, 2nd produce of dam, 2nd young herd, 2nd aged herd.

We are breeding the largest sows in the west to our two giant boars. These sows are sired by Great Model, Great Orion Sensation, Great Sensation, Orion Sensation, Great Wonder, Great Wonder I Am, Pathfinder Orion Fancy King, Grand Model, Cherry Chief, etc.

Winsor Ranch - Bonita - San Diego Co. - Cal.
Morris C. Allen, Ranch Manager
Address R. K. WALKER, Mgr. Hog Dept.

Sir Veeman Korndyke Pontiac, 156051

BUY BULL WHILE YOUNG

The oldest bull calf at Burr Farm today is under 6 months. We have plan that sells them young. Four bull calves by Sir Veeman Korndyke Pontiac, and out of tested dams, now offered.

One from a 22.93 lb. three year old, milked up to 87 lbs. per day; 2000 pounds 30 days.

Two from a 16.60 lb. two year old, that milked 62 lbs. per day; 1800 lbs. 30 days.

Three from a two year old with 14.97 lbs. milk in seven days.

Four from an 18.98 lb. cow.

Write us now about our young bull prospects.

Burr Farm Registered Holsteins
Bred for Milk and Butter Production

The leading sire in service is the great bull, Sir Veeman Korndyke Pontiac, who has 3 A. R. O. adhered to of making use of the highest successes of other breeders of the recent past; hence the many high milk and butter records accredited to this herd.

This herd is directly connected up with the commercial milk supply for the city of Los Angeles.

The owners have been members of the Cow Testing Association since its inception. Eventually every cow in the herd will have her yearly record.

Great Sire at Head of Herd

The leading sire in service is the great bull, Sire Veeman Korndyke Pontiac, who has 3 A. R. O. daughters—one over 20 pounds. His sire is Sir Veeman Hengerveld; his dam, Beatrice Korndyke Pontiac Veeman, with a 7 day record of 30.13 lbs butter fat.

Young bulls sired by Veeman Korndyke Pontiac are now in use from Humboldt County to Imperial County—the entire length of the state.

BURR FARM is Located at E. 26th Street and Downey Road, Los Angeles
GEORGE M. BROWN, Manager

The Next Wheat Crop

By M. E. Bemis

THE 1920 wheat harvest: will it be the bumper crop of 1919, or will the government guarantee be restricted and the acreage consequently reduced?

Of course there are certain areas like the Dakotas and the Canadian Northwest where no great acreage of the wheat fields is likely to be used for any other purpose, but there are also arcas almost as great in the aggregate, scattered over the entire country, which can be used for other crops. The bumper crop of 1919 was due to the large acreage, and the increased acreage, like the floating vote, is elastic, that is, the farmer who has a field that can be diverted to any one of several crops is likely to select the one which promises most profit with least likelihood of monetary loss. The wheat crop this year with the price as guaranteed by the government was the one crop that the farmer could plant with the absolute certainty of making a profit provided he made a fair crop. At planting time, the probable price of any other crop was very much of an uncertainty—an uncertainty that made the growing of the crop a gamble.

It is not the purpose of this article to attempt to make any prophecies of what the next wheat crop will be. It is merely to call attention to the fact that if one puts in wheat, without the certainty of the market price at harvest time, he must in justice to himself take every precaution to see that everything is done which is humanly possible to secure a maximum yield per acre.

There are a number of things which the careful farmer does which help to make a crop certain, and which if neglected mean a distinct monetary loss which could be avoided.

The thorough preparation of the soil is of so much importance and so well understood that to mention this is to invite accusations of vain repetitions. Some little things, however, are of so much importance and so likely to be overlooked that the emphasis of their importance cannot be overdone.

Some years ago one of our best farmers was telling me of an experience that he had. His field was of course thoroughly prepared, everything was done that a careful farmer could and would do. Drilling began and was well nigh finished when he discovered that the springs on the drill were getting weak and not working quite perfectly. To stop and go to town for repairs meant a day's delay, and so, anxious to finish, he neglected it. The result was several sacks per acre less on that part of the field than on the first part. I don't recall now the loss in dollars, but it was considerable, and to him was an apt illustration of the value of little things.

A rather important matter at present is the treatment of grain for smut. Probably most farmers do treat their grain before seeding. Quite a few do this job in a half hearted manner and some get in a hurry and think maybe it won't matter much and let it go.

Last year at the State Experiment Station at Mesa, Arizona, just to see how much good it did to treat the wheat for smut a check field was grown from untreated seed. This seed was from the same field, threshed and cared for and sown the same; no difference except that one had the formalin treatment and one did not. In the field of the treated seed not a head of smut could be found while in the field sown from the untreated seed, fifty per cent of the heads by actual count were smutty.

The method of treating the seed with the formalin treatment is quite simple. One pound of the liquid formalin is used to forty gallons of water. The seed wheat for the next day's seeding is taken out in sacks the afternoon before, and a sack at a time dipped in a barrel containing the solution. The sack is dipped into the barrel and allowed to remain until the liquid has had time to penetrate to the center of the sack so as to wet all the seed. This usually requires about ten minutes. The sack is then removed and laid out on a canvas and another sack dipped and also placed on the canvas, until all the sacks for the next day's seeding are thus treated. The canvas is then folded over the sacks of treated grain, to hold the moisture in by excluding the air. The next morning the canvas is unfolded and the sacks emptied on the canvas. A slight stirring with the wheat spread out rather thin is sufficient to dry out the remaining moisture and the grain is ready for seeding.

The cost is small as compared to the results. I wouldn't want to bet on next year's wheat acreage, but it is a pretty safe gamble that the farmer that sows some wheat, in a well prepared seed bed, using all the care that he knows, will make a profitable crop even if the price takes a tumble from this year's standards.

LAWS AS TO FUR BEARING ANIMALS

"Laws Relating to Fur-Bearing Animals, 1919," Farmers Bulietin 1,079, has just been issued. It gives summary of trapping regulations now in force, open seasons, federal bounties, etc., in the various states. As of special interest to Cultivator readers, we give regulations now in force in California and Arizona.

California

Open Season. No open season for beaver or sea otter. Open season for black or brown bear, ring-tail cat, coon, pine marten, fisher, wolverine, mink, skunk, river otter and fox, October 15 to February 29. Seals and sea lions are protected at all times in game district 19.

Trapping. Trapping license; citizen of United States, fee $1; alien, $2. License issued free to trappers 18 years old or under. Licensed trappers, except those 18 or under, are required to report catch before July 1. Fur animals may be killed at any time when destroying property. Unlawful to use poisons in taking fur animals or to dig or smoke out skunks from dens. Use of gun larger than No. Ten gauge prohibited.

Propagation. No legislation.

Bounties. Mountain lion, female $30; male, $20; paid by state game commission. Board of supervisors of counties may at their discretion fix rate and pay bounty on coyote, wild cat, fox, lynx, bear, or mountain lion. Many counties now pay a bounty on some of these animals, especially on coyotes.

Arizona

Open season. Beaver protected until December 31, 1922. No close season on other fur and predatory animals.

Trapping. State trapping license (fee, $2.50), required of persons over 18 years of age to hunt or trap fur and predatory animals. Issued by warden, designated deputies and clerks of boards of supervisors. License not required for trapping on own land. Predatory and fur animals defined as mountain lion, bear, wolf, coyote, civet and ring-tailed cats, leopard, fox, beaver, otter, badger, fisher, skunk, raccoon, opossum, mink, marten, weasel, muskrat, mole and wood rat. Unlawful to disturb or remove the traps of a licensed trapper who is trapping on the public domain or on lands for which he has permission to trap. Unlawful to use fish or the flesh of any game bird or animal for trap bait. Owner may protect his premises from the depredations of predatory and fur animals at any time. Mountain lion, wolf, fox, coyote, lynx, wild cat, skunk, or other obnoxious animal may be taken on state game preserves only under regulations of the state game warden.

Propagation. Under permit from state game warden, fur-bearing and predatory animals may be kept for propagation, exhibition, or sale.

Bounties. County boards are required to pay for wolf or mountain lion, $10 each; and may pay for coyote, $2; lynx or wild cat, $1; raccoon, 25 cents; jack rabbit, gopher, or prairie dog, five cents.

Copies of this bulletin may be secured free by writing Division of Publications, United States department of Agriculture, Washington, D. C.

Laws relating to deer and other big game, rabbits and squirrels appear in "Game Laws for 1919," Farmers Bulletin 1.077, which may be secured in the same way.

SIXTEEN YEARS OLD AND GOING STRONG

The Tractor & Trailer in its September issue gives photograph of a tractor which was bought in 1903 by an Iowa farmer, and has been in continuous use. The accompanying item says:

"Year after year went by. Taken care of, as any good piece of machinery should be, the tractor growing old in years, but not in looks or ability, came up fresh and capable for each succeeding season's work. At the end of the tenth year it seemed as though the machine must be very near the point of outliving its usefulness.

"Last spring the owner visited the

Why Firestone is Giving Extra Value in Tires

Firestone is giving so much more per dollar this year than the ordinary that our 42,000 dealers want us to tell the public why.

How can Firestone sell the new Standard Oversize Firestone Cord at a normal price?

How can Firestone give the most highly perfected, special molded 3½-inch tire at a price that dealers usually ask for "off brand" kinds?

How can Firestone tubes be sold for less than others of any reputation at all when their very looks and "body" and feel indicate their finer quality and longer mileage?

The answer to all this is Firestone generalship of man power—Firestone organization of brains and capital.

Firestone has built tires since the beginning of motor cars and trucks. Firestone built the first truck tire, and practically all the "firsts" among tire and rim improvements belong to Firestone.

Most Miles per Dollar

Plant No. 1. Capacity 20,000 Tires Daily
This vast plant is now concentrated on Cord Tires and Truck Tires. Its efficiency and capacity have been greatly increased by Plant No. 2.

That's because Firestone has thought farther ahead.

So today, Firestone *is* farther ahead than ever. Year by year Firestone has been laying those foundations of man power and resources which are bearing their biggest fruit in low cost mileage today.

It took Firestone man power to create the factories shown here.

It took Firestone man power to foresee the value of a Firestone organization in Singapore, the source of rubber supply, thereby saving you 3 cents a pound on rubber.

Plant No. 2. Capacity 16,000 Tires Daily
Devoted exclusively to 3½-inch Tires. Firestone is first with a huge separate factory and organization specializing entirely on this tire in greatest demand.

It took Firestone man power to control the fabric from cotton field through the mill, and to design looms for special widths of fabric, thus reducing waste and lowering the cost.

And why is this Firestone organization the most effective in the business?

Because Firestone attracts and holds the men who do things.

90% of Firestone workers own stock in the company. Firestone Park is a unique and attractive home community; the clubhouse plays a real part in the daily life of these workers. The Firestone bank has thousands of depositors. The Firestone insurance fund protects every worker in the organization.

All of these are reasons why Firestone can give more in the Cord Tires, or Fabric Tires, or Truck Tires, or Tubes.

Their personal financial interest in you as a customer makes Firestone men save at every turn, to hold you by giving mileage at lowest cost.

Ask your dealer for a Firestone in your size and type.

Firestone

GET TO THE BOTTOM OF THE DITCH

where there is grass and weeds, and silt and ***TROUBLE.***

Down at the bottom of this space is the machine that does away with both the trouble and the causes—quickly and economically.

The Martin Odgen

A tool for farm use. It makes new ditches—cleans old ones. It builds or tears down borders, dykes and terraces. It grades roads, and moves snow. It works in any kind of soil any place pulling power can be applied.

For HORSE or TRACTOR USE

All-steel construction. Reversible and adjustable blade. A size for every requirement. Each size has wide range of work.

COMPLETE CATALOG FREE. Tell us your earth-moving troubles. We can help.

Owensboro Ditcher & Grader Co., Inc.
1590 Wazee St. Denver, Colo.

Power, Durability

There are three principal reasons for the prodigous power, dependability and economy of the "Caterpillar" Tractor—

Holt design—Holt method of combining materials—Holt workmanship.

Tested and proved—in peace and in war. Invest in a "Caterpillar" Tractor now. Send for catalog 405.

HOLT MANUFACTURING COMPANY

Stockton, Cal., Peoria, Ill., Los Angeles, Cal.
Portland, Ore., Spokane, Wash.
San Francisco, Cal.

CATERPILLAR

Reg. U.S. Pat. Off.

Teague's Thorobred

Citrus Trees

Are especially Grown for Planters desiring the Best. If better trees could be grown we would grow them. May we have your order?

The R. M. Teague Citrus Nurseries

San Dimas, California

Founded in 1339

STRAWBERRY PLANTS

The kind that produce results on the Western Coast. From Santa Cruz County, California: "Your shipment of plants came thru in about one week's time, and in fine shape."—H. H. From Francis, Nev.: "The strawberry plants that you shipped me arrived in good condition, and are the nicest plants that I ever saw."—J. B. C.

Good Plants and Quick Service.
V. R. ALLEN, Wholesale and Retail
Seaford, Delaware

RHUBARB

WAGNER'S IMPROVED

Plant Now Growers making $1000 and over per acre annually. Splendid results in six months. Special prices for immediate planting. Also berries and small fruit, etc. Write to the originator, J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, Calif.

factory, and while keenly interested in the more modern design of the current models, is said to have expressed his entire satisfaction to continue the 1903 machine in service, as it was in splendid condition and ready in every way for another season's work.

ODD JOBS FOR TRACTORS

When moving day came round an Illinois farmer called in his trusty tractor. Coupling it up with two wagons equipped with hayracks he loaded on the household goods and the family and with but small effort and in a remarkably short space of time made as good a finished job of this removal as he had been in the habit of making of his plowing.

In a Wisconsin town a heavy gasoline engine was being loaded on to a truck. The heavy engine got just so far up the skids and could be forced no farther. A tractor was brought around into position and, as though it was the easiest task it ever undertook, shoved the massive engine up the skids on to the truck.

THE TRACTOR AT THRESHING TIME

The day of the steam traction engine and the huge threshing machine to take care of the harvest for the entire community is waning rapidly. Enters the small separator, individually owned and tractor operated, to take the place of the old-time "ring" outfit, and shrewd dealers in many communities are selling many tractors as they succeed in convincing the farmer of the wisdom of making the change. Never previously was there such a demand for tractors and small separators, and it has been found impossible to keep up with the orders.

THE POOR MAN'S ORCHID

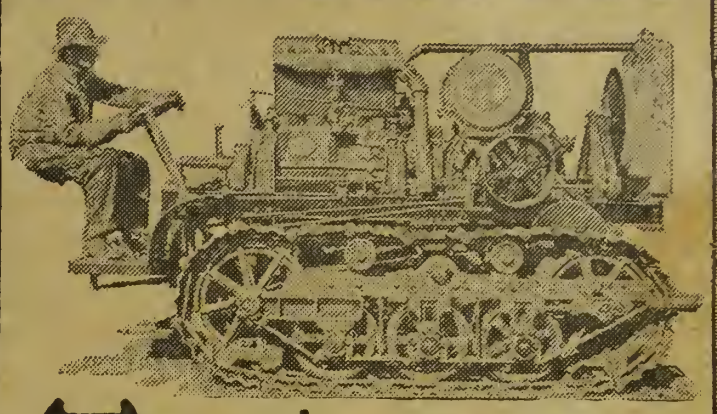
By Ernest Braunton

FANCIERS of iris and of gladioli are both putting forth the claim that their own hobby is the "poor man's orchid." But there is glory enough in either one so that no quarreling should be indulged in and every garden should contain a goodly number of each of these popular and easily grown plants.

Now is the time to plant iris, for they are now most nearly dormant. Every year marks the originating of new and important hybrids and at no time in the world's history have iris been so glorious as now. Even ten years ago there was not nearly such a fine range of color and form as seen in all good collections today. And only in recent years has the iris been sufficiently appreciated to enable specialists to develop iris gardens that handle no other plants. Now the country at large has many great special iris nurseries and California has her share. A very extensive collection is grown in a commercial field between Los Angeles and the sea. One fact has been demonstrated in California and that is that many iris will stand very dry treatment and poor soil and yield magnificently in flowers. In very rich soils some iris get sick and die.

The gladioli, that other poor man's orchid, will not endure drouth but must have a fair water supply and a rich soil if good flowers are to be produced. But they have larger and showier flower spikes than iris and the colors are second to no flowers of the garden. Specialists have carried gladioli to an even higher standard than they have iris and it really seems as if the end of improvement has been reached. The bulbs may be planted from November to July and will produce good flowers with ordinary care. The one best month for planting is no doubt January and nearly all California bulbs are planted within a month on either side of the first one. Commercial flower growers hold a great number in cold storage for late summer planting and the results have been all that was expected for gladioli bulbs are good keepers. If kept in a cool dry place they may even be kept over a season without planting and still produce vigorous growth the next year.

Monarch



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108 ACRES, 3 HORSES AND
9 cows, 3 heifers, bull, hogs, chickens, wagons, buggy, plows, cultivators, harrows, disc, mowing machine, rake, grain drill, harness, long list tools, 150 bu. oats, large quantity hay, corn, potatoes, near R. R. town, electric cars, high school, few steps milk station, 10 miles world-famous resort, 12 miles large city. 60 acres in high cultivation fields, wire-fenced 20-cow pasture, home-use wood; 200 apple trees, 40 pears, 24 cherries, abundance other fruit, berries. 12-room house, good condition, running water, air pressure system, good, painted barns, stable, granary, corn, smoke, ice, poultry houses. Retiring owner sacrifices all $6500, only $1500 down needed. Details page 32 New Fall Catalog Farm Bargains Main to Florida and west to Nebraska; copy free. STROUT FARM AGENCY, 831 A. G., New York Life Building, Kansas City, Missouri.

Washington "The Evergreen State" has splendid openings for more farmers. Fruit growing, dairying and live stock raising, as well as grain growing show great results. Here is a mild climate, ample rainfall or irrigation and many valleys of fertile soil. Land prices range from $25 an acre upward, depending on location and development. Good roads, schools and churches. Full information in new book by State Agricultural College and United States Railroad Administration, just off press. Ask for Washington book and give your name and address plainly. J. L. Edwards, Manager Agricultural Section, Room 677, United States Railroad Administration, Washington, D. C.

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Choice tracts $100 per acre.
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We Have 100 Young Gilts and Boars, bred in the purple, which we are selling for about half their value. Money back if not satisfied. Derryfield Farm, Capital National Bank Bldg., Sacramento

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The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address R K Walker

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Order Baby Chicks Now, for immediate or spring delivery. Several varieties. Safe arrival guaranteed. Write for free circular. R. I. Red, Buff Orpington and White Rock cockerels now ready for shipment. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto, California.

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Working Foreman for 500 Acre Ranch near Santa Barbara thoroughly experienced in pure-bred stock, draught-horses, cattle, sheep and hogs, raising, feeding, testing and showing, also in modern farming, Lima beans and orchard cultivation. Must be able to secure best results from men, horses and tractors. Reply stating experience, nationality, age and whether married or single and if married whether wife would undertake to do cooking for ranch help. P. O. Box 522, Santa Barbara.

Wanted—Salesmen and Agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1.00. W. Porter Barnes, Santa Rosa, California. Dept. A-11.

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Wanted — 100 Bronze turkey hens for breeding, also 200 R. I. Red pullets or yearling hens 5 to 7 months for pullets. State price. Johnston & Macdonald, 831 E. Flower, L. A.

Wanted — A Nurseryman. One who thoroughly understands hailing plants. Apply to: Coolidge Rare Plant Gardens, Pasadena, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush. Minneapolis, Minnesota.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA. Paradise, Butte County, California

Wanted—A Car of Seed Barley. Imperial Valley Nursery & Seed House, El Centro, California.

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Select Natural Leaf Tobacco from grower to consumer postpaid. Ideal for smoking and chewing. Sixty cents pound. Reference Bank Sharon. C. D. Mitchell, Sharon, Tennessee.

Made of Redwood, Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

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For Sale—Send us $6.00 and we will send a 40-lb. box dried black figs. Ophir Orchards Company, Newcastle, California.

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BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford. Box C, Butte City, Glenn County, California.

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Golden Glen Stock Farm registered Jerseys and Shropshires. Geo. W. Thomas & Sons, Riverside, California.

RABBITS

For Monthly Magazine on rabbit raising sent one year for 12 cents or names and addresses of five friends raising rabbits. ANDERSON, Eagle Rock, California, Dept. C.C.

Money in Rabbits—We are having a special sale of very fine bucks and does at reduced prices. Write us for particulars. J. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD FECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Auger. Watsonville, California.

MUSICAL INSTRUMENTS

PIANOS—PLAYER PIANOS
Sage Piano Co., 1600 Clay Street, Oakland, California

Canada thistles are becoming a nuisance throughout Western Washington.

Household Department

A ROSE TO THE LIVING

A rose to the living is more
Than sumptuous wreaths to the dead;
In filling love's infinite store,
A rose to the living is more,
If graciously given before
The hungering spirit is fled—
A rose to the living is more
Than sumptuous wreaths to the dead.
—Nixon Waterman.

CONTENTMENT

Lord of himself, though not of lands,
And having nothing, yet hath all.
—Sir Henry Wotton.

TOO AMERICAN

By Don Marquis in Milestones

"IS IT a real English cottage?" we asked the agent suspiciously, "or is it one that has been hastily aged to rent to Americans?"

It was the real thing: he vouched for it. It was right in the middle of England. The children could walk for miles in any direction without falling off the edge of England and getting wet.

"See here!" I said. "How many blocks from Scotland is it?"

"Blocks from Scotland?" He didn't understand.

"Yes," I said, "blocks from Scotland." I explained. My wife and I had been trying to get a real English accent. That was one of the things we had come to England for. We wanted to take it back with us and talk it in Brooklyn, and we didn't want to get too near Scotland and get any Scottish dialect mixed up with it. It seemed that the cottage was quite a piece from Scotland. There was a castle not far away — the fifteenth castle on the right side as you go into England. When there wasn't any wind you didn't get a raw sea breeze or hear the ocean vessels whistle.

"Is it overgrown with ivy?" asked Marian, my wife.

Yes, it was ivy-covered. You could scarcely see it for ivy—ivy that was pulling the walls down, ivy as deep-rooted as the hereditary idea.

"Are the drains bad?" I asked.

They were. There would be no trouble on that score. What plumbing there was, was leaky. The roof leaked. There was neither gas nor electricity, nor hot and cold water, nor anything else.

"I suppose this place is rather damp?" I said to the agent. "Is it chilly most of the time? Are the flues defective? Are the floors uneven? Is the place thoroughly uncomfortable and unsanitary and unhabitable in every particular?"

Yes, it had all these advantages. I was about to sign the lease, when my wife plucked me by the sleeve in her impulsive American way. "Is there a bathroom?" she asked.

"My dear Mrs. Minever," said the agent with dignity, "there is not. I can assure you that there are no conveniences of any kind. It is a real English cottage."

I took the place. It was the evening of the third day after we took possession that I discovered that we had been taken in. All the other Americans in that part of England were sitting out in front of their cottages trying to look as if they were accustomed to them, and we—my wife and Uncle Bainbridge and I — were sitting in front of ours trying to act as English as we knew how, when a voice hailed me.

"You are Americans, aren't you, sir?" said the voice.

The voice was anyhow; so we shamefacedly confessed.

"I thought you looked like it," said the voice, and its owner came wavering toward us through the mist.

"What makes you think we look like it?" I said, a trifle annoyed; for it had been my delusion that we had got ourselves to looking quite English— English enough, at least, so that no one could tell us in the faint light.

"Our clothes don't fit us, do they?" asked my wife, nervously.

"They can't fit us," said I, "they were made in London."

I spoke rather sharply, I suppose. And as I was speaking a most astonishing thing happened; the person I had been speaking to suddenly disappeared. He was, and then he was not! I sprang up, and I could tell from my wife's exclamation that she was startled, too. As for Uncle Bainbridge, he seldom gives way to emotion not directly connected with his meals or his money.

"I heard a new American family had moved here," the apparition said timidly, "and I dropped by to ask you sir, do you need a ghost?"

"A ghost? Are you—"

"Yes, sir," with a deprecating smile. "Only an American ghost; but one who would appreciate a situation all the more, sir, for that reason. I don't mind telling you that there's a feeling against us American ghosts here in England, and I've been out of a place for some time. Maybe you have noticed a similar feeling toward Americans? I'm sure, sir, you must have noticed á discrimination, and I just dropped by to see if you wanted a ghost. Being fellow Americans, you know I thought—" His voice trailed off into humble silence, and he stood twisting a shadowy hat round and round his fingers.

"See here!" I said. "Should we have a ghost?"

"Beg pardon, sir, but how much rent do you pay?"

I told him.

He answered politely with decision: "Then, sir, in all fairness, you are entitled to a ghost with the place. It gives a certain tone, sir."

"Why weren't we given one, then?" I asked.

"Well—" he said, and paused. If a ghost can blush with embarrassment, he blushed. "You see," he went on, making it as easy for me as he could, "English ghosts object, mostly to haunting Americans, just as American ghosts find it difficult to get places in English houses and cottages. You see, sir, we are—" He halted lamely, and then finished, "we're so American, somehow, sir."

"But we've been cheated!" I said.

"Yes, sir," said the American ghost, "regularly bad." He said it in quite an English manner, and I complimented him on his achievement. He smiled with a child's delight.

"Would I—do?" he urged again, with a kind of timid insistence.

"I guess," I began, "that—" I was about to say that he would do, when my wife interrupted me.

"We do not want a ghost at all," she said firmly.

"But, my dear—"

She raised her eyebrows at me, and I was silent. After looking from one to the other of us wistfully for a moment, the applicant turned and drifted away, vanishing dejectedly when he reached the gate.

"You heard what he said, Henry?" said my wife as he disappeared. "It is lucky that you have me by you. Do you want to saddle yourself with an American ghost? For my part, I will have an English ghost or none!"

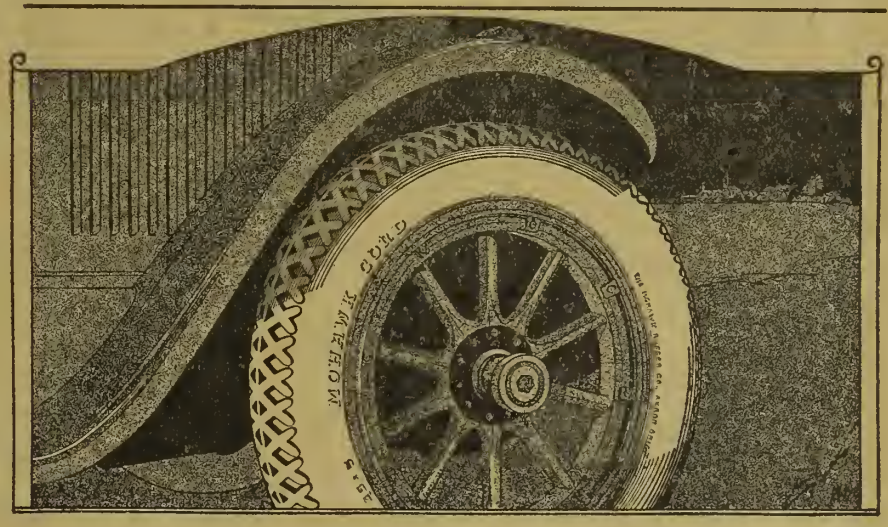
I realized that Marian was right, but I felt sorry for the ghost.

"What did—the fellow—want?" roared Uncle Bainbridge, who is deaf, and brings out his words two or three at a time.

"Wanted to know—if we wanted—a ghost!" I roared in reply.

"Goat? Goat? Huh-huh!" shouted Uncle Bainbridge. "No, sir! Get 'em a pony—and a cart—little cart! That's the best thing for the kids!"

Uncle Bainbridge is, in fact, so deaf that he is never bothered by the noises he makes when he eats. As a rule when you speak to him first he says, "How?" Then he produces a kind of telephone arrangement. He plugs one end into his ear and shoves a black rubber disk at you. You talk against the disk, and when he disagrees with you he pulls the plug out of his ear to stop your foolish chatter, and snorts contemptuously. Once my wife remarked to me that Uncle Bainbridge's hearing might be better if he would only cut those bunches of long gray hair out of his ears. They bother



Greater Economy for Any Country-Driven Car

Whether it's a suit of clothes, a pair of shoes, an automobile, a tractor, or a tire—*quality* is the thing that insures lastingly satisfactory service.

It is Mohawk *quality* that has made Mohawk Tires so popular among the farm communities.

In most sizes of Mohawk Tires, you will find an *extra ply of fabric.* That means longer wear.

In every Mohawk Tire you will find *nothing but pure rubber and pure materials*—no shoddy, no reclaimed rubber, no "fillers". That means that you get more tire for your money when you buy a Mohawk—the Mohawk Cord, for example, weighs from eight to ten pounds more than any other Cord, size for size.

Add to these advantages a hand-made tire, produced by expert tire builders and you will understand why 85% of the motorists who buy their first Mohawk Tire continue to use Mohawks *exclusively.*

Cord or fabric, in ribbed and non-skid treads, and there's an extra ply, hand-made, Ford size Mohawk, too. Good dealers everywhere handle them

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Branch: 1436 Van Ness Ave., San Francisco, Cal.

MOHAWK "Quality" TIRES HAND MADE

Mayer HONORBILT SHOES

MILWAUKEE Mayer TRADE-MARK CUSTOM MADE HONORBILT

For the Whole Family

DRESS up shoes for everybody, work shoes, school shoes for the children and easy restful house shoes. *Honorbilt* Shoes contain the same good quality leathers they did 38 years ago; they are *built on honor.* The name *Honorbilt* stands for a heaping measure of service. Wear a pair and prove it for yourself.

Men's and Women's Fine Shoes

The fine shoes are all that anybody could ask for in style and you get choicest leather plus genuine comfort. You are sure to find the particular shape you want and always the latest styles, and a wide variety.

Work Shoes

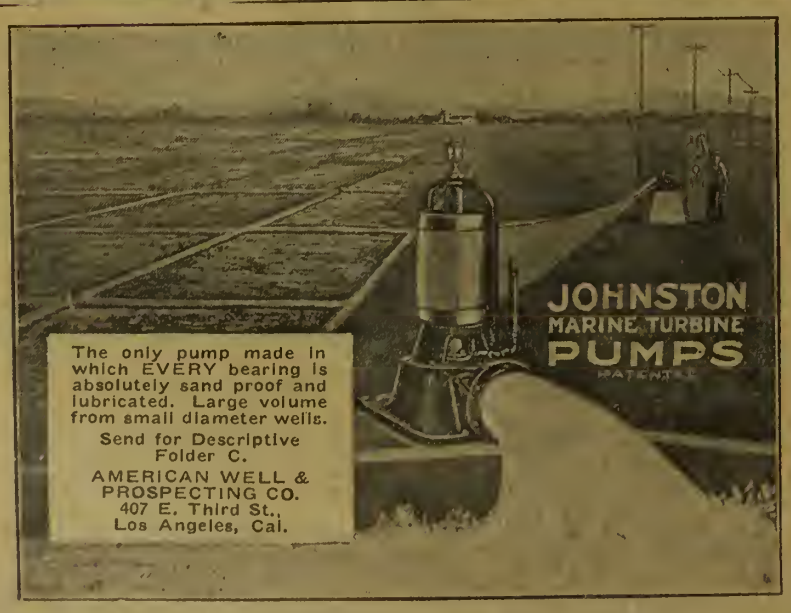
Honorbilt Work Shoe leather is double tanned to resist the alkali in the soil, as well as barnyard juices. They are soft and easy on the feet yet long wearing and will not get hard when wet. Honorbilt Work Shoes will give double the wear of ordinary shoes.

Children's Shoes

Sturdy, well-built shoes that stand rough treatment—the kind boys and girls like, and their parents, too. Shaped for growing feet. The quality is there—*they wear like iron.*

No matter who in your family needs a pair of shoes next, see your dealer who handles the Mayer Honorbilt line. Look for the name *Honorbilt* on the soles.

F. Mayer Boot & Shoe Co.
Milwaukee, Wis.



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AMERICAN WELL & PROSPECTING CO.
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Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

everyone except Uncle Bainbridge a great deal. But the plug was in, after all, and he heard her, and asked one of the children in a terrible voice to fetch him the tin-box he keeps his will in.

Uncle Bainbridge is my uncle. My wife reminds me of that every now and then. And he is rather hard to live with. But Marian, in spite of his little idiosyncrasies, has always been generous enough to wish to protect him from designing females only too ready to marry him for his money. So she encouraged him to make his home with us. If he married at all, she preferred that he should marry her cousin, Miss Sophia Calderwood. That was also Miss Sophia's preference.

We did get a ghost, however, and a real English ghost. The discovery was mine. I was sitting in the room we called library one night, alone with my pipe, when I heard a couple of raps in, on, about, or behind a large bookcase across the room. It was several days after we had refused the American applicant, and I had been thinking of him more or less and I suppose my reflections had disposed my mind to psychic receptivity, for when I heard raps I said at once:

"Are there any good spirits in the room?" It is a formula I remembered from the days when I had been greatly interested in psychic research.

Rap! rap! came the answer from behind the bookcase.

I made a tour of the room and satisfied myself that it was not a flapping curtain or anything like that.

"Do you have a message for me?" I asked.

The answer was in the affirmative.

"What is it?"

There was a confused and rapid jumble of raps. I repeated the question with the same result.

"Can you materialize?"

The ghost rapped no.

Then it occurred to me that probably this was a ghost of the sort that can communicate with the visible world only through replying to such questions as can be answered by yes or no. There are a great many of these ghosts. Indeed, my experience in psychic research has led me to the conclusion that they are in the majority.

"Were you sent down by the agent to take this place?" I asked.

"No!" It is impossible to convey in print the suggestion of hauteur and offended dignity that the ghost managed to get into that single rap. I have never felt more rebuked in my life; I have never been made to feel more American.

(Continued next week.)

A NEW TRICK IN MAKING OLD CLOTHES NEW

By Ruth Dougherty

It may not be a new trick to some, but I know it is to many. It is a trick in steaming, told me by my dressmaker.

She is some dressmaker, by the way, for she takes an artist's delight in assembling old materials into up-to-date garments. She was engaged in making respectable an old Bolivia cloth coat that had seen many seasons wear. It was relined, the worn edges of cuffs and collar turned under, pockets reinforced, and the old coat began to take on quite a self respecting air; that is in front; the back was hopelessly crushed and dejected looking, for it had been sat upon and leaned against until its age was proclaimed in every tired thread. A visit to the professional cleaner always chirked it up for a few days, but it soon took on again its weary slump.

"No use having it steamed again," I said. "It doesn't stay up long enough to pay."

"Hang it over the tub the next time you take a bath and brush it up while it's damp."

I did better than that; I filled the bath tub with scalding water, hung the coat on the curtain rod above, closed window and door and let it steam for at least 15 minutes, then, whisk broom in hand, entered and brushed it up. The result was so encouraging that the old coat was left in the room till the water cooled, being thoroughly brushed up several times during the period. It looked like new—almost.

Simple, isn't it, and easy!

To Make Homes Better and House Work Lighter

is considered the most important duty of this great Home-Making Institution. For over 39 years we have enjoyed active, sincere participation and cooperation in the planning and creating of better and more beautiful homes in California and the West generally.

We have created through our experience a great reserve of Home-making Ideas and Plans. To make these Ideas and Plans available in usable, enjoyable form we print each year literally scores of Folders, Booklets and Catalogs (as well as several distinctive Magazines) any and all of which are sent anywhere free and without obligation on request.

Barker Bros. consider it a part of their duty to give careful detailed answers and suggestions by mail to all questions about home furnishing, coming by mail. It is your welcome privilege to write us for information on any particular Home subject in which you are interested.

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Brand new, latest model. Direct from factory to you. And we ship you an Oliver for free trial. No payment down. Keep it or return it. If you want to own it, pay us only $3 per month. This is the greatest typewriter bargain on earth. You save $43. Write today for full particulars, including our book "The Typewriter on the Farm." Then we will send you an Oliver for free trial. Write now

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LOS ANGELES.

Only ⅓ cent for a cup of fine rich invigorating tea!

If you could have everything else as good for so little money, the "high cost of living" would be out of date.

Schilling Tea is the fine practical economical tea of this country.

There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

Boys! Win an **Auto-Wheel**

In This Interesting Contest

TO THE BOY who can think of the most interesting uses for the popular AUTO-WHEEL COASTER, for earning money and for play, we shall award one of our large models absolutely FREE. It's a mighty generous prize for a few minutes' work. And the following eleven valuable prizes will be given to those sending in the next best uses: **Camera, Camping Tent, Mess Kit, Scout Knife, Fleetwing Steering Sled, Compass, Ingeraoll Watch, Axe, Bank, Electric Flashlight, Poncho.**

INFORMATION ABOUT CONTEST

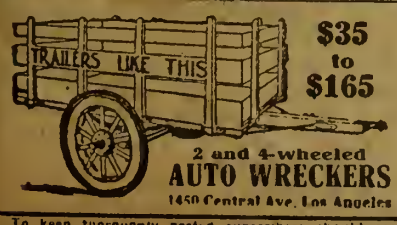
1. Any boy or girl not over 15 years may compete.
2. Contest will be judged by three men well-known in the Boy Scout organization.
3. Write to Business Idea Dept., Buffalo Sled Co., for pamphlet explaining the Contest, and colored catalog telling all about Auto-Wheel.
4. At end of letter write names of three Coaster Wagon Dealers in your town. If any carry the Auto-Wheel put an "x" after name.

YOU can do it. Here are a few pointers: The Auto-Wheel is a strong, speedy wagon for work or play. Has roller bearings, steel axles and tires, body of white ash, maple gear. See the Auto-Wheel dealer in your town for ideas.

CONTEST CLOSES NOVEMBER 30, 1919.

Buffalo Sled Co.,
173 Schenck Street,
N. Tonawanda, N. Y.

In Canada:
Preston,
Ontario.



$35 to $165

2 and 4-wheeled
AUTO WRECKERS
1450 Central Ave. Los Angeles

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

An old black velvet hat has just been renewed in the same way, a poor old hat that had served three winters and been caught in several rain storms. Now it's bright and happy, looking forward to its fourth year of active life.

WHY TWENTY CENTS MORE?

Last week I was spending my vacation in a little mountain town. All groceries and dry goods sold there came by truck from the city 60 miles away. On the counter of one of the general stores I noticed a beautiful piece of romper cloth of a widely advertised make. It was priced at 40 cents. The same thing I had seen in Los Angeles for 50 cents. Thinks I, "I wonder why they can sell it ten cents cheaper here, 60 miles from the railroad?"

Yesterday I was in one of the big dry goods stores in Los Angeles and curiosity prompted me to look up that same material. The price had been changed ten cents; it was no longer 50 cents but 60 cents! Why?

And is there anything we can do about it?

Several years ago the prophet Haggai said to the Jewish people: "He that earneth wages earneth wages to put it into a bag with holes." There seem to be some expert punchers of holes abroad in the land, with itching palms held beneath those holey sacks to catch the hard earned wages.—R. D.

MORE GOOD CAKES

Subscriber, Lindsay

We have been taking your weekly ever since we have been on a ranch, now over four years, and feel that it's a necessity. The first thing I do when it comes is to turn to the household department to see if I can find something new to cook. I have already made a large cook book of the good recipes and hints to housekeepers. I have the misfortune to be paralyzed on my right side which has made a "shut in" of me for several years. Not having the use of my right hand, I soon learned to write with my left only with pencil, though I read and write a great deal and do most of my own work which keeps me contented and happy at home. I have a cake recipe which I use a great deal, because it's simple and inexpensive, which I will pass on.

Coffee Cake: Two eggs, one cup of sugar, tablespoon any kind of fat (butter I think best). Stir this well, then alternate two cups flour with two cups of milk. Lastly add one generous teaspoon baking powder and flavor to taste. Divide this into two jelly tins and put on top of each part the following: With the tips of the fingers mix one cup brown sugar, one tablespoon cinnamon and lump of butter size of a walnut. Sprinkle generously on top of each cake.

(If "Subscriber, Lindsay" will send name and address the Cultivator will credit extension of subscription.)

Subscriber, Los Angeles

Good Cake Without Eggs: Two cups hot water, two cups brown sugar, two tablespoons lard, one package raisins, one teaspoon salt, one teaspoon each cinnamon and cloves.

Boil all these ingredients together for five minutes after they begin to bubble. When cold add one teaspoon soda dissolved in teaspoon hot water, three cups flour with two teaspoons baking powder. Bake in two loaves for 45 minutes in moderate oven.

SPICED GRAPES

Four quarts of grapes removed from stems and cut in halves. Boil until seeds have all been removed by skimming from surface. Then add three and one-half pounds brown sugar, one-half pint vinegar, one tablespoon cinnamon and one-half tablespoon each cloves and allspice. Boil slowly until soft and about the consistency of jam.

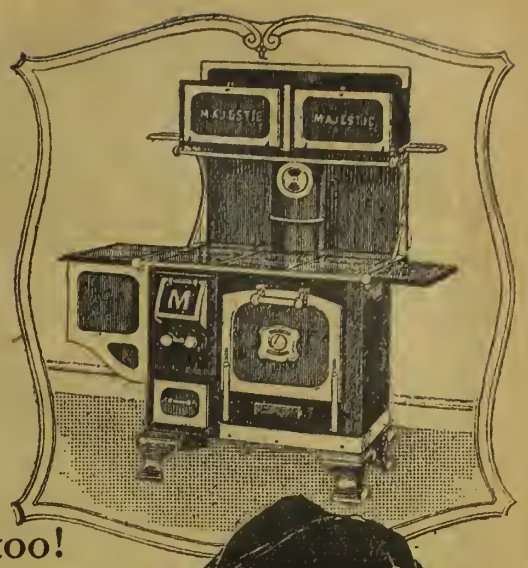
DAYLIGHT SAVING ENDS

The clocks will all be turned back one hour on the last Sunday in October, probably for the last time, as the daylight saving act has been repealed. Two o'clock A. M., Sunday, October 26, is the time.

Eggs at Petaluma are quoted at 72 cents, the highest price known there.

Hot water —A plenty!

Just dip the boiling hot water whenever you need it, from the all-copper reservoir on the side of your Majestic Range. Reservoir top is level with range top, giving extra space. Patented heat pocket of reservoir fits directly against fire box —and convenient shifting lever moves reservoir close to fire, or away, controlling temperature of water.



Perfect baking, too!

Air-tight oven, all joints riveted, economizes fuel and assures delightful baking results. Large warming closets at top. Unbreakable malleable iron frame saves repairs. Pure charcoal iron body, best known rust-resisting material. Burnished cooking top requires no polish. Trimmings of smooth gleaming nickel. Whole range so easy to keep clean and bright.

Door panels and splasher back in lustrous Blue Enamel or White Enamel finish, if desired.

The Majestic Range is made in many styles and sizes—every style the highest range value obtainable at its price. Majestic prices the same everywhere—freight considered.

There is a Majestic dealer in nearly every county in 42 states.

Write us for Free Majestic Booklet.

Majestic Manufacturing Co.
Dept. 203 St. Louis, Mo.

Great Majestic
The Range with a Reputation

Instant heat—
when and where you want it

Pearl Oil in a good oil heater, brings instant comfort at the touch of a match. No smoke, no odor, no dust, no dirt. Clean and economical.

Pearl Oil is refined and re-refined to be pure and clean burning. Sold in bulk and five-gallon cans. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.

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(CALIFORNIA)

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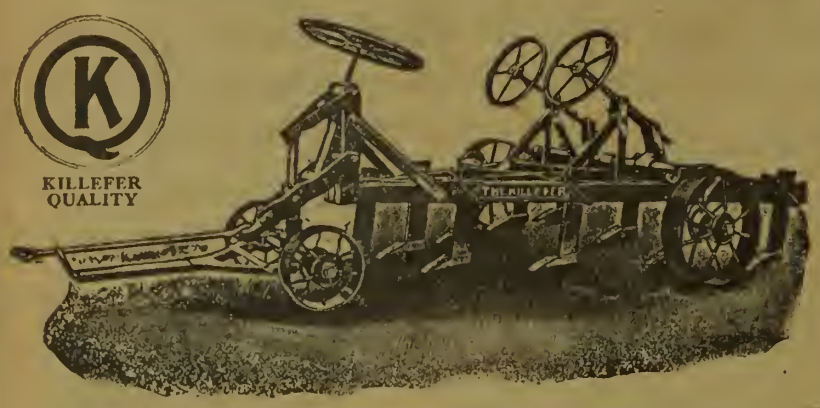
TRACTOR CHISEL



Now is the time to commence deep chiseling and subsoiling. Do it in time to prepare the ground thoroughly to receive the benefit of the winter rains. Break away from the old habit or mistaken idea of scratching the ground and expecting to harvest a crop.

Plow pan, although frequently referred to as mechanical hardpan, should not be confused with natural hardpan. However, so far as crop production is concerned, the effects of plow sole and hardpan are the same. Both must be destroyed before proper cultivation can be had, and the only difference in the two that will be considered here is in the method required for their destruction.

Plow sole offers less resistance to the available methods of breaking it up than hardpan, and, with the tractor and tool of sufficient strength now available for tractor use, it can be broken up and subdued, bringing the land back to the point where a full yield may be expected.

Plow sole offers less resistance to tillage implements than does hardpan; both are in many cases impervious to horse teams and ordinary plows and in some instances are difficult of handling with tractors and modern implements. Yet before a full yield may be expected this condition must be subdued, and to date the only satisfactory means is by use of the chisel or subsoiler.

Send for Catalog and Prices

The KILLEFER MANUFACTURING CO.

2209-21 Santa Fe Avenue, Los Angeles, Cal.

Our Aim is to Encourage and Assist in the Production of Beef

Southwest Cattle Loan Company

Jno. Knorpp., Pres. & Gen. Mgr.

915 Citizens National Bank Bldg.

KANSAS CITY, MO. LOS ANGELES, CALIF.

Important to Dairymen and Stockmen

You will be interested in our demonstration plot of

MILLETS	GRASSES	SORGHUMS
Pearl Millet	*Para	*Wonder Forage
*Broom Corn	*Napier	Japanese Sugar Cane
Hog Millet	Guinea	*Silver Tip Sorghum
Red Millet	Cocksfoot	Ribbon Cane
Japanese Millet	*Fog	Honey Sorghum
Biloxi Soy Beans	Paspalum Dilatatum	Shallu
Golden Millet	Billion Dollar Grass	Feterita
Brown-top Millet	*Rhodes	White Milo
Chinese Millet	Natal	Egyptian Corn
Indian Millet	Bromus Inermis	*Schroch Kaffir Sorghum
White Wonder Millet	*Merker	Dwarf Milo
Large Headed Millet	Red Top	Sudan
	Perennial Rye	Kaoliangs
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The varieties marked * are by far the most valuable. Be sure to see them growing on the 1500 block West 16th Street, Los Angeles. Send at once for our bulletin describing each one.

AGGELER & MUSSER SEED CO.

620 South Spring Street LOS ANGELES, CALIF.

Attend the California International Live Stock Show, San Francisco, Nov. 1 to 8

Los Angeles Markets

Los Angeles, October 15, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 64 lb.

Dairy Exchange prices last week on extras:

Oct.	8	9	10	11	13	14
'19 ...	66	65	65	65	..	64

CHEESE

Brokers' prices:

California, fresh, lb., 34; price to retail merchants, 34@36.

EGGS

Fresh extras, Produce Exchange closing price, 72 dozen; case count, Produce Exchange closing price 66 dozen; pullets, Produce Exchange closing price, 69 dozen. Pewee pullets, 48.

Dairy Exchange prices last week on extras:

Oct.	8	9	10	11	13	14
'19 ...	69	69	69	70	..	72

POULTRY

Prices to producers: Hens, lt. 29, heavy, 29@33; colored over 4 lbs., 36; broilers, 40. fryers, 29; roasters, 27; old roosters, 19; capons, 42; ducks, old, 23; ducklings, 27; ducklings, Pekins, 3½ up, 29; geese, 25; turkeys, 34@42; squabs, 45.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 16.50; 150 to 225 lbs., 16.00.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.00; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock October 14, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market firmer. New stock, Stockton; Burbank, best $2.85@3.00; others $2.00@2.75 per cwt. Local: lug boxes 1.00. Sweets, lb. 3; lug boxes 80@90.

Onions: Demand and movement moderate. Home grown and Stockton: White Globes 90@1.00 per lug box; 2.85@3.00 per cwt. Yellow varieties, 3.00@3.25 per cwt; lug boxes 95@1.00.

Garlic: Local, per sack lots, 30.

VEGETABLES

These are the actual prics obtained October 14, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 7@9; Limas, 8@10; fancy shipping, 10.

Cabbage, lb., 1¾; crate, 1.25@1.50.

Carrots, doz., 35@40; lb., 3.

Cauliflower: Local, per doz., 1.25; field crates, $2.00@2.50.

Cucumbers: Local stock, lug boxes 75@90; others, fair quality, 65@75. Shipping stock 85@1.00.

Celery: Local stock 1.10@1.25 per dozen bunches. Crates, 4.50@4.75; fancy shipping stock, 4.75@5.25.

Corn: Roasting ears, lug of 3 dozen, 80@90; best, 1.00.

Eggplant, best, lb., 3@3½.

Peppers: Bell, 60@75 per lug box; others, 50@60; Chillis, best, 55@65; others, 45@55. Per lb., 4@5. Shipping stock, high as 1.00 per lug.

Lettuce, local, cr., 1.00@1.50; shipping 1.25@1.50.

Peas, local, lb., 11@13.

Rhubarb: Local, box, 1.00@1.25.

Squash: Summer, lug, 75@1.00; others, 60@70.

Spinach, doz., 30@40.

Tomatoes: Lug, ripe, 80@90; shipping, 90@1.25.

Turnips, doz., 40@50; others, 30@35.

FRUITS

These are the actual prices obtained October 14, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms; Cash on the walk.

Apples, California: Bellefleurs, 4 tier mostly, 1.50@1.60; 3½-4½ tiers, 1.35@1.40; loose 3½, 4 per lb. Local: Jonathans, scarce, packed mostly, $2.75; loose, 6 per lb. Northern: Jonathans, extra fancy, 3.25@3.40; fancy, 2.75@3.00; loose, 7 per lb.; locally packed, 3.00@3.25.

Bananas, 8¼@8½.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews, 90@1.00; Paul Rose, pack standard, 1.50@1.80; best, 2.00@2.50.

Cranberries: Barrels, 13.25@13.50; boxes, mostly 4.00; 14 lb.

Grapes: Demand and movement moderate, market firm. Local and Northern stock: Per lb.: Tokays, 6@7; Muscats, 5@7; Malagas, 6@7; Hamburg, 4@5; Concords, loose lugs, 8@9; Black Cornichons, mostly 6@7; Black Morocco, 5@6; Rose of Peru, 5@6.

Nectarines, lb., best 6@7; others, 5@6.

Peaches: Demand and movement slow. Local, various varieties, 5@7 lb.; others, 4@5; lug boxes, best, 1.75@2.25; others, 1.00@1.50.

Pears: Northern Bartletts, No. 1, 7@8 lb.; No. 2, 5@6 lb.; lug boxes, 1.75@2.00; packed 3.25@3.50.

Pomegranates, lb., 8½@9.

Quinces: Local lug, 1.25@1.50; lb., 4@6.

Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1, small ½ lb.

Lemons: Valley stock: Fancy, packed, 6.50@6.75; loose, 5.50@5.75; local: packed, 3.65@4.00; best, 4.00@4.50; loose, 3.25@3.75. 4.75@5.50; best brands, 5.75@7.00; local

Oranges: Valencias, medium fancy, 4.75@5.00; best brands, 5.75@6.00; local pack, 2.50@3.00.

Grapefruit: Local stock, mostly 5.00@6.00; fancy, 64's-80's mostly 6.00@6.50; 46's and 96's, 4.50@5.00; choice, 2.50 up.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.

No. 2, 26.

Diamond Brand Buds, 34.

Golden State Buds, 34.

1918 No. 1 price was 28; fancy budded, 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14½; baby, 13.

San Francisco Markets

San Francisco, October 14, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 66½

Firsts .....Nominal

Prices extras last week and year ago:

Oct.	7	8	9	10	11	13
'19 ...	66½	66½	66½	67	66½	..
'18 ...	..	63	63	..	..	..

Rcts., wk. ending Oct. 13, 2,777 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats 35

Ore. Triplets 33

Jack, full cream .....25@27

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 71½

Firsts .....Nominal

Extras Pullets 57

Undersized 51½

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago:

Oct.	7	8	9	10	11	13
'19 ...	74	74	73	71½	71½	..
'18 ...	..	65	66	69	..	..

Rcts. wk. ending Oct. 13, 93,750 dozen.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5.

Calves: Light weight, 12@12½; medium, 11@11½; heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 8½@9; ewes, 6½@7.

Hogs—Hard, grain-fed, 100 to 150 lbs., 13½; do, 150 to 225 lbs., 14; do, 225 to 300 lbs., 13; 300 to 400 lbs., 12.

Moran @ Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle—Good grass steers, 1000 to 1200 lbs. and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs—Top packer hogs, hard and well finished, 175 to 250 lbs., 15; 150 to 175 lbs., 14; 250 to 300 lbs., 14; over 300 pounds, 14; under 150 lbs., 14. Usual dock and price discount for other weights and kinds.

POTATOES

Potatoes: Per 100 lbs., Rivers, fancy, 2.40@2.50; choice, 2.25; sweets, 3½@4 lb.

ONIONS

Onions: Onions, fancy, Brown, 2.75; choice, 2.50; Yellow, 2.60; Whites, 2.50; Garlic, 20@21.

VEGETABLES

Wholesale selling price;

Beans: String, 3@8; Limas, 4@5.

Carrots, per sack, 1.00@1.25; long, doz. 40@45.

Cauliflower, 80@85.

Cabbage, doz. 40@55.

Celery, doz., 30@35.

Cucumbers: Per box, 50@65; pickling, 6 per lb., No. 2 grade, 3 lb.; No. 3 grade, 1½.

Corn, sack, 2.00@2.25.

Eggplant, southern, fancy, 75@1.00.

Lettuoe, dozen, 25@35.

Peppers, Bell, lb., 75@1.00.

Peas, lb., 5@6½.

Pumpkins, per sack, 75.

Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 75@85; Bay, 60@1.00.

Squash: Summer, cr., 50@85; Italian, 50@75 box.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 7.00@7.50; choice, 6.00@6.50; standards, 4.00@4.50; lemonettes, 4.00@4.50; grapefruit, fancy, 5.50@6.50; choice, 4.00@5.00; oranges, fancy, 5.25@5.75; choice, 4.25@4.75.

FRESH FRUITS

Wholesale selling price

Apples: Greenings, 1.50@2.00; Bellflowers, 1.50@1.75; Winter Bananas, $2.00@2.50; Newtown Pippins, 2.00@2.25; Jonathans, 2.00@2.50.

Avocados, doz., 5.00@7.00.

Bananas, 7½@8.

Blackberries: So., 13.00@14.00.

Cantaloupes: Per crate, 1.50@1.75; pony crate, 1.25; dozen, 1.50@1.75.

Crandberries, 4.50@5.00 per standard box; barrel, 13.50.

Figs, double layers: 1.00@1.25 box.

Grapes: Thompson Seedless, 1.50@2.00 per box; Malaga, 1.25@1.75, Los Angeles lug; Fontainbleus, 75@1.00 per crate; Rose Peru, 75@1.00; Muscats, 1.25@1.75; Tokays, 1.25@1.75.

Huckleberries, lb., 14@15.

Peaches: Sacramento 85@1.25 per crate, 75@1.50 per box; Cling, 1.00@1.50 per box; Elberta, 1.00@2.00, according to quality.

Pears: Box, 1.50@2.50.

Persimmons, bx., 1.50@1.75.

Plums: Cherry 85@1.00 Clyman, 1.00 1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00 @1.25.

Prunes: Fancy American blues, 2.50@

3.00; choice, 1.00@1.80; according to size and weight.
Pineapples, doz., 4.00@5.00.
Pomegranates, 1.00@2.00 box.
Quinces, bx., 1.00@1.50.
Raspberries: Ch., 14.00@15.00.
Strawberries: Ch., 18.00.
Watermelons: Watsons, lb., 1@1½.

DRIED FRUITS

Prunes:

Prune prices announced by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.

Peaches:

Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1, 1920, are as follows:
Standard yellows, 14¾c; Muirs, 15c.
Choice yellows, 15½c; Muirs, 15½c.
Fancy yellows, 16½c; Muirs, 17½c.
Extra fancy yellows, 17¾c; Muirs, 18¾c.
Slabs, yellows, 14½c.
For "practically peeled" add 1½c per pound (any grade).
Prices above are all bulk basis.
For packing in 50-pound or 25 kilo boxes add 1 cent per pound.
25-pound or 12½ kilo boxes, add 1¼c per pound.
10-pound boxes, add 2c per pound.
Blue ribbon peaches packed 2-pound carons, 12 per case, $10 per case.
Blue ribbon peaches packed 2-pound cartons, 24 per case, $10 per case.
Bakers' special, "practically peeled," 16¾c per pound, bulk basis.

Apples:

Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; Fancy (in 50s), 23@23½.

Figs:

White: Cooking (in 50s), 15@16; choice (in 50s) 17@18, extra choice (in 50s) 19@20, fancy (in 50s) 21@22, extra fancy (in 50s) 23@24, Bricks, 12 No. 10s, 1.60@1.67½; bricks, 24 No. 8s 2.55@2.65, bricks 50 No. 6s 4.00@4.15, bricks, 70 No. 4s 4.20@4.35, layers, No. 10 2.50@2.80. Calimyrna: Cooking (in 50s) 19, choice (in 50s) 23, extra choice (in 50s) 24, fancy (in 50s) 26, extra fancy (in 50s) 27½, bricks, 10 1-lb. 2.75, layers, No. 10 2.95@3.20. Black: Standard 14, choice 17@18, extra choice 18@19, fancy 19@20.

Pears:

Standard 20, choice 22½, extra choice 24, fancy 26@27.

Raisins:

California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package 15, fancy, 16s, package 15, fancy, 12s, package 11¾, choice, 16s, package 14½, choice, 12s, package 11⅜, bulk, fancy in 25s 14¼, bulk, bakers, in 25s, 13½, bulk, Malagas and Feherzagos, in 25s 13. Loose Muscatels: 4-crown, in 25s 14¼, 3-crown, in 25s 13¾, 2-crown, in 25s, 13¼, 1-crown, recleaned, in 25s 14. Seedless: Thompsons, 16s 15½, Thompsons, 12s 12⅛, Thompsons, bulk, recleaned, in 25s 14½, Thompsons, bulk, bakers, in 25s 15½. Bleached Thompsons: Choice, in 25s, sulfur 18, Fancy, in 25s, sulfur 18½, Extra Fancy, in 25s, sulfur 21, soda dipped, in 25s 17¾, oil dipped, in 25s 17¾. Sultanas, 16s 15¼. Sultanas, bulk, in 25s 14¼. Layers: 6-crown, flat pack, 20s, per box 4.05, 6-crown, flat, 10s, per box 2.20, 6-crown, flat pack, 5s, per box 1.20, 4-crown, flat pack, 20s, per box 3.20, 4-crown, flat pack, 10s, per box 1.75, 4-crown, flat pack, 5s, per box 1.00, 3-crown, tray pack, 20s, per box 3.10, 3-crown, flat pack, 20s, per box 2.95, 3-crown, flat pack, 10s, per box 1.60, 3-crown, flat pack, 5s, per box 95, clusters, 20-1s, cartons 3.45, clusters, 12-2s, cartons 3.80, clusters, 4-5s, cartons 4.50, vineyard run, 100s 13.00.

ALMONDS

California Almond Growers Exchange opening prices:
Nonparell @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HAY

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the Hay Market—for prices to consumer, charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay (light 5-wire bales)	17.50@19.00
No. 1 Wheat or Wheat and Oat Hay	15.00@18.00
No. 2 Wheat or Wheat and Oat Hay	12.00@15.00
Choice Tame Oat Hay	15.00@18.00
Other Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@14.00
Barley Hay	12.00@16.00
Alfalfa Hay	17.00@22.00
Stock Hay	8.00@12.00
No. 1 Barley Straw, bale	.50@80

Citrus Markets

Los Angeles, Oct. 15, 1919.

The demand for Valencias is holding up exceptionally well, and every promise now is that the nearly 3,000 cars yet to go will command satisfactory price. The stock in hand is gratifying in view of the fact that Navels will be rather late. Valencias are now commanding around $5 to $5.25 f. o. b. California points. Floridas are arriving contrary to the effort of many shippers in the state to prevent shipping in of green stuff.

The lemon market is also strong, running around $6.50 f. o. b. shipping points.

Shipments

Shipments of oranges from Southern California to date since November 1, 1918: 33,688 cars, lemons 9,410, total 43,098. To same date last season: oranges 14,157, lemons 5,762, total 19,919. Central California this season: Oranges, 4,427, lemons 354, total 4,781. To same date last season: oranges, 2,539, lemons 115, total 2,654. Northern California: oranges, 244, lemons 2, total 246. Last year same date: oranges, 203.

AT THE AUCTIONS

October 9

New York: 13 or., 1 lem. Val. 2.50-7.30, lem. 4.60-6.50.
St. Louis: 1 or., 1 lem. Val. 3.90-5.70, lem. 5.65-5.80.

October 10

New York: 15 or., 1 lem. Val. 2.25-7.45, grapefruit 1.60, lem. 7.00-7.90.
Boston: 4 or. Val. 4.85-7.60.
Pittsburg: 1 or., 1 lem. Val. 4.20, lem. 7.55-9.10.
St. Louis: 2 or. Val. 2.95-5.40.

October 14

New York: 13 or. Val. 3.60-8.85.
Boston: 10 or., 4 lem. Val. 4.40-8.25, grapefruit 1.85-1.90, lem. 7.65-8.65.
Philadelphia: 6 or., 1 lem. Val. 4.10-6.65, lem. 7.80.

BRADSHAW TO SELL HOLSTEINS

J. R. Bradshaw, Phoenix, Arizona, president of Arizona Holstein Breeders Association, has decided to disperse his famous herd of registered Holsteins at public sale, owing to the demands made upon his time by his many other business interests. The herd numbers about 100 head, the females being mostly daughters of a 36 pound bull, with some daughters of Roderick Lincoln and Johanna McKinley Segis.

The outstanding feature of the sale will be the herd sire King Lilith Pontiac Segis and all of his daughters. This royally bred bull is a full brother to Senator Hackney's famous sire King Segis Pontiac Conut, whose daughters have broken more than 100 world's records within the past few years. King Lilith Pontiac Segis is only a four year old, is a high class individual nearly white in color and his calves are especially promising. All the bred females in the sale are in calf to him. The sale will be held near Los Angeles on Thursday, December 4, under the management of California Breeders Sales and Pedigree Co. Rhoades & Rhoades will be the auctioneers.

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Registered Holstein Friesian-Cattle

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100 Young Registered Holstein-Friesian Cows 100

63 of them now on Year's Test. Many have made creditable Milk and Butter Records.

A large number are bred to our great Herd Sire—Finderne Soldene Pontiac Valdessa, a son of a World's Record Cow, and whose Sire's Dam and Granddam are Both World's Record Cows.

They are sired by 52 different well bred Eastern Sires, carrying the Blood that has made the Holstein Breed famous for Milk and Butter production.

These cows were carefully selected for Our Foundation Herd. Not one over three years old. They are increasing in value each year. Their Milk and Butter Production will still increase.

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Semi-solid buttermilk is pure creamery buttermilk, with nothing added—only the water is taken away. It is not modified by the addition of sulphuric acid or any other preservative. Its own NATURAL LACTIC ACID keeps it fresh.

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We guarantee that semi-solid buttermilk is pure and unadulterated, sterilized and pasteurized. It is a SAFE feed, and you will be satisfied with the results from feeding it.

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FOR LAYING HENS—The egg production increases at an astonishing rate. Keep accurate account, and TRY IT.

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We know what SEMI-SOLID BUTTERMILK will do. Don't be skeptical, but try it, to be convinced.

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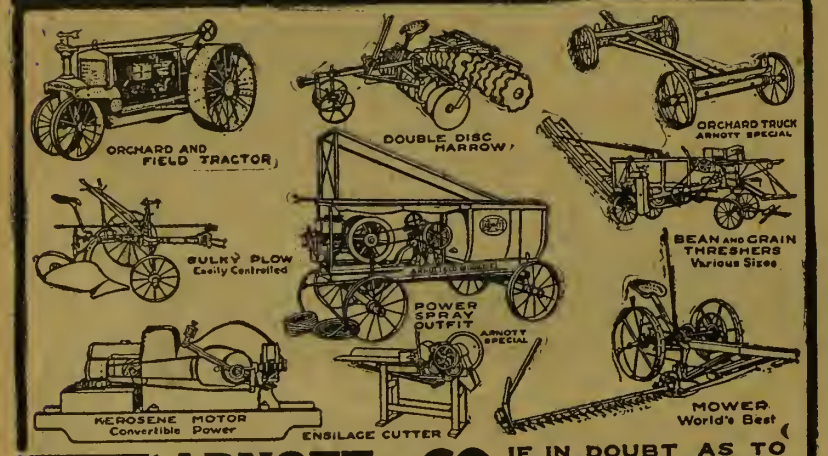

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As to Brooder Houses

By Jean A. Koethen

THERE is no more encouraging sign of the increasing interest in better stock and equipment than the inquiries which are already coming in regarding preparations for hatching. Fall is the time for looking ahead and getting things in order for the January hatch. If there are to be January chicks the incubators must be started in December or at the latest by New Years. Pens should be marked at least a month before this, and planning begins in October.

A Cultivator reader writes for the description of "a small brooder house which I could install myself, one that would be cheap, effective and simple and would accommodate three or four hundred chicks," and the cost of installation.

Cost figures at present are out of the question. All building materials cost more than they did a year ago, and they may cost more by the time this is in print.

Figure 1. Typical Brooder House

May be built of either battened boards or tongue and groove lumber, and of any length. May be roofed with shingles or with rough boards covered with tar paper.

Two Types of House

Two types of brooder house have been in general use for some years; the long house, which is used with the hot water pipe brooding system, and and the square or nearly square house in which heat is provided by large gasoline or distillate stoves.

The long brooder house is of the type shown in Figure One. It may have three windows or half a dozen or as many more as one likes, and each window may consist of a single sash or of two. The point is that plenty of sunshine be allowed to enter the two or three foot run which is behind the window and is designed to accommodate from 50 to 100 chicks according to the size of brooder used, Many poultry men install 100 chick brooders at the inside end of these runs, but put only 50 chicks into them, for 100 chicks is the very outside limit of the capacity of a 100 chick brooder. If so many are put in part of the brood must be moved very soon.

The house in the illustration is about 18 feet long by eight or ten feet deep. If filled to capacity it would hold 600 chicks. The plan followed by poultry men who raise a large number of chicks in such a house is to have a large number of runs, some wider than others. When the chicks come from the incubator they are placed in the small brooder runs, 600 in each. After two or three weeks, when they begin to crowd the brooder, they are moved to two larger runs, and the small one refilled with little chicks. I have seen long houses containing 20 or more such runs, all filled with chicks of various ages. In a large house, an alley runs through the middle. In a small one it is at the rear of the brooders.

No one should attempt to install such a brooder house as this from a printed description. One can only get an adequate idea of it by examination and it would be better to see more than one, for every poultry man has ideas of his own and works them out as best he can.

The square house which is heated by a large brooder stove may be eight by ten feet or a little larger. Bulletins describing this method of brooding have been issued by the Cornell station at Ithaca, New York, the Iowa station at Ames, the California station at Berkeley, and probably by every other station. Since gasoline and distillate became so dear and of such poor quality these large stoves are being discarded by many who thought highly of them before, and their users are turning to electricity or to fireless brooding. The same objection applies to the hot water brooders for they are heated as a rule by gasoline and distillate stoves, but the heat is a little more easily controlled, perhaps, than in stove brooding.

I remember visiting a ranch last winter when the owner had taken out

Figure 2. Home-made Brooder Coop

Warmed by sunshine and one electric globe. Is cheap, effective and simple.

Greatest trappers' contest ever offered—coste nothing to enter—write today for particulars.

Abraham "Smoke Pump" is the greatest device for "smoking-'em-out" ever invented. One can of Abraham Improved "Smoke Powder" goes with every Smoke Pump. Instructions how to uee our Smoke Pump and reasons why ordinary smokers are not successful sent with every order. Price $2.00 postpaid.

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You must have this new book "Fur Facts." Contains good trapping stories by Geo. J. Tneissen and others and valuable information. You get our new catalog free also. Best hunters' and trappers' guide published. Not a penny to pay for it. Gives you lowest prices on supplies—Traps, Guns, Knives, Hunting Coats, Heavy Coats, Suits for all weather, Fox Horns, Turkey and Duck Calls—everything you want for trapping.

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We will put your name on our mailing list for Abraham's Weekly Reports. They keep you posted—right up-to-date on prices, etc.

Just a post card—that's all you need to get all this—FREE—Fur Facts, the Catalog and the Weekly Reports. And don't forget the Pump. Ask for offer on that. Now get your post card into the mail—quick.

Price $ 2 Postpaid

Abraham Fur Co.
213-215 N. Main St. Dept. 282
St. Louis, U.S.A.
"Ship your furs to Abraham"

Why Hens Won't Lay When Eggs Are High Priced

They miss the green of a summer diet, they become lazy laggards, have not the vitality to molt quickly, or digest properly the usual feed. They lack the ability to exercise, and eat and drink what you give them without relish. Laymore, the greatest Egg Tonic, persists in making layers out of winter laggards. It adds to their vitality, sharpens their appetite, and tones up the laying organs without force or injury.

Two full packages is sufficient for 100 hens three months, and cost but $1.00

(delivery charges and war tax paid.) Guaranteed to give results or money refunded. Write today to Mayer's Hatchery, 213 First Ave. N., Route 36, Minneapolis, Minn., for these two packages, and it is not necessary to send any money with the order. Simply say, "I'll pay when the packages arrive," and delivery charges will be paid.

Eggo-O-Latum Keeps Eggs One Year

It costs only one cent per dozen eggs to use Egg-o-latum. There is no other expense. Eggs are kept in carton or box in cellar. Eggs may be boiled, poached or used in any other way, just like fresh eggs. Simply rubbed on the eggs—a dozen per minute. A 50c jar is sufficient for 50 dozen eggs. At Drug, Seed and Poultry Supply Stores or postpaid.

GEO. H. LEE CO., Dept. 418. OMAHA, NEB.

HOW TO BUILD A FARM POWER HOUSE
BOOK FREE
Expert advice every farmer should have on arranging pulleys and belts, line shafting and governors; how to install gas engines for greatest power; floor plans, full instructions how to build. Blue Prints free for any plan you select. Complete, easy to understand, very valuable. FREE if you send us your name. Write today.
Cedar Rapids Foundry & Machine Co.,
Dept. 732 Cedar Rapids, Iowa.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

his entire hot water brooder system and installed electricity. One of his reasons for this was the poor quality of the fuel.

On another ranch I saw a brooder house, similar to that in Figure One, only more simple. In fact, it was just the plainest shed-roofed structure with large windows on the south. This house was divided into four or five little runs for chicks of different ages, and each run had its own brooder stove, a good sized one for the littlest chicks and smaller ones for the oldest chicks. I think these were coal stoves but am not certain. If they were not they might have been.

A Home Made Brooder House

Now, I have my suspicions that my correspondent wants, for his 300 or 400 chicks something more simple and economical than any I have mentioned, and he will find it illustrated in Figure Two.

This is a little house which the owner told me was built a year ago for about $20. If it were built by itself instead of against another building it would cost a little more. It is about six feet long by three feet deep and not over four feet high at the highest point.

The swinging door, which is hinged at the gable, may be closed, leaving the chicks only the sunshine that comes through the glass at the end of each run, or it may be wide open, according to the weather. The runs are about 20 inches long, and at the rear end of each is a simple brooder box 12 or 13 inches square, covered with a quilt. The only heat in this brooder house, beside the heat of the sun comes from a large electric light globe. When the door is closed at night and the light turned on the chicks are very comfortable.

I am not sure that such a house would be warm enough in dark, foggy or rainy weather, but it works admirably in sunny weather.

NATIONAL EGG LAYING CONTEST

Mountain Grove, Missouri, report for September. The total number of eggs laid in September was 3,794, or an average of 12.65 per hen. A pen of Rhode Island Whites from Connecticut won the cup for September by laying 108 eggs during the month.

The leading pens of each variety for September were:

R. I. Whites, Connecticut, 108 eggs; White Wyandottes, Missouri, 103; Buff Leghorns, Missouri, 93; Barred Rocks, Missouri, 88; White Rocks, Missouri, 87; Brown Leghorns, Missouri, 85; Anconas, Missouri, 84; Buff Wyandottes, Vermont, 84; Silver Wyandottes, Missouri, 83; S. C. Reds, Iowa, 83; S. C. White Leghorns, Missouri, 75; R. C. White Leghorns, Missouri, 73; Black Langshans, Missouri, 65; Buff Orpingtons, Missouri, 63.

The ten leading pens to date are: R. I. Whites, Connecticut, 1,147 eggs; R. I. Whites, Missouri, 1,111; R. C. White Leghorns, Missouri, 1,095; R. C. White Leghorns, Missouri, 1,070; White Rocks, Missouri, 1,070; White Rocks, Missouri, 1,020; White Wyandottes, Illinois, 1,012; Silver Wyandottes, Missouri, 980; Anconas, Missouri, 976; Brown Leghorns, Kansas, 965.

DIP THAT CHICK!

"Dip that chick!" It isn't done just for the sake of making a rhyme for "dip that tick," either. Dipping chickens is likely to become more general than dipping cattle, because the chicken louse is a more widely distributed insect than the cattle tick. The "dip" consists of one ounce of sodium fluoride to the gallon of water, which should be at a temperature of 70 to 85 degrees. The dipping should be done on a clear, warm day—never on a cold day. The old way of getting rid of chicken lice was by dusting with dry sodium fluoride. It was effective, but in the case of large flocks it was slow and wasteful, a great deal of the dusting material being inevitably lost.

THE POINTS OF LIKENESS

"Can you tell me why a clock is like a vain, pretty woman?"

"I guess it is because it is all face and figure, has no head to speak of, is hard to stop when once it is wound up, and has a striking way of calling attention to itself every hour in the day."

MALTHOID *and* RU-BER-OID READY ROOFINGS

Ten years from now

You can judge the quality of ready roofing only after it has been tested in actual use. When you buy it, you must rely for your selection upon the experience of others and the reputation of the manufacturer.

The ideal of The Paraffine Companies is to make Malthoid and Ru-ber-oid the best ready roofings that can be made. The Company has succeeded, as has been proved thousands of times under widely varying conditions of climate and use.

If you roof your farm buildings or home or factory with Malthoid or Ru-ber-oid, in ten years from now you will *know* why it has become the recognized standard of ready roofing. Malthoid and Ru-ber-oid are made to last. They will not dry out or rot and they are particularly fire-resistant. If painted every few years, they will give good service indefinitely. Malthoid and Ru-ber-oid have met successfully every test of time and service to which they have been subjected.

The reputation of The Paraffine Companies stands back of Malthoid and Ru-ber-oid. They are the best ready roofings that we know how to make.

THE PARAFFINE COMPANIES, INC.
San Francisco

PABCO PRODUCTS

Roofings, Felts
Building Papers
Waterproofing Materials
Wall-Board
Floor Covering
ndustrial Paints
Box Board
Paper Boxes
Fibre Containers

EACH THE STANDARD OF ITS KIND

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

'Chain'

UNITED STATES RUBBER COMPANY
US
RUBBER SYSTEM
AND ASSOCIATED COMPANIES

When There's Hard Work To Be Done

Folks are getting the kind of service they want and have a right to expect from United States Tires.

That's the one big reason for United States Tire popularity.

Where there's hard work to be done—work that requires tire strength and tire dependability,

—there you'll find United States Tires.

United States Tires are <u>good</u> tires by right of *might*. They are built to give wear and service—to resist hard use—to save money in *extra* work and *extra* miles.

There are five famous types of United States Tires—one for every need of price or use.

United States Tires are <u>Good</u> Tires

'Royal Cord' 'Nobby' 'Chain' 'Usco' 'Plain'

CA

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — October 25, 1919 — No. 17

Site of the Iron Canyon Dam, Tehama County

Iron Canyon is more than an irrigation project; it is a hydro electric power project and a flood control project as well, designed not merely to develop one of the uses of the great dam site on the Sacramento River at that point but to coordinate several uses. The plan of development proposed includes a power plant of 70,000 horse power gross capacity. The Reclamation Service report (1914) estimated a net annual return from this feature of $610,000 or 5.87 per cent on the entire cost of dam and reservoir with power plant installation and flood control gates ($10,385,000.)

More than 13,000 men are building your Maxwell

IMAGINE 13,000 men devoting themselves to a single Maxwell. Yet that is the picture which a little journey through the eight great Maxwell plants supplies.

If they built but that one car in a day its cost to you would represent a king's ransom.

But they are so well organized, their work so very definite, they are so expert in the special one thing they do, and they are aided by so many thousands of uncanny and superhuman machines, whose accuracy is down to 1/1000 of an inch, that you pay but a small price for a Maxwell.

A great aid to the economy of manufacture is the use of many, many millions of dollars so that a 10-cent piece saved on a bit of material often runs into amazing figures.

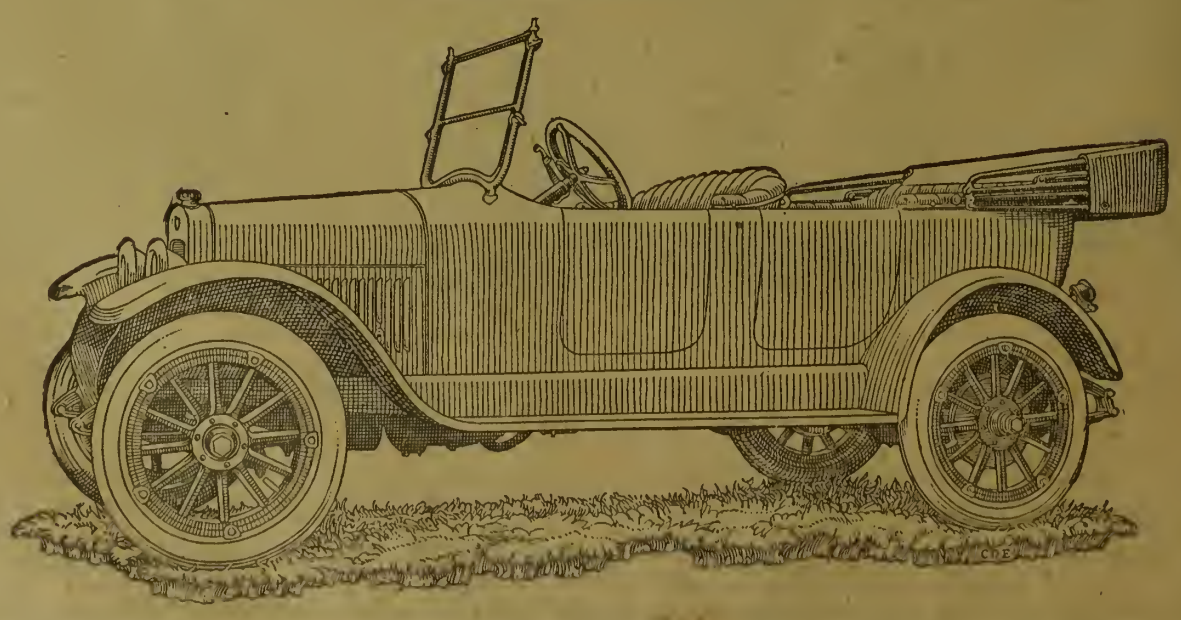
Thus the big staff of purchasing experts for Maxwell become your purchasing experts and the saving goes on to you in the price.

$985 is indeed a small sum to pay for a great value in a great car like Maxwell.

Maxwell

More miles per gallon
More miles on tires

MAXWELL MOTOR COMPANY, Inc.
DETROIT, MICHIGAN



California Cultivator

Vol. LIII, No. 17 | Los Angeles, October 25, 1919 | One Dollar Yearly

California for Americans---or Japanese?

Views of the Press and People of California

DID American pioneers reclaim California's hills and valleys and develop the wonderful resources of the state to make a Japanese province? This question may seem, in the eyes of some of our Eastern friends, to exaggerate the situation. Some of them think that California is having a fit of hysterics.

Fortunately, the number, even in the East, who refuse to open their eyes to the menace to the American nation is growing less every day. The facts which have been made known through the public press in the utterances of Senator Phelan and others have been educational, and in some sections of the East at least the question, "Why this outcry?" is receiving some serious study.

An answer will be given at the next meeting of the state legislature, if not sooner, by a commission appointed by Governor Stephens to investigate the situation in California. Its findings will also be forwarded to the national congress for its use in determining whether to maintain a strong Pacific fleet and possibly to bring about a change in the constitution of the United States.

The state market director of California has found that 90 per cent of the acreage in this state devoted to vegetable seed growing is now in the hands of Japanese farmers. He has given notice of the organization of the Japanese Agricultural Association which will largely control the beet, carrot, onion and tomato output of the state.

Americans Balk.

The president of the Fourteen Counties (Sacramento Valley) Association in a recent issue of the Colusa Sun cites the fact that "40 per cent of Northern California rice is controlled by Japanese and in Colusa many of the big stores are owned by the Orientals. No more white people are taking up dwellings in Placer County, where there are two Japanese births to one increase in the white population.

"The native Americans balk at remaining in communities infested by Japanese squalor and Japanese morals."

Senator Phelan has estimated that of the 150,000 Japanese in the United States 100,000 live in California. Another 110,000 occupy the Hawaiian Islands. An investigator has found [illegible] with a birth rate in California h[illegible]at of today the Japanese will in[illegible]se so that in 140 years there wi[illegible] be 100,000,000 in the United States—and this without further immigration.

McClatchie Says

McClatchie of the Sacramento Bee says:

"The reasons are that 90 per cent of the Japanese admitted to the United States in the past 20 years were between 14 and 44 years of age. They were in the vigor of life, and with imported 'picture brides' and the incentive of American citizenship for native born, established a high birth rate. The clearly defined policy of Japan in 'peaceful penetration' of this country will continue to send over the same class of immigrants who will rapidly reproduce; and conditions here as to land ownership and control will encourage such increase. The continued influx of this vigorous element alone would maintain among the Japanese here a higher birth rate than in Japan, and when the Japanese birth rate here drops to the standard in Japan, or even lower, it will still be far above the average white birth rate here."

"Scrap of Paper"

Seeking information regarding the industrial invasion, the senate committee on immigratioon asked the federal commissioner on immigration, Mr. Caminetti, for a report, and he submitted the following report signed by John W. Abercombie, assistant secretary of labor, to the effect that during the 12 months ending June 30, 1919, the agents of the federal government apprehended 9678 Japanese who were in the country illegally and secured their deportation.

"Those figures refer to the ones caught and convicted; it is fair to assume that at least an equal number escaped detection and were added to the constantly swelling Japanese population of the Pacific States. No account is taken of the number of picture brides who arrived and are diligently following the biblical injunction to be fruitful and multiply."

More Gentleman's Agreement

On this the Los Angeles Times makes editorial comment:

"No federal census of the Japanese population of California has been taken since 1910; but that federal report concerning the number of deportations should be in itself convincing proof that the 'gentlemen's agreement' restricting Japanese immigration is worth about as much as a peace treaty signed by a Hohenzollern. Without attempting to fix the blame, the facts are that within 12 months nearly 10,000 Japanese were found in this country who had violated that agreement. The methods taken by the Japanese government to prevent violation have been indisputably ineffective.

"Since the federal census there has been a rise of 1000 per cent in the Japanese birth rate in California and an estimated increase of 1500 per cent in the acreage owned or leased by Japanese in this state. Such evidences of a Japanese industrial invasion are indisputable. The records of the state health office show that nearly 5000 children of Japanese parentage were born in California during the last 12 months. When that 'gentlemen's agreement' was supposed to go into effect the number of children of Japanese parentage born annually in the state was less than 200."

3000 Per Cent

The Lodi News says: "The swiftness with which Japan is populating California is given an example in the county's records for the past six months. Of the 282 children born in San Joaquin since January 1, 104 were Japanese.

"The Japanese births in California have increased 3000 per cent since 1900.

"San Joaquin County is not alone in having the Japanese births exceed the American births. Los Angeles County has the same condition, according to recent figures.

"A meeting of the Fourteen Counties Association has been called to take up plans to check Oriental operations. It is pointed out by members of this organization that the anti-Japanese land laws have proved useless. In the first place, the Japanese, unable to buy land, formed corporations with dummy white directors. This worked very well."

A Concrete Example

Only last week, in a Stockton bank, a Japanese and his wife asked for $1000 credit.

"What do you wish it for?" asked the cashier.

"To buy some land," replied the Japanese.

"You can't do that, for it's against the law," said the banker.

"My wife, she have baby in a few months. Then we buy land," the Japanese said.

Suggestions

McClatchie's investigations have led him to make the following suggestions:

"The evils from continued Japanese immigration, either under the present agreement with Japan or under a percentage admission plan, with citizenship, as proposed by the League for Constructive Immigration Legislation, are so serious that only prompt and decisive measures will be of avail. Temporizing with the problem will inevitably lead to the continued absorbing of communities and industries by the Japanese, as already commenced on the Pacific coast. The white race is helpless against the economic competition, high birth rate and unassimilable character of the Japanese, if admitted to this country.

"These, then are the proposed remedies. Less drastic measures will not avail:

"1. Cancellation of the 'Gentlemen's Agreement.'

"This agreement was entered into for the avowed purpose of keeping Japanese labor, skilled and unskilled, out of continental United States. Its letter and its spirit are being grossly violated. Even if they were not, the fact that the Japanese population of the United States has increased sixfold since 1900 while the Chinese population has decreased over one-half, is sufficient proof that the agreement is not filling its avowed purpose of Japanese exclusion, and that it should be abrogated.

"2. Exclusion of 'picture brides.'

"They are being used for breeding purposes in carrying out Japan's clearly defined policy of 'peacefully penetrating' the United States.

"3. Rigorous exclusion of Japanese immigrants.

"Let us follow in this matter the example set by Canada and Australia and keep them out.

"4. Confirmation and legalization of the policy that Asiatics shall be forever barred from American citizenship.

"5. Amendment to Section 1 of Article 14 of the federal constitution providing that no child born in the United States of foreign parents shall be considered an American citizen unless both parents are of a race that is eligible to citizenship.

"It is certainly inconsistent to concede that a Japanese who comes to this country at one year of age is undesirable material for American citizenship, and yet confer such citizenship unasked on the Japanese who is born here.

"6. Provide such labor as may be necessary for the development and prosperity of the country, and which cannot be had here or secured from desirable immigration, by bringing in Chinese for a fixed term of years, confining their activities to certain localities and certain industries so that they cannot offer an economic menace to American labor, and send them back to China when the need for their services has ceased."

In Imperial

Editor E. F. Howe of the Imperial Valley has recommended the formation of an alien regulation league. His suggestion is to secure enactment by the legislatures of the several states providing "that the sheriff of any county, when due evidence is presented to him that any one alien race in any city ward, any township or any other political subdivision in the state under his jurisdiction numbers in excess of five per cent of the total population of that political subdivision, shall issue a proclamation setting forth that fact, naming the alien race which exceeds five per cent of the population, and thereafter, until that alien race is under five per cent of the population (when the said sheriff shall annul his proclamation by issuing a new proclamation in accordance with the facts) it shall be illegal for the owner of any land or building to rent or lease to any such alien or permit to be occupied by any such alien for more than one year following such proclamation, any such property; and any lease to such alien previously made shall not be construed as permitting personal occupancy beyond the period of one year from said proclamation; it shall also

Continued on Page 546.

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901. Combined with California Cultivator 1916

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Saturday, Oct. 25, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

There is a wonderful amount of information to be secured by studying a map of California, especially a relief map. It becomes quickly apparent that this state has largely given up its surface to mountains. When we note the wonderful productivity of California's soils under California's sun we sometimes regret the waste places of the mountains, but those same mountains are largely responsible for the wonderful wealth of the valleys. One of the reasons for the great asset we have in the mountains is the opportunity they afford for storing winter's floods for summer's crops. Advantage has been taken of some of these opportunities and to a limited degree the floods have been stored. No more important question faces our people than this one of how can these floods be stored more completely. A partial answer is given by the extreme northern end of the Sacramento Valley in its effort to secure fullest utilization of the waters in the great Iron Canyon. Many surveys have been made and the work definitely outlined and in the near future the Iron Canyon project will give of its wealth to reclaim thousands of acres.

HOUR GAINED

Tonight, or rather tomorrow morning, October 26, at two o'clock we will all rise from our beds and add an hour to our lives by turning the clocks back. Since the "daylight saving" law has been repealed it is to be presumed that hereafter American farmers will milk the cows according to good old sun time.

BUY TREES

Where shall we get trees for the making of our orchards? This is a question which the nurserymen of the United States are being asked these days. The war and the labor situation during 1917, 1918, and even the present year, prevented large operations along all lines which did not result in almost immediate production of food. Besides the nurserymen were compelled to ask such questions as: How long will the war last; what will be the demand for our stock once the war is over; and others to which no human could give answer.

The result is shortage of stock, though to a degree greater than anticipated. It is reported to us on good authority that but little more than 25 per cent of the needs of the country for trees can be supplied by nurserymen. Orders are already being received which will greatly reduce these stocks. Fortunately California is in much better condition than other states. In citrus trees there is a fairly good supply, but the demand is increasing every day, and long before the planting season it is presumed that available stock for next spring's delivery will be exhausted. Owing to the wine situation there will be a great reduction in grape planting, but there is doubt if there will be sufficient stock of table grapes to meet the regular demand.

The wise planter is already making investigation as to where next season's planting is to be secured.

AMERICANS OR JAPANESE?

America is now squarely confronted by the problem: "America for Americans or Japanese?" The most serious feature of the problem is that the greater part of the country has no realization whatever that there is a problem. Californians are awakening and they are often accused of being actuated by race prejudice. We do not believe that race prejudice is responsible for the one-hundredth part of the discussion which is now filling our papers and being voiced on our platforms. It is simply realization of the fact that oil and water will not mix, and the endeavor is being made to awaken the people of the remainder of the country to this fact that other sections are realizing.

Even the Transvaal in South Africa is worried as to her situation. A dispatch from Pretoria dated October 14 says: "At a mass meeting held here today to consider the question of Asiatics in the Transvaal, a resolution was adopted declaring that the meeting 'views with the greatest alarm the serious menace to the economic and social welfare of the inhabitants of the Transvaal occasioned by the continued encroachment of Asiatics and advocates immediate measures to deal with this question.'"

In the same news columns appears this communication from the Hawaiian Islands: "Within 14 years Hawaiian born Japanese will hold the political control of this territory, according to Rev. Umetaro Okumura, a prominent Japanese clergyman, speaking at a church convention here. To prepare for the inevitable, declared Rev. Mr. Okumura, it is essential that greater efforts be made to Americanize the younger Japanese who are growing into the franchise."

Views of California newspapers and California people are presented on third page of this issue, as but a slight indication of the expressions which are now filling our papers.

We have no editorial comment on the situation other than this that it is time for Californians who are Americans to do some serious thinking.

ALMONDS

Since August 13, when the first car of almonds went out, California has been shipping some of the finest nuts ever out of the state. The crop this year will total a value of $3,000,000.

H. C. OF L.

The profiteer smugly remarks: "We have been having one big war dance; now we must pay the fiddler." It may be, and we believe that all are willing to chip in to pay, notwithstanding the awful discord made by the musicians. But the trouble is the infernal selfishness of so many dealers is inducing them to take advantage of the people's helplessness and simply bludgeon them into handing over every penny.

THE TIN CAN

In the forties the skeletons of the buffalo across the plains marked the course of the trails to the Golden West. Later an equally accurate indicator was secured in the deposits of tin cans which made nearly a continuous trail from the Middle West through the Rockies. The tin plate used in making these cans was almost entirely manufactured in England. Times have changed, however, and today's tin plate is produced, nearly to three-fourths of the entire output, within the boundaries of the United States. And in the manufacture of the contents of the tins, we may add that California can allow a long handicap to any other section and still prove the winner.

SUGAR

The sugar situation seems to be even worse than during the war when we were on rations. Then it was possible to buy sufficient for any reasonable canning campaign. Today most grocers have a two-pound limit regardless of canning needs.

The Hawaiian crop for 1919 is estimated at 600,000 tons, compared with 576,000 tons last year. However, the Philippine crop is short, being 150,000 tons, compared with 216,000 tons last year. The tonnage of sugar in California, Utah and Idaho will aggregate 350,000 tons. All told the production of the United States will be considerably better than 1,000,000 tons, or something like 12,000 tons above the average of the past six years. Cuba is our great sugar producer. There has been no serious disaster in that section so that the sugar shortage of the western hemisphere is largely in the minds of the trade. Notwithstanding this the world is hungry for sugar and the prediction is that great advance in price must be made.

FIRE PREVENTION

The management of the recent "Fire Prevention Week' used as one of its slogans, "Let's stop building to burn." That slogan applies with peculiar emphasis to California. The state has had an awful experience with fires this year. These are principally in its mountain forests, and at first it may seem that the slogan of those who are looking at fire prevention from a commercial standpoint does not apply. But, unfortunately, even in our mountain forests we sometimes build to burn. There has been a campaign for many years; there have been plans of planting; there have also been plans for creating firebreaks, or great trails over mountain ridges to prevent the onsweep of the fire once it is started. This year's experience has shown the woeful inadequacy of some of these preventive measures. Thousands of fire fighters were unable to cope with the fires, once they were started and swept on with the strong wind.

May not the lessons be more thoroughly learned and may we not stop building forests to burn? Along those lines we may refer to the fact that Montana and northern Idaho are now employing 4,500 extra men as fire fighters and fire preventers. Nearly a score have lost their lives on the Pacific Coast this year as a result of forest fires. It is time we gave their prevention more serious thought.

REPLANTING

Already plans are in the making for thorough reforesting of the burned areas in the Sierra Madre north and east of Los Angeles. High school boys have been organized into parties for securing seed which will later be planted in mountain nurseries and the young trees placed on the mountain side.

Mr. Curtis makes a suggestion on Page 510 of this issue regarding the planting of incombustible vegetation His suggestions may be of value though as to whether mesquite which grows on the floor of the desert under almost completely arid conditions will do well on mountain sides, there is a question calling for a test.

On the other hand another suggestion comes from Dr. Petrie that the tested and found valuable eucalyptus should be planted on these burned over areas. He asks: "Why not plant eucalyptus or the acacia? Either would grow faster than our ordinary mountain shrubbery, and the eucalyptus would make valuable timber in a few years. Thousands of acres of our waste land that can not be cultivated could be turned to profit by planting the eucalyptus on it."

Here surely there is opportunity to question as to the wisdom of planting a tree which is so combustible as the oil producing eucalyptus. The black wood, on the other hand, might prove of great economic worth.

A LETTER FROM THE NORTHERN CALIFORNIA MILK PRODUCERS' ASSOCIATION

"We notice in the issue of the California Cultivator under date of September 27 an editorial entitled "Bunk" by R. P. Royce. We certainly wish to congratulate the Cultivator and Mr. Royce on an article like this which shows very clearly and without any partisanship the issue that the dairyman is now facing."

Poultry Raising in Citrus Orchards

By Robert W. Hodgson

FORTY years of experience in the production of citrus fruits in Southern California has demonstrated no one fact more conclusively than that citrus trees require constant and regular fertilization if they are to continue to produce profitable crops. Failure to fertilize other classes of orchard fruits may not result in disaster for years, but the omission of the addition of suitable fertilizers to bearing citrus orchards is speedily reflected in the profits returned to the owner. And there is no orchard practice the necessity of which is more generally agreed upon by citrus growers, as witnessed by the hundreds of thousands of dollars annually expended for fertilizers to be applied to citrus orchards. In nine cases out of ten the grower who is making a conspicuous success is the one who is intelligently and adequately feeding his trees.

Necessity of Organic Matter.

All the more recent investigational work points strongly to the very great importance of the annual incorporation into our citrus orchard soils of large amounts of readily decayable organic matter. No longer is it felt that the addition of fertilizers containing principally phosphorus or potassium is of great importance. A 12 year citrus fertilizer experiment at the Riverside experiment station has failed to show any marked beneficial results following the application of these elements in rather large amounts. Moreover, the presence of large quantities of decaying organic matter in the soil acts to set free considerable amounts of phosphoric acid and potash previously unavailable which, at present prices for these elements, certainly constitutes the cheapest method of providing them even were they needed. Without sufficient organic matter no soil, even though it be adequately supplied with all the mineral elements, can support plant life satisfactorily any considerable length of time. And further, the incorporation of readily decayable organic matter in the soil largely takes care of the nitrogen question, since organic matter contains notable amounts of this element and at the same time furnishes food and optimum conditions for the activity of beneficial nitrogen fixing and nitrifying bacteria. In addition, nitrogen from organic sources has apparently proven more acceptable to citrus trees than mineral nitrogen. For these, as well as other important reasons, it seems that the greatest emphasis should be placed on the maintenance of a high active organic matter content in citrus orchard soils. It is not enough merely to add organic matter, for this could be accomplished by the use of peat or other inert materials, but the organic matter added must be of such a nature as to be active or readily decayable.

Sources of Active Organic Matter.

At the present time three general sources of active organic matter are available to citrus orchardists. It may be added to the soil through the use of a green manure crop, by the application of animal manures, or by the incorporation into the soil of bean straw, alfalfa hay, or other readily decayable material of a similar nature.

But in many of the older orchards a green manure cover crop cannot be grown satisfactorily on account of the large size of the trees which shade the ground and prevent its growth. And in certain sections cover crops in young orchards are not practical on account of lack of irrigation water or because of peculiar soil conditions.

This latter is particularly true of the heavier types of soil such as the clays and adobes; all the more so where the winter rainfall is sufficient to almost saturate them, then ceases in early spring and within two weeks has dried out to the point where it is impossible to plow with any degree of satisfaction. The mere physical difficulties of handling the winter cover crop, especially in parts of the San Joaquin Valley, are sufficient to discourage its use.

The supply of animal manures at the present time falls far short of the demand. Citrus growers have been for some time bidding one against the other for this material, greatly to the satisfaction of the manure dealer. And with the advent of the truck and tractor the manure supply is ever decreasing, rendering the situation truly a desperate one, for in addition, as the competition to obtain it has increased and prices gone up, in far too many cases the quality has deteriorated.

Bean straw and alfalfa hay at present prices are worth far too much as feed for live stock to induce growers of these products to sell large quantities of them to citrus growers for fertilizer. And even were the supply adequate and certain, which is not the case, it is a question whether these materials should be allowed to be sold to the citrus grower for fertilizer before being utilized by the live stock farmer for feed. Certainly alfalfa at $220 and bean straw at $14 come high as fertilizer, especially when one considers that if fed to stock and all the manure, both solid and liquid, conserved, 70 per cent is regained in the manure and urine.

What is to be the future supply of active organic matter for the citrus grower is a question already being raised in the minds of many orchardists. With a large and increasing acreage which cannot be cover cropped, with the supply of animal manures decreasing and prices ever advancing, and with at best an uncertain supply of other sources of organic matter, prices for which fluctuate according to the foodstuff market, the organic matter situation will soon be extremely serious.

Fundamentally the solution of this perplexing problem lies in the extension of diversified farming in which the raising of live stock plays a prominent part. Among the most common suggestions offered for diversifying citrus orcharding is that of combining a dairy herd with the orchard. It is said that such a combination is almost the universal thing in the orange orchards of Brazil. While in a small way this suggestion is capable of application even at the present time, there are many almost insuperable. difficulties which will operate to prevent such a combination from ever being used on a large scale, at least until a number of radical changes in rural economics in Southern California occur. In order to maintain a dairy herd one must have alfalfa and a relatively large amount of land, at least no less than one acre to the cow when pastured and a half acre when soiling is practiced. At present valuations citrus land and water are far too valuable to use for the growing of alfalfa and the carrying on of a dairy business. For success in this branch of agriculture relatively cheap water, and at best only moderately priced land, are prerequisites. No sane person would think of raising alfalfa on thousand dollar an acre land with three cent water. It simply can't be done and the books come out on the right side of the ledger. The fertilizer obtained would cost far more than at the present prices for fruit citrus growers can afford to pay. To be sure, citrus growers may eventually have to come to the place where one-fourth the present acreage fertilized with manure from the rest of the land will be far better than no profits at all on an acreage not possible of fertilization. But such a transition will not come voluntarily unless our citrus growers are gifted with perspicacity to a most astonishing and unexpected degree. Just so long as it will be found possible to make returns on the investment, orchardists will continue to put off the time of reckoning. And then it may be too late.

No doubt there are available considerable areas of low lying land at present not planted to citrus which could be put into alfalfa or some other rank growing legume to be harvested and fed to animals or applied directly to citrus orchards as fertilizer, but even with these lands the high cost of water will work to prevent such tracts from being utilized for this purpose. So long as it is more profitable to plant these lands to other fruits and crops they will not be put into alfalfa. The scarcity of water in Southern California is an important contributing factor to prevent this part of the state from ever becoming an alfalfa or dairying country, the success of which industry requires an abundance of water and relatively cheap land. The citrus industry in Southern California is simply a victim of its intense specialization, and any radical change toward diversification is bound to disturb the whole economic fabric of Southern California agriculture.

Poultry a Possible Solution.

The principal advantages of this means of providing for the diversification of citrus orcharding so as to furnish manure for the upkeep of the orchard soils lie first, in the slight effect such a movement would have in disturbing present economic conditions; second, in the relatively small amount of land required to keep sufficient poultry to adequately provide for the fertilizer requirements of the trees; third, in the small amount of labor and capital required to make the desired change, and last, in the unexcelled character of the fertilizer obtained.

Careful experiments have shown that when confined, and all the fertilizer recovered, one may expect to receive 70 pounds of droppings and 30 pounds of litter per fowl per year, or some hundred pounds of fertilizer. Analyses have repeatedly shown that under California conditions where the fowls are fed a balanced ration poultry droppings will run from one to three per cent nitrogen. On a basis of two per cent nitrogen the manure from one hen during a year would contain that amount recovered from approximately 12 pounds of nitrate of soda, or 10 pounds of sulphate of ammonia, which any orchardist will at once recognize as a larger application than has usually been given per tree in the past. It is extremely doubtful whether it would be advisable to have much more nitrogen available to a citrus tree during a season. In addition the use of poultry manure would provide for a large amount of readily decayable organic matter to be returned to the soil.

It has been the experience of citrus growers in the past that poultry manure has given very satisfactory results. Indeed, there are many growers who would use nothing else if they could get all they needed. The present high prices for poultry droppings are but another indication of the desirability of this substance as a fertilizer for citrus trees. Poultry droppings are more concentrated and therefore run higher in nitrogen than other manures for the reason that both liquid and solid excreta are voided together, the solid portion tending to absorb and conserve the liquid portion, thus preventing loss. In addition, on account of the finely ground character of poultry manure it works easily into the soil and becomes available to the trees much more rapidly than other manures.

Figuring on this basis it can readily be seen that a hen per tree should serve to keep up the fertility of our orchards, were all the droppings recovered and applied to the orchards. A ten acre unit would then consist of 1000 hens, which should require at most no more than a half acre for pens. Under proper management a profit of a dollar per hen should be received and in addition the orchardist would receive the manure free of cost. Many orchardists would undoubtedly keep the hens for the manure alone if no profit whatever were realized on the business, so valuable do they consider poultry manure as a fertilizer for citrus trees. On tracts larger than ten acres a one man unit would be the logical thing. One man can care for 2500 hens, the manure from which would take care of the fertilization of 25 acres. On a ten acre tract one man could therefore care for the thousand fowls required for fertilization and in addition do the greater part of the orchard work, since ordinarily it has been found that one man can do all the work on a 20 acre block of citrus.

Management.

In the citrus grove the hens would undoubtedly best be confined in pens first, in order that all the fertilizer might easily be recovered, and second, to prevent the filling in of irrigation furrows by scratching, as well

Continued on Page 565

Agricultural News Notes of the Pacific Coast

Northern California

Sixty bales of hops at Ukiah sold for 71 cents a pound.

Ducks are destroying much rice in Colusa and Glenn Counties.

Mendocino is the only county in the state that pays coroners' juries.

Sonoma County grape growers complain of much damage by rain.

Bartlett pears from Placerville brought $7.30 a box in New York.

The yield of seedless raisins in Yolo County will be more than 1,500 tons.

One firm will plant 4,000 acres of barley east of Dixon, Solano County.

Butter fell two cents in price and eggs two cents in San Francisco last week.

Frank Swett of Martinez estimates the value of the state's pear crop at $7,000,000.

The Western Fruit Jobbers Association will meet in San Francisco February 2-6, 1920.

A course in bee keeping will be given at the university farm, Davis, November 10-22.

Near Cloverdale, in Sonoma County, the deer are eating up the hay crop of homesteaders.

A dispatch from Petaluma states that the price of eggs dropped five cents last week.

On the Robson ranch, near Grass Valley, 15 pounds of potatoes were dug from one hill.

Sisson, Siskiyou County, reports strawberry vines yielding a fine heavy crop in November.

Orchard run apples in Tuolumne County were sold to Los Angeles buyers for $75 to $85 a ton.

A three year old almond orchard of five acres at Yuba City, Sutter County, paid $100 an acre.

At Main Prairie, Solano County, a Hindu rancher has 3,000 acres in rice which yielded 9,000 sacks.

A steamboat with a cargo of 1,000 cases of asparagus sank in the Sacramento River near Rio Vista.

On account of strikes, coupled with car shortage, the northern crops of potatoes and onions are not moving.

Sebastopol grape growers have leased the local winery and are crushing their grapes on a cooperative plan.

Pig clubs for the boys and girls are more common in the northern than in the central or southern parts of the state.

The Pioneer Rice Company, Willows, sold the first rice of the season. It came from 1,150 acres and sold for $200,000.

P. Clendenin of Lake County sold 84 tons of Bartlett pears from 235 trees, selling them for $6,720, or more than $32 per tree.

Horticultural Commissioner Turner of Placer County says that Japanese are the most frequent violators of the fruit standardization law.

Prominent land owners met at Marysville last week to organize a rice growing district of more than 10,000 acres in Sutter County.

Three thousand crates of Tokay grapes rotted on the packing shed platforms at Acampo, San Joaquin County, on account of car shortage.

Central California

Modesto is to have a 15 acre park.

Porterville reports an unusually fine crop of pomegranates.

Tulare raisin men say the paper raisin trays are a success.

J. H. Bowron of London, England, is in the San Joaquin Valley.

The Manzanillo olives on a ten acre tract at Lindsay sold for $190 a ton.

The total pack of peaches in Tulare County this season is 1,139,251 cans.

The Stanislaus County Swine Breeders Associatioon was launched on October 10.

Three carloads of dairy cattle were last week shipped from Hanford down to Brawley.

Moss Landing in Monterey County is harvesting a big crop of whales this season.

Mrs. Figuhi of Lodi made eight dollars one day at the local cannery peeling tomatoes.

Dried apricots in the San Jose district will net the growers about 25 cents a pound.

Tulare reports that the market price of hogs has dropped one dollar during the past week.

At auction sale at Tegner, Merced County, three carloads of hogs brought $15.20 per cwt.

An Orange Cove, Tulare County grower sold his Emperor grapes on seven acres for $5,000.

A short course in bee keeping will be given by the state university at Fresno November 24-29.

E. C. Clark, Delano, Kern County, had 27 tons of prunes on 15 acres, which brought $70 per ton.

Hot dogs! The Valley Sausage Company's plant at Visalia was destroyed by fire October 11.

Lodi grape growers figured they needed 5,681 cars to handle the crop left unshipped on October 5.

A 20 acre Thompson Seedless vineyard at Kerman, Fresno County, sold for $22,000 without the crop.

Fresno County fruit growers have purchased 1,120 acres in Kern County and will move onto the land at once.

Tulare County hunters complain of a shortage of ducks, while rice growers farther north have an excess.

The crop of the Baid Eagle fig orchard north of Modesto brought 17 cents a pound and a total of $80,000.

The recently organized Fruit Growers National Bank of Watsonville has received its charter from Washington.

The American Seedless Raisin Company's vineyard near Livingston, Merced County, has yielded 250 tons of Thompson Seedless grapes the third year after planting.

Fowler, in the San Joaquin Valley, has a fruit pickers' camp of 40 screened tent houses with wooden floors, steel bunks, electric lights, piped water, sewerage and a big kitchen and dining room for all.

Farm Bureau Meetings: October 20. Center meeting, Delta View; October 21, Center meeting, Paddock; October 23, Center meeting, Corcoran; October 25, Center meeting, Oakvale; October 27, Directors' meeting, Hanford; October 29, Center meeting, Stratford.

Southern California

The Ventura bean crop is 30 per cent normal.

Yucaipa apple growers are advertising for pickers.

The Ventura County farm bureau has 350 members.

The San Diego farm bureau fair cleared about $8,000.

The Pomona Valley walnut crop will be from 600 to 700 tons.

The town of Ojai, Ventura County, is having a building boom.

The Burbank cannery has been purchased by Libby McNeil & Libby.

The season's returns of the Irwindale Citrus Association averaged $4.17 a box.

On October 9 there were 340,660 boxes of apples in cold storage in Los Angeles.

California bean growers are urging a tariff of four cents a pound on Oriental beans.

Growers on the Mexican side of the line pay their cotton pickers $1.40 per hundred.

Twenty-nine carloads of sheep were shipped from Brawley to Kansas City on October 13.

Nearly 2,000 acres of grape vines will be set out in Imperial Valley in early spring.

Yorba Linda ranchers are circulating a petition for a new packing house at Dawn.

At Hemet Hertel Brothers picked 35 tons of peaches from five acres of four year old trees.

The Highland district shipped 1481 cars of citrus fruits, 1,001 cars short of the average year.

Spot cotton sold in Blythe, Riverside County, last week for 36 cents, a record price for short staple.

Residents in and about Pomona and Ontario have petitioned to have the toll gate removed from San Antonio Canyon.

The Lima Bean Growers Association state the crop will be 100,000 sacks short of the estimate made a month ago.

The annual election of officers of the Los Angeles County farm bureau will take place November 5 at the Baldwin ranch.

Twenty tons of raisins as the first run of the new Bowron dehydrator at Pomona has proved the plant a complete success.

The Santa Ana sugar factory will have finished beet slicing by November 1. The average return to the growers is $12.30 a ton.

El Monte has such a heavy walnut crop that the schools have been closed for the past month that the children may help in harvesting.

The university short courses in bee keeping for Southern California will be held at Riverside, December 1-6, and at San Diego December 8-13.

More than 150,000 acres of land in the Imperial Valley, near the Colorado River, will be open for entry early in November. No irrigation is possible.

The California Walnut Growers Association states that within two days after prices were set, more orders for nuts were received than can be filled, to the extent of 93 cars.

The Coast and General

A cotton carnival was held at Mesa Arizona, October 23 to 25.

Beetles are destroying the cocoanut palms in American Samoa.

Arizona will have a heavier orange crop than that of last year.

The early rains in Arizona have started plowing and seeding.

A pure seed show is to be held at Pocatello, Idaho, in January.

Arizona reports show stock grazing good in all parts of the state.

Potato harvesting has just begun in the Flagstaff, Arizona section.

An irrigation project at Shelby Montana, includes 285,000 acres.

Italian prunes brought $100 a ton on the trees at Yakima, Washington.

Quartzite, an Arizona mining town, was literally washed away by a cloud burst.

Cotton growers at Parker, Arizona, are offering pickers four cents a pound.

The bureau of crop estimates shows crops of Arizona to be 113 per cent of normal.

A carload of dried loganberries from Salem, Oregon, shipped to Canada brought $29,000.

A pear orchard in Garden Valley, Oregon, nine years old, yielded the owner $350 an acre.

One cannery at Puyallup, Washington, has orders for 95 cars of evergreen blackberries.

Of the 60,000 persons visiting Yosemite Park this summer, 40,000 made the trip in automobiles.

The Yuma Valley Cotton Growers Association was recently organized at a public meeting in Somerton, Arizona.

Canada received 7,000 more American emigrants in 1919 than in the previous year. More than one-half were farmers.

C. E. Udell, at Tieton, Washington, sold his Delicious apples on the trees for $100 a ton, a record price of about $3 a box.

The 20 acre Johnson ranch at Tieton, Washington, was bought in 1910 for $110 an acre and has now been sold for $1,250.

A mysterious epidemic of poisoning with 25 per cent of mortality in animals affected, is reported among the horses of Chelan County, Washington.

An inspector from the federal horticultural board is in the cotton fields of the Salt River Valley to determine if boll weevil or pink boll worm has secured a foothold.

Water users under the Tempe canal in the Salt River Valley of Arizona are petitioning the Salt River Valley Water Users to be allowed to come under the latter project.

Receipts from the national forests of Arizona for the year ending June 30 were $511,000. $171,928 of this money will be returned to the state for schools and the improvement of roads.

An exchange similar to the California Honey Producers Exchange is now planned by the bee keepers of the Salt River Valley. It is probable that a warehouse will be established at Tempe and another at Phoenix

SOIL DRAINAGE FOR ORANGES

By Ernest Braunton.

IN THE orange districts of California little complaint is heard that underdrainage is needed in any soils. We have hardpans to break up, not to get rid of surplus water, but to allow the roots to delve deeper.

Down in Florida where the rainfall is three times as great as ours, drainage of heavy soils is a more serious matter, and, again, with very light soils there is need of a bottom to the dishpan and a hard stratum or water table is desired at about three feet, never less. Even this would not satisfy California growers, who desire at least a foot more of permeable soil. But Florida growers have one trouble common in the lowlands that has not come to the writer's attention in California until the present year. In Florida much orange land has to be drained to lower the surface water before any trees are planted.

Recently the writer spent a day in the Garden Grove section of Orange County, meeting several owners of young orange orchards. Some of them are agitating the organization of a vast drainage district so that the surface water beneath their orchards may be lowered before the roots of the orange trees, now young shall have reached the present dangerous level. In all of this land there is also present a little more alkali than is considered necessary to the best development of the orange tree, and an adequate drainage system would quickly lower the percentage of alkali now present. It is generally considered that lands low and flat enough to need such treatment are too cold for oranges, but the Garden Grove section is a marked exception to this combination and is, perhaps, the only orange section needing drainage.

These gigantic drainage systems would render valuable much land lying between the sea and a line drawn from Los Angeles to Santa Ana, some of which, without drainage, is of no value to agriculture. A few years ago Compton enjoyed a reputation as an apple center. The writer visited several small orchards that had produced good crops for a number of years, but as soon as the roots reached the surface water the trees began to deteriorate, were finally removed and the land planted to sugar beets. The land suitable for oranges, such as that about Garden Grove, does not suffer from an excess of surface water so long as no irrigation is carried on. But the soil is light and of good depth and irrigation must be frequent, and for that reason the permanent water level should be lowered. Rains must also be carried off or water stagnates about the roots for long periods in winter.

LAND FOR EX-SERVICE MEN

That 50 of the 63 tracts of land, varying in area from 4,000 to 12,000 acres, offered to the state land settlement board in response to its invitation for offers some two months ago are suited to settlement and would be settled by the 1,000 ex-service men who have already applied for farms, is the opinion of Dr. Elwood Mead, chairman of the board.

It is impossible now, however, according to Professor Mead, to buy more than one or two tracts since the land settlement board's funds are restricted at the present time to the million dollars appropriated by the last legislature.

The lands offered are not cultivated or are cultivated by tenants. "The benefits that would come to this state and the addition to its social and political strength from peopling these tracts with families wedded to the soil and making a good living as the settlers at Durham are doing, can scarcely be overstated. It would lessen the dangers of non-resident ownership, of tenantry and alien control of land which now confronts the state," said Professor Mead.

It is a matter of regret that a year has to elapse before the bond issue of $10,000,000 can be voted on. Already there are on file in the two offices of the state land settlement board, at Durham and Berkeley, applications for farms from about 2,000 people, about half of these being from ex-service men.

CALIFORNIA CROP REPORT

The United States bureau of crop estimates gives the following percentage figures for 1919 as compared with normal: Almonds, 75; apples, 89; apricots, 95; figs, 102; grapes, 100; olives, 68; peaches, 100; pears, 93; plums, 90; prunes, 103; walnuts, 106.

The counties of best crop yields per acre are: Almonds, Stanislaus, 115 per cent; apples, Butte, Napa, San Bernardino, San Diego, Santa Clara, 100 per cent; apricots, Riverside, 120 per cent; figs, Fresno, 103, Tulare, 102; grapes, Kern, 101 (14 counties have 100); olives, Yuba, 110; peaches, Sutter, 110; pears, Yuba, 110; plums, San Benito, 105; prunes, Santa Clara, 110; walnuts, Orange, 108, Los Angeles, 107, Santa Barbara and Ventura, 105.

BELGIUM'S PLANT INDUSTRY

Belgian delegates to the International Trade Conference made the following statement to a representative of the United States Chamber of Commerce:

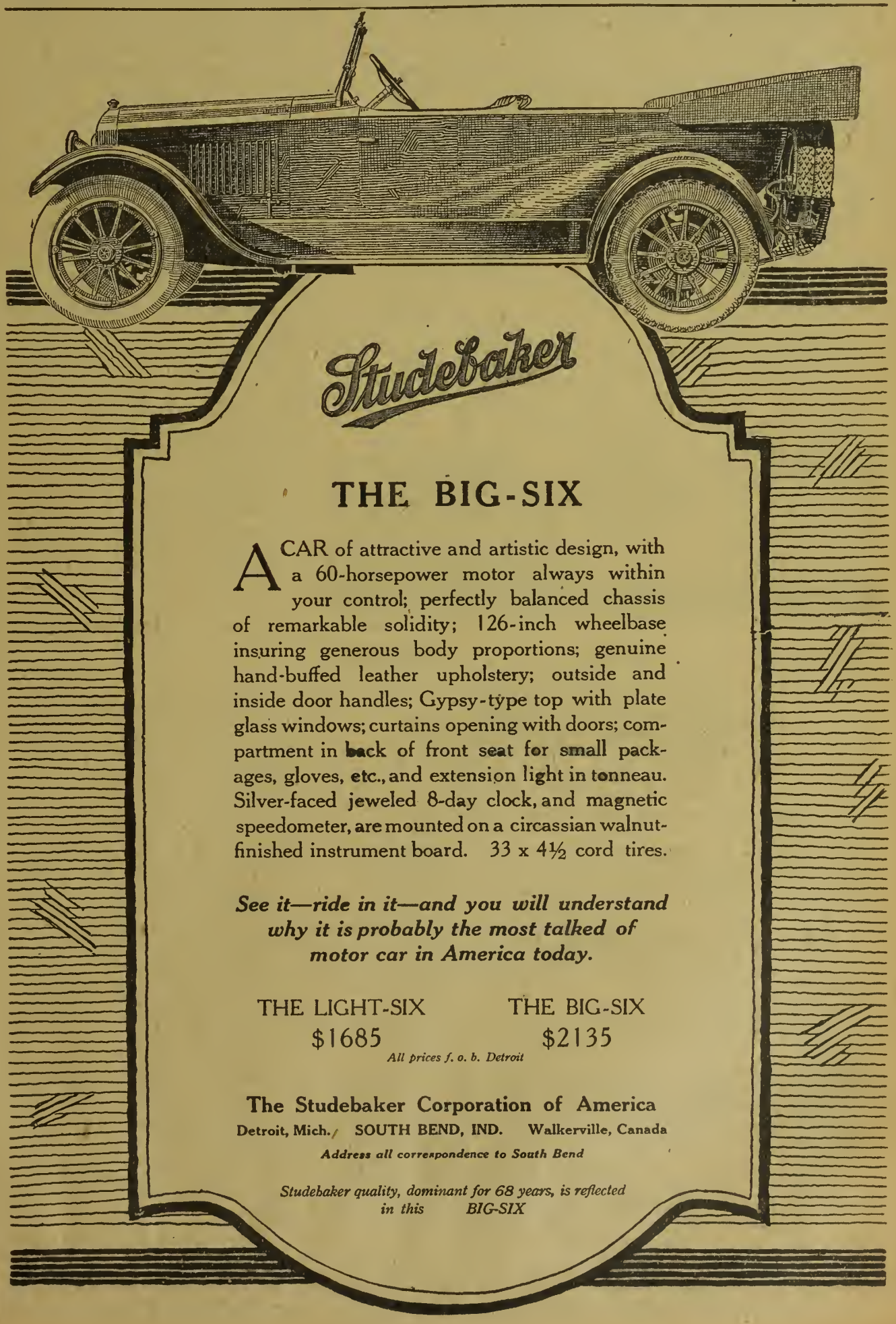
"Unfortunately, in horticulture the nurseries are in a most critical position. Export to France is impossible at present, owing to lack of transport. England has established new restrictions and duties which render import almost impossible, too. Russia, which has a great market, is, of course, not in a position to buy. Germany is unable to buy owing to the depreciation of the mark. The great hope for our horticulturists was the American market, but unfortunately the United States has closed its ports to the imports of plants, which means a real disaster for the whole region of Ghent."

AGRICULTURAL EXPORTS

Agricultural exports from the United States for the eight months ending September 1 are as follows: Barley, 28,713,814 bushels; corn, 40,043,492 bushels; oats, 39,869,821 bushels; rye, 26,787,000 bushels; wheat, 92,673,999 bushels; beef, fresh, 114,297,125 pounds. Meat and dairy products combined amounted to $905,041,985. Cotton returned $2,137,768,967, and was by far our largest export, mineral oils coming second with $1,519,225,707. But one-sixth as much rye was shipped as during 1918 and but one-fourth as much wheat. Only one-third as much fresh beef as in 1918 was exported.

TRADE WITH GERMANY

In the year ending June 30, 1914, our total imports from Germany were valued at $189,919,136; in 1918 this total dropped to $64,094. Our exports to Germany in 1914 amounted to $344,794,276 and in 1918, nothing. In April of the present year our exports to Germany amounted to but $55; in May, $60,814; in June, $8,758,013. Even in July of 1919 we imported from that country goods valued at but $291,166. In June we sold Germany $2,616,892 worth of bacon and $1,099,824 in July, the biggest item for the two months, but in June we sent them lard to the value of $3,414,362. Two-thirds of the products sent through the port of New York consisted of meat products.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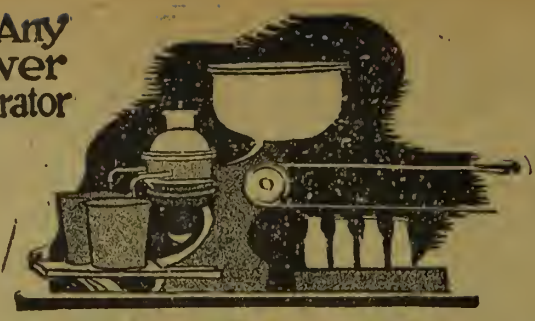

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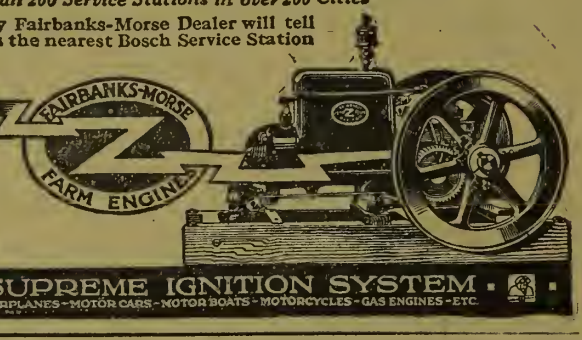

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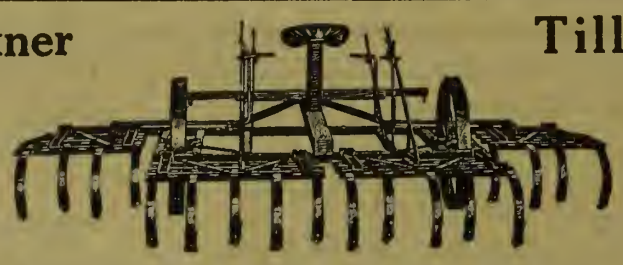

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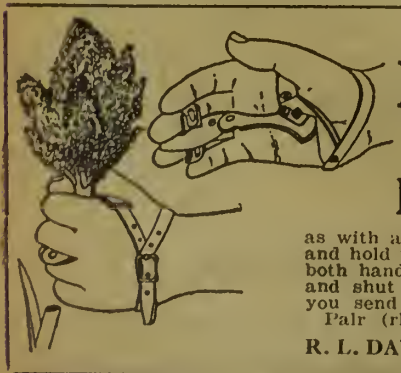

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California's Biggest Walnut Crop

By H. H. Warner

WITH every walnut packing house in the state working to full capacity the present indications are that the 1919 crop may even exceed the association's estimate of 23,000 tons, which is the largest crop of walnuts ever produced in California. The fact that during the first two weeks of October following the early rains fully half of the walnuts fell from the trees adds interest to the situation this year and taxes the output of the packing plants to the utmost.

Some of the larger local associations have been working three shifts of sorters and running the graders continuously for 24 hours a day in order to keep up with the heavy deliveries from the orchards. In some cases even this course has not met the needs and some houses that were stacked full to the roof with walnuts from the growers had to close down on any further receipts for two or three days until they could catch up with the work. The California Walnut Growers Association estimates that fully 85 per cent of the crop will have been delivered by November 15, when the first pool closes.

This situation has demonstrated conclusively the need for equipping the packing houses with the most modern and up-to-date machinery for handling the crop quickly and efficiently. The new packing house at Whittier is an example of the latest type of packing houses and with its 60 tons per day capacity has been able to keep up with the heavy deliveries this season. Instead of each grower culling his own walnuts this house does all of the culling for its members at a cost of less than $1 per ton, whereas the average cost of the same work when done on the ranch ranges from $3 to $5 per ton. There seems to be no good reason why a walnut grower should take out the culls from his crop any more than an orange grower should cull his oranges before delivering them. The work can be done more uniformly and at much less expense in the packing house, and a number of the more modern walnut houses are now following this plan at a considerable saving to their members.

The quality of the crop this season is running fully up to the preliminary estimates although the early deliveries of nuts which fell first were as usual of light average weight. The vacuum machines now installed in practically all of the houses lift these light weight nuts out, however, and the meats extracted at the cracking plants usually net the grower considerably over half the price received for his first grade walnuts. In some of the hot interior valleys and in orchards which did not have sufficient irrigation water last summer, perhaps 25 per cent of the walnuts are running No. 2s in size, but these smaller nuts are well filled as a rule. The association price on No. 2s this year was 5½ cents below the price named on No. 1s and at this differential the orders for No. 2s were readily confirmed.

Within 36 hours after opening prices were named this year the association was sold out on its estimated tonnage and was forced to decline orders for approximately 90 carloads in addition. Shipments are now going forward from the 28 association houses at the rate of about 35 cars a day, and all of these are heavily loaded owing to the present car shortage. With the assistance of the national advertising campaign on Diamond Brand walnuts again this year to stimulate consumption of this big crop, there is little doubt but that the 1919 crop will be quickly disposed of and that the walnut growers will again find themselves in the fortunate position of being able to place their 1920 crop on a bare market.

The association is trying an experiment this year in packing a part of the meats extracted from the culls, in eight ounce tin cans. The meats are packed in vacuum so that they will keep sweet and fresh indefinitely and are instantly avavilable for use on cakes, salads, etc., all the year around. A large part of the output of these vacuum packed cans will be marketed in New York City and the merchandising of this consumer package will support the association's contention in its advertisements that walnuts are good to eat every month in the year as well as at Thanksgiving and Christmas.

Japanese Persimmons

By Ernest Braunton

When one notes the constantly increasing demand for persimmons the past few years he marvels that their good qualities were not long ago recognized. For when the writer first visited Los Angeles in 1887 there were trees of the native Virginian species, loaded with fruit, 40 feet high, at the old Wolfskill home on what is now Central Avenue in the heart of the city. There were also Japanese persimmons, especially of the Hachiya variety that are still bearing heavily, though now 45 years old.

What makes it still more marvelous is the fact that the Hachiya is one of the best, and the largest persimmon the writer has seen. Martin Wetzel of Los Angeles has a tree he planted 44 years ago, evidently two years old at time of planting. For vigor it cannot be beaten for each year it bears a crop of the largest fruits reported in the south end of the state. The writer has eaten of these (and of all the better known varieties) and finds none better when well ripened. This section of persimmons are of the puckering kind when unripe.

Tho astringency of persimmons, which is due to the presence of tannic acid, may bo removed by dipping in lye, smoking, or soaking in water placed in tubs from which saki or Japanese rico beer has been taken. Ten days in this solution will remove the puckering quality and improve the flavor. Of late years tho persimmon is becoming popular in a dried state. They are so rich in sugar that when peeled and hung up to dry in the sun they cure with a layor of sugar crystals over the surface. Many persons prefer them in this state to dates.

If one wishes a puckerless fruit he should get the Hyakume which is devoid of tannic acid even when hard and green. It is also a large fruit of fine appearance and flavor. Other good varieties are the Twentieth Century, an October fruit like the Hachiya, and this is also the ripening time for the Hyakume and the Yama-Yemon. The Yemon is a late variety, ripening in November and the Yama-Yemon is claimed to be an improvement on it in several ways, for it is not astringent even when hard, and ripens earlier. The Tane Nashi and Mammoth Gosho are early varieties, ripening in September. There is an increasing demand in all markets for Japanese persimmons.

TREE POWDERS

Attention of the horticultural department of the University of Missouri has been called to the fact that some of the so-called "tree powders" are again being advertised and sold. The advertisements or agents for these materials generally claim that if holes aro bored into the trees and then certain quantities of the powder are put into them the trees thereafter will be free from insect and fungus injury. The theory is suggested that tho poison will bo taken up by the sap, distributed throughout tho treo and act as a specific against all kinds of insects and diseases. Sometimes it is also claimed that tho material will

also act as a fertilizer and tonic and thus lead to greater productiveness. It is generally the amateur that is made the victim of these cure-alls, for the experienced commercial grower has learned to leave them alone. However, each year there are enough amateurs misled by the claims to make manufacture and distribution of these powders profitable.

It might be stated that the grower should place no reliance in these fake remedies. Good sanitary methods of orchard management coupled with thorough spraying treatment constitute the means of controlling the insects and diseases of the orchard; and they alone should be relied upon.

WALNUT GROWERS MANUFACTURE SPRAY

By H. H. Warner

The past year has demonstrated conclusively that the dusting of walnut trees for the control of aphis, codling worm and red spider is successful. The California Walnut Growers Association erected a small plant at Goleta for the manufacture of this dusting material under the direction of Prof. Ralph E. Smith and was able to supply the needs of its members at cost but was not in a position to sell the dust to other growers who needed it.

A new corporation has recently been organized for the commercial production of various kinds of dusting material, which will be able to supply not only all walnut growers but others as well. A plant has been purchased in Los Angeles and Prof. Smith, who has been given another year's leave of absence from the university, has been placed in charge.

Prof. Smith, who has been responsible for the new industry and for the practical application of the dusting material in the control of walnut pests, is planning a rapid expansion of the business this next year. Prof. Smith hopes to be able to introduce into the aphis dusting compound an ageut which may have some effect in checking the dreaded walnut blight.

CITRUS BLAST

The Butte County Farm News referred to the serious situation in the citrus orchards of that county because of the dreaded disease, citrus blast. In the last Farm News, organ of the bureau, the following appears:

"In response to a concerted appeal from the citrus growers to the farm bureau, Dr. H. S. Fawcett, expert citrus pathologist, and Dr. H. J. Webber came to Butte County and spent several days looking over the citrus blast situation. Both of these men have not realized before how really serious the citrus blast had become in this county and were surprised at its widespread appearance. Specimens were collected from orchards all over Butte County.

"In company with the farm adviser, Dr. Fawcett also made a trip to Tehama County and Glenn County and found citrus blast lesions in the orange trees there.

"The citrus growers are demanding that a pathologist be sent into this district to work out control measures for handling the disease. It seems that at the present time no funds are available for such work, and until such funds can be had the growers will attempt to carry out in an experimental way methods outlined by Dr. Fawcett. The results of these treatments will be carefully watched by the citrus blast committee, of which R. P. McCune is chairman."

FUMIGATE, THEN KEEP CLEAN

It should be remembered that treatment of legumes subject to infestation by weevils that can breed generation after generation in storage will not keep them free from weevils if they are stored so that adult weevils can get to them and lay eggs on them. The application of remedial measures may kill all weevils in the seed at the time of treatment, but no treatment has a lasting effect in preventing reinfestation from outside sources. Seeds once treated should be stored in rooms free from adult weevils, or placed in tight barrels or sacks made of closely woven material, and should be examined occasionally as a guard against subsequent infestation.

FIFTY SECOND FRUIT GROWERS' CONVENTION

Director Geo. H. Hecke of the state department of agriculture has issued tentative program of the fifty second state fruit growers and farmers' concention to be held at Chico, November 10 to 15. It is a statisfaction to know that the change in the commissions and the making of a department of agriculture to take their place will in no wise change, unless it be to enlarge, the state conventions, which have been milestones in the progress of fruit culture and farming in this state for more than two score years. The one held a few months ago at Riverside was by far the greatest in attendance and greatest in general interest of any yet held in the state. We trust the one to be held in Butte County will have equal interest.

The first session will be on Monday morning, November 10. This will be conducted by the state organization of county horticultural commissioners. The commissioners will remain in session on Tuesday morning and Tuesday afternoon all who are attending will visit the United States plant introduction gardens near Chico. Wednesday morning, November 12, at 9:30, State Director Hecke will formally call the state convention to order, when welcome to the city will be extended and addresses made on "California Agriculture: the Things That Threaten It; the Need for Protection." During the same day there will be a discussion of "Accomplishments and Possibilities of Cooperation." This question will be discussed by representatives of the California Almond Growers' Exchange, California Prune & Apricot Growers, Inc., California Peach Growers and California Associated Raisin Company. Other addresses will be made on "Standard Pack and Packages", "Status of the Rice Growers' Association", "Function of the Junior College in its Relation to Agriculture", and there will also be a demonstration of fruit packing.

Thursday the convention will be moved bodily to Oroville, will make trips to orange and olive orchards, canneries and packing plants, and in the afternoon will hold sessions in the exposition building, where "Packing Oranges and Maturity Standards" will be discussed. Other subjects to be discussed are "Packing Ripe Olives" and "Pruning of Olives." After an evening program yet to be arranged the convention will return to Chico.

Friday's discussion at Chico will be devoted to irrigation, pruning, spraying, frost control, red spider, evaporators and fruit drying, standardization, community canneries and finally reports of committees. At 6:30 that evening a banquet will be held.

Saturday morning, November 15, the convention will spend in a trip through and an inspection of the Durham state land settlement, seven miles south of Chico, the first of its kind in the United States. In the afternoon there will be a popular meeting on the settlement with discussions of live topics. This portion of the program is yet to be arranged.

ANNUAL OF LOS ANGELES FARM BUREAU

Farm Adviser Hodgson of Los Angeles County reports that at the last board of directors' meeting the annual meeting date was definitely fixed for Wednesday, November 5, the place to be the Anita Baldwin Rancho at Arcadia. Plans are rapidly being made for a splendid program of events, including good speaking, a basket lunch and stock judging demonstrations. Election of officers for the coming year will be held. The home department members will also complete their organization at this time by the election of a chairman and director at large.

CHAYOTE FOR HONEY

A beekeeper at Torrance, Los Angeles County, has found that chayote blossoms furnish a white, pleasant tasting honey. He advocates planting them on fences and trellises for their honey bearing as well as vegetable bearing properties.

Sweet potato growers of Arkansas are perefecting a cooperative shipping organization modeled on the plan of the California and Florida citrus exchanges.

"Set 'em Snug"

"It's the little things that count, son, when you're blasting for tree planting—tamping, for instance. It takes about three minutes and it's just as quick and easy to do it *right* as to do it *wrong*. The Hercules Powder Co.'s book, 'Progressive Cultivation' tells you all about it. If you follow the directions in this book you'll always get the best results with

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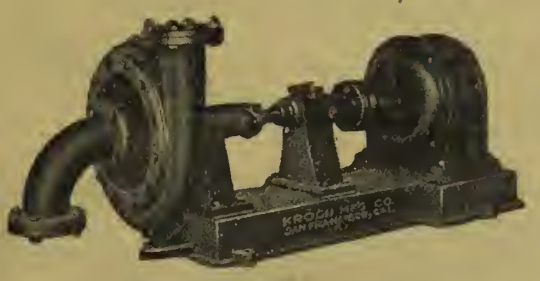

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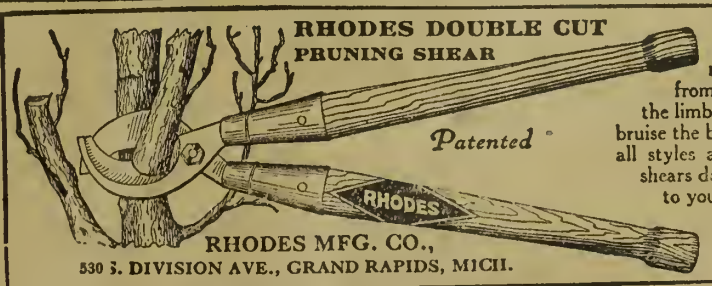

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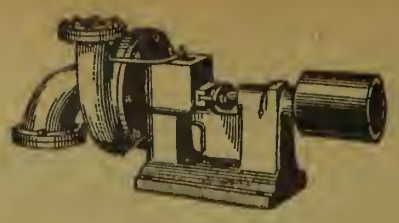

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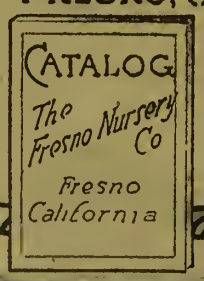

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Gives Greatest Value for Least Money
It Makes Them Fat
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CALIFORNIA FOR AMERICANS

Continued from Page 539

be illegal for any member of said alien race, following said proclamation, to remain a tenant of any property in said political subdivision for more than one year unless said proclamation meanwhile is annulled as above provided; and it shall also be illegal for any alien of the race designated to begin any new business or occupation in said political subdivision following said proclamation until it is annulled as provided for."

It appeals to us that this would simply mean dissemination and probable increase of the race on American soil.

Phelan Shoots Straight

When Senator Phelan first took a definite stand looking toward a correction of this situation he was asked by the representatives of two Japanese newspapers regarding the prejudice in this country against the Japanese. He gave assurance that it was not in any sense a question of race prejudice or any suggestion of race inferiority. Senator Phelan said:

"I am glad to have the opportunity to explain to the people of Japan the California attitude toward them, which necessarily must be the national attitude. There should be no misunderstanding, because misunderstandings breed trouble.

"Great numbers of Japanese men and women are in California and are acquiring large tracts of agricultural land. The state law forbids ownership, but they take it in the name of their children born on the soil, in the name of corporations, and so circumvent the intent of the law.

"They also lease land and work for a share of the crops, and when thus working for themselves are impossible competitors and drive the white settlers, whose standard of living is different, from the farms.

"The white farmers are not free from cupidity when tempted by Japanese to sell out at high prices, and they do sell out and disappear. The state, therefore, is obliged, as a simple matter of self preservatioon, to prevent the Japanese from absorbing the soil, because the future of the white race, American institutions and Western civilization are put in peril.

"The Japanese do not assimilate with our people and make a homogenous population. and hence they cannot be naturalized and admitted to citizenship. Therefore the question is partly economic and partly racial.

"Japan herself excluded Chinese in order to preserve her own people, and that is what California, Australia and Canada are doing. Japanese statesmen must surely, for these reasons, acquit Americans of race prejudice. We are willing to receive diplomats and scholars and travelers from Japan on terms of equality, but we do not want her laborers.

"We admire their industry and cleverness, but for that very reason, being a masterful people, they are more dangerous. They are not content to work for wages, as the Chinese, who are excluded. but are always seeking control of the farm and the crop. Immigration and naturalization are domestic questions, and no people can come to the United States except upon our own terms.

"We must preserve our soil for the Caucasian race. The Japanese, by crowding out our population, produce disorder and Boishevism among our own people who properly look to our government to protect them against the destructive competition. California by acting in time before the evil becomes even greater, expects to prevent conflict and to maintain good relations with the Japanese government.

"The American government rests upon the free choice of the people, and a large majority of the people are engaged in farming pursuits. They form the backbone of every country, the repository of morals, patriotism and thrift, and in time of their country's danger spring to its defense. They represent its prosperity in peace and its security in war. The soil cannot be taken from them. Their standards of living cannot suffer deterioration. Their presence is essential to the life of the state.

"I, therefore, urge the Japanese government and people to put themselves in our place and to acquit us of any other purpose, in the exclusion of Oriental immigrations, than the preservation of our national life and the happiness and prosperity of men and women who founded the Republic, who have developed its resources, and who occupy the land. It is theirs in trust for their posterity.

"The people of Asia have a destiny of their own. We shall aid them by instruction and example, but we can not suffer them to overwhelm the civilization which has been established by pioneers and patriots and which we are dutifully bound to preserve."

Buying Just the Same

Meantime the Japanese are extremely active in securing possession of lands and in introducing picture brides, which means a continual increase in the birth rate. The Lodi Sentinel recently noted:

"What is perhaps the greatest Japanese land deal in California is now being completed in the south. A syndicate of 27 Japanese strawberry growers who cleared big profits from their crops in the Watsonville and other nearby districts, have formed what is known as the Toyo Industrial Association and purchased about 3000 acres of land near Modesto. It is reported that the syndicate has been negotiating with a San Francisco bank for the loan of $400,000 with which to carry on extensive improvements this year.

"Practically all of the vast acreage will be planted to vegetables, including potatoes, cauliflower, beets, turnips, etc. A contract has already been signed up for a $30.000 crop of cauliflower. The Japanese have expended alone $100,000 for irrigation purposes."

Up North

A dispatch from Hood River, Oregon, notes that:

"M. Yasui, local merchant, has purchased the 20 acre hearing orchard place of J. R. Shelton on the East Side. While the consideration has not been confirmed it is reported to have exceeded $15.000. Sales of strawberry and apple acreage to Japanese this year have almost equaled those of white buyers. Mr. Yasui already owns extensive apple and berry holdings in the Dee and Summit sections."

They Grow Some Rice

Investigations in Glenn County rice fields show that:

"Of the 40.000 acres of rice being grown this year in Glenn County 14,300 acres, or slightly more than one-third, is leased and operated by Hindus and Japanese. This is according to careful estimates made by the various canal and land companies operating here.

"On the P. B. Cross lands where 11,900 acres of rice are growing, 4,000 are in the hands of Japanese and 450 are leased to Hindus. Of the 3,000 acres on the Spaiding ranch, 2,600 are leased and operated by Hindus."

The Sacramento West Side Canal Company reports acreage leased to Hindus, 5.850; to whites, 10.850, while reports from Butte County show that under one canal company Hindu farmers are farming 3.870 acres; Japanese, 2,400; whites, 15.000. The Chico Enterprise calls attention to an advertisement in the Colusa Sun giving notice of the formation of a partnership between 25 Japanese individuals, firms and corporations to be known as the Chico Rice Company. Their principal place of business is Colusa.

Down South

The Santa Ana Register reports a meeting of tho Associated Chambers of Commerce at Placentia, when H. H. Covell of Orange County stated:

"Japanese are coming into our communities and paying more rent for land than a white man can afford to pay and make any profit. The white men with families are gradually dropping out of the community, and if the situation continues it will be only a matter of time until the lands there are occupied entirely by Japanese.

"The higher rentals and the heavy production under cultivation by the Japanese will last for a time, and then lands will commence to depreciate in value. This, together with the section populated with Japanese, will force white people to sell their lands at a loss and move away in order to withdraw from the surroundings.

"It is only a matter of time until my property will be entirely surrounded by the little brown men. I

have good holdings and I don't want to dispose of them, but I may be forced to do so unless I am content to continue my residence with only these men and their families as my neighbors.

"The situation is not only becoming serious at Cypress, but in other sections of the state, and it seems to me that it is time some concerted action be taken by all communities."

* * *

Another week some economic considerations; what the Japanese themselves think; also some resolutions which have been passed in California.

EUROPEAN FARMERS GETTING BACK ON THEIR FEET

Crop prospects in eastern Europe are much better than previous reports have indicated. Bulgaria and Roumania probably will export 1,650,000 tons of bread grains from current crops compared to 3,900,000 tons in average pre-war years. In the wheat producing region of southern Hungary the average planted this year is fully 90 per cent of the normal pre-war acreage. On the eastern border of Poland and the western border of Russia the population was largely evacuated during the war. At present, however, the peasants are returning despite the fact that food conditions are very bad. In some places they are living on bread made from grass, nettle and heather. Throughout Germany the entire acreage is under cultivation although it is presumed that the yield will be below normal, due to the lack of fertilizers. Belgium is very highly cultivated with good crop prospects, while France and England have both been seriously affected by drouth and their prospects in bread grains are not encouraging. In east Galicia 90 per cent of the peasant holdings are in crop.

Specialists of the United States department of agriculture spent seven weeks in travel through southern France, northern Italy, across Jugo-Slavia, through Croatia and Slavonia, the great wheat districts of southern Hungary, and Transylvania to Bucharest in Roumania and north through Roumania, Bukowina, and Galicia, to Warsaw in Poland; thence west through Germany to Holland; through Holland, Belgium and northern France to Paris. During this tour opportunity was afforded to examine the agricultural situation in the region traversed.

One feature of outstanding agricultural importance is that in Poland, Roumania, Croatia and Slavonia the governments are now limiting the size of the estates to maximums of from 200 to 400 hectares (a hectare equals 2.471 acres), the land in excess of these limits being distributed among the peasants. In Roumania, where in many instances large estates have been redistributed among the peasants, the cooperative purchase and use of machinery by the peasants has been promoted, so that a number of neighbors may farm their tracts as one unit with less hand labor. Under the system of land tenure which has prevailed the peasants operate their land in small holdings which average about eight to ten hectares in area, from one-half to two-thirds of all the land being held by the peasants. Under the peasant system of farming the peasants live in villages and go out to their fields for work daily. In this way much time is wasted going to and coming from work. On some of the estates which recently have been subdivided peasant houses are now being built for the permanent residence of the small land owners. This may result ultimately in locating each peasant as a permanent dweller on his farm.

As a rule the farmer of eastern and northern Europe practices a good rotation, tills his land well, and fertilizes even more extensively than the American farmer.

THE EDITOR'S WIFE

"I hate prunes," she said, "and I shall have nothing to do with anyone who sells em." Four clerks gathered around and stared at her as one gone mad; the proprietor informed her he would sell anything he liked. "All right," said she, "and we'll print anything in our paper that we think best; but you ordered the paper stopped because we printed something you didn't like."

HIDES AND SKINS

The live stock man who wishes to secure the greatest return for hides and skins will do well to secure Farmers Bulletin 1055, "Country Hides and Skins, Skinning, Curing and Marketing." It may be had by writing Secretary of Agriculture, Washington, D. C., and by giving number and title.

Country hides and skins make up more than one-third of all the hides and skins produced in this country, and their condition on arrival at the tannery is of vital interest to all who use leather. Too often the value of "country" hides for leather making is less than that of "packer" hides because less care and skill are shown in the "take-off" and in curing and handling. In consequence the hide trade discriminates between "country" and "packer" hides and skins, and pays less for the former. This bulletin shows how farmers, ranchmen, and country or town butchers may produce hides and skins of better quality. It gives detailed directions for skinning the animals and for salting, curing and handling the hides and skins, with suggestions for more advantageous marketing, to the end that both the producer of hides and the user of leather may be benefited.

ALFALFA SEED PRODUCTION

Years ago the United States department of agriculture demonstrated that the "high divide" section of country along the Colorado-Nebraska boundary is the ideal alfalfa seed producing region of the United States. The extreme elevation, together with the dryness of the atmosphere and the hot summer sun, furnishes the key to the big successes that have attended alfalfa seed production there. These conditions are likewise ideal for the harvesting of the seed crop.

It follows logically enough that like conditions prevailing elsewhere should reveal new fields for alfalfa seed production. That conditions paralleling such as obtain in the "high divide" section are met with in the high altitudes of the Victor Valley and Antelope Valley regions is a fact recognized by well informed agricultural authorities in California today. And it is no secret that steps are already being taken to make a practical tryout on a considerable scale of producing alfalfa seed for commercial purposes according to modern methods of procedure in these sections. Soil, water and atmospheric conditions are precisely to order in these highly favored localities in Southern California.

At the Antelope Valley fair this year were on exhibition samples from a five ton crop grown under ordinary conditions by a local rancher that showed a plumpness and brightness of seed not to be excelled, and it was entirely clean of noxious weed seeds.

It is predicted that within five or ten years at the outside the Antelope Valley will witness the development in a high degree of the enterprise of growing alfalfa seed as a commercial venture.

WATER SUPPLY OF SAN DIEGO COUNTY

The facts in regard to the water resources of the vicinity of San Diego are presented in detail in a comprehensive water supply paper entitled "Geology and Ground Waters of the Western Part of San Diego County," just published by the United States geological survey, department of the interior, as Water Supply Paper 446. This paper, which contains 313 pages and ten large maps and 55 other illustrations, is the result of an investigation of the geology and water resources of the region made by the geological survey.

A copy of Water Supply Paper 446 can be obtained free of charge by writing Director, U. S. Geological Survey, Washington, D. C.

Four cotton gins at Gadsden, Arizona, are in full operation and ginned cotton is shipped daily.

"I Began Right"

GOING to the root of the matter—the seed bed from which the roots take their food—you get at the principal source of crop success or failure. That's why a wide awake farmer, when asked the secret of his bumper crop, pointed to his International disk harrow and said, "I began right. I built up, not down."

No matter how rich your soil, you cannot expect big yields unless you give your seed bed a square deal. Get a good disk harrow—one built by men who know every angle of the business through long experience and study. You have too much at stake to buy an experiment.

The 1919 International line of disk harrows is the most complete we have ever offered. You know your soil. Whatever its needs, we have the type of disk harrow suited to them. If a sandy, loose loam, the two-lever type answers every requirement. If hard, stony, or trashy ground, the three-lever type, with its center depth regulator, insures a firm, compact seed bed. If you use a tractor, see our leverless tractor disk. Whatever your power equipment, we have a size that utilizes it to best advantage. Ask your local dealer to point out to you the exclusive features of each type.

Every implement in this line is built to serve fully some particular farm purpose, to save your labor and time, and make you money. The line includes open end, closed end, and flexible peg-tooth harrows, spring-tooth harrows with single and double end teeth, and one-horse cultivators with every kind of tooth and shovel equipment.

Check over the list of machines in this advertisement and write us for full particulars about any that may interest you. We will, on request, supply you with a catalog, showing full details of construction and operation.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines

Binders Push Binders
Headers Rice Binders
Harvester-Threshers Reapers
Shockers Threshers

Tillage Implements

Disk Harrows
Tractor Harrows
Spring-Tooth Harrows
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Orchard Harrows Cultivators

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Baling Presses Rakes
Sweep Rakes Stackers
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Bunchers

Belt Machines

Ensilage Cutters Corn Shellers
Huskers and Shredders
Hay Presses Stone Burr Mills
Threshers Feed Grinders
Cream Separators

Power Machines

Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines

Planters Motor Cultivators
Drills Ensilage Cutters
Cultivators Binders Pickers
Shellers Husker-Shredders

Dairy Equipment

Cream Separators (Hand)
Cream Separators (Belted)
Kerosene Engines
Motor Trucks Gasoline Engines

Other Farm Equipment

Manure Spreaders
Straw Spreading Attachment
Farm Wagons Stalk Cutters
Farm Trucks Knife Grinders
Tractor Hitches Binder Twine

International Harvester Company of America
(Incorporated)

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The Famous Hardie Junior is a Real Power Sprayer

It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight, and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Junior. Equipped with 1½ horse-power engine, battery ignition, 150-gallon tank with mechanical agitator, capacity of four gallons per minute with a steady working pressure of 200 pounds, and two 25-foot of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All for $325. *Delivered anywhere in this state*

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

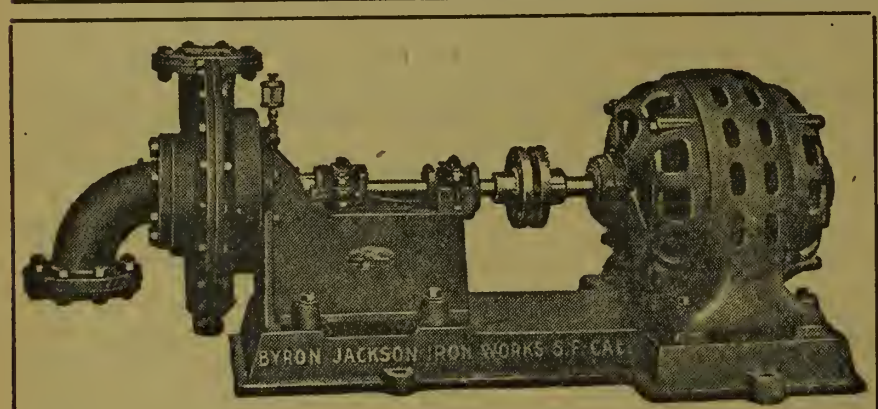
If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

The HARDIE ORCHARD GUN is $12.00, none better. Every one is guaranteed to give satisfaction to the user, or his money refunded.

The Hardie Spray Hose is the safest hose to buy.

The Hardie Manufacturing Co.

224 N. Los Angeles St., Los Angeles



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The difference between a "live" and a "dead" Ranch is "Water" and "No Water."

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Correct lubrication with Zerolene, scientifically refined from selected California crude oil, means longer life for your car. Gives better lubrication, least carbon deposit. Get a Correct Lubrication Chart for your car.

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Renewed screw casing costs from one-half to two-thirds less than standard pipe. Large savings on standard pipe, fittings and valves; special fittings made to order. Pacific Pipe is thoroughly tested and guaranteed for 150 pounds working pressure; asphaltum dipped; serves every purpose. Let us save you money. Write!

PACIFIC PIPE CO. 237 HOWARD STREET SAN FRANCISCO

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Curing Lemons

What is best home method of keeping lemons? That is, where you only have one tree and they ripen faster than you need them some parts of the year and you want to keep a few along for other times when they don't ripen fast enough. We find they shrink and wilt. After the lemons have been put away for some time they are covered with red spiders. What is the remedy? The spiders are also on the tree.—Subscriber, Long Beach.

Some of the finest and plumpest lemons we have ever seen were taken from a pit which had been dug adjoining the lemon tree. The lemons had been picked and placed in the pit with the sandy soil shoveled back on the lemons and the whole thoroughly wet down with irrigation water. The subsoil was very loose and the surplus water soon drained away, leaving the moist soil about the lemons. Some months later these were taken from the moist earth with a texture like wax and perfectly cured. Of course greatest care was taken to pick without bruising and to see that the soil practically surrounded every fruit. Others have been kept by placing in moist sand, a layer of lemons, a layer of sand. This prevents undue evaporation and allows them to cure very slowly. The more common method is to wrap the fruit in scraps of paper. Newspaper will do, though wrapping paper is preferred. Of course the commercial method consists of storing on trays two or three lemons deep and stacking the trays so as to admit air sufficient to prevent sweating and decay and still keep proper degree of humidity to prevent evaporation. This can be determined by an amateur by frequent observation. The red spider should be eliminated before the fruit is removed from the tree. This is best done by application of pure flowers of sulphur in the form of dust, usually before picking.

Scale on Orange Tree

I have three orange trees, two navels and one Valencia. They are badly scale infested. Of course I can't have them fumigated as they do in the groves. What can be done? Several years ago when they were quite small I "painted' them with kerosene. They were so badly infested then that I thought I would either kill or cure them. The kerosene killed most of the leaves, but they immediately came out all new and absolutely clean. No treatment since, and too large now to kerosene them as I did then.—Subscriber.

If unable to have fumigated would use kerosene emulsion or other good formula as given in our recent spray number, or perhaps still better buy a small can of one of the prepared mixtures for spraying. These may be had in almost any quantity and generally prove most dependable. A small spray pump can be had for a few dollars or one could scrub the trunk and larger branches and use whisk broom for "spraying" the solution over the leaves. This is rather a wasteful method and probably in a short time the waste of the solution would more than offset the cost of a small hand pump.

Sunburned Grapes

Will you please tell me what is the trouble with my grapes of which I enclose a sample; also cause and the remedy? I sprinkled them with sulphur four times last winter. — Subscriber, Claremont.

Prof. F. Flossfeder of the University of California answers: This is a case of grapes being sunburned, the cause of which may have been exposure to very hot and dry winds so that the vine evaporated more water than the root system would absorb, and the result was sunburn. This will not only happen on the south and west side of the grapevine but also on the east and north. Another cause of sunburn is heavy winds exposing the grapes very suddenly to the hot rays of the sun. Tokay and Muscat are very much subject to sunburn.

Pasturing in Vineyards

Is it advisable to pasture sheep in vineyards after the fruit is removed? —Subscriber, Los Angeles.

The above question was referred to Prof. F. Flossfeder of the University of California and he answers:

"As long as the vines are green no sheep should be turned into the vineyard. However, after the first frost when the leaves will be destroyed there can be no objection to having the sheep in there, provided they do not come from a pasture where weeds such as Johnson grass and Bermuda grass were present. As long as the grapevine is green it will manufacture and store starch in its root system for the year following, which is a very important factor. A good many people who have vineyards are under the impression that the pasturing of the sheep will destroy the grape leaf hopper. This insect, however, lives not only on the grapevine but in the winter it will hibernate in alfalfa fields which may adjoin the vineyard. In the spring following it will return to the vineyard and commence to work there. Last year we started to carry out experiments along this line, but I am not in a position to give you a definite answer as to the results. As to the price of vineyard pasture for sheep, I wish to say that $1 per acre is considered, around Fresno, a very good price, but since everything has gone up 100 per cent, although I do not advise the pasturing of sheep in a vineyard, I think $2 an acre would be a fair charge."

State Land Settlement

After reading the article on land settlement in the Cultivator of October 11 I wonder if it would be possible to get a location in Imperial County on which such a settlement is to be made.—Subscriber, Escondido.

State Land Settlement Board, Berkeley, can give any information it may have as to prospective settlers, but we may say that as yet there is no definite decision as to any particular parcel of land for the next settlement. It will probably be several months before any definite announcement is made. The Cultivator will be sure to pass on the news to its readers. It may be of interest that the United States land office announces that on November 3 at 9 a. m. certain land in the Imperial Valley will become subject to settlement. Regarding exact location of these lands or of other lands write United States Land Office, El Centro.

Codling Moth

When should apple trees be sprayed to get the worms that get inside the apples and those that get under the bark? What solution should be used? —Subscriber, Escondido.

A thorough spraying of trees in midwinter may possibly aid somewhat in controlling codling moth, especially if application is made with sufficient force to drive it under scales of bark of tree. Other winter treatment also consists of steaming or scraping the boxes or sacks in which the insect is pupating. Vast numbers of the moth may be destroyed in this way also by inspecting the bands about the trees which may have been placed there to induce the moth to hide during the winter season. The first really effective spraying to destroy the codling moth is at blossoming time then again some two or three weeks later and oftentimes a half dozen sprayings during the summer. For formulas for sprays may be found on pages 136 and 137 of the Cultivator of August 9.

Grafting Walnuts

This is no season for grafting walnuts, though the question has come to us within a short time, but it may be in order to remark that this is a good time for planning of grafting season's work. Desirable trees may be found

at this time when the nuts are being harvested, and the scions engaged for next winter's work. As to the tree it seems there is no need of particular treatment other than to be sure that the ground is kept in best of condition during these fall months. The Cultivator is planning for an article on grafting which will be given a few weeks later when it will have more immediate interest.

Oak Root Fungus

Can you tell me if oak root fungus can be spread on farm tools such as a spade after digging around plants or trees affected? I have been told that by digging around roses affected and sprinkling with sulphur the fungus could be killed.—Subscriber, Ventura.

It is very probable there would be danger of carrying the fungus on point of spade or other implements to roots of other trees which are susceptible to this fungus. Especially where the spading was deep roots injured by the spade would afford excellent lodgment for the fungus. We do not know as to the effects of sulphur on this fungus, but so long as the sulphur, or at least sulphurous acid contained in the sulphur, is proving beneficial when applied to some soils it would be a harmless and possibly beneficial experiment. We would be glad to hear from readers who have made applications of sulphur to ground where the oak root fungus exists.

Diseased Doe.

I have some rabbit does that have scabs on their coats. What is it? What will cure it?—Subscriber, Van Nuys.

The writer would call this an advanced stage of vent disease; cause, damp, dirty hutches or breeding to unhealthy animals. It is contagious and will spread through hutches. It is wise to examine all does bought for breeding, as one unhealthy doe will infect the buck and he spread it. Apply to organs with medicine dropper a 25 per cent solution of argyrol, every three or four hours. Many does sit in damp corner of hutch and thus become affected with disease. Keep hutches dry.—W. D. W.

Keeping Grapes

Kindly inform me as to how grapes are preserved for the winter.—Subscriber, Jackson.

As grapes are not commonly used in making preserves we take it the information desired here is as to storage and holding fresh table grapes. The usual method in California is through packing in thoroughly dried redwood sawdust or cork dust and keeping at a temperature of from 36 to 40 degrees in storage warehouse.

Self Sterile Plum

Referring to an article which appeared in the Cultivator of September 27, which touched upon pollination, an Anaheim subscriber says that his thrifty young Satsuma plum trees, four years old, bloomed heavily but blossoms all dropped. He did not get 100 pounds of fruit from the five acres. Experts told him that the trees had been pruned too heavily and threw out especially strong wood growth instead of fruit bud growth. The article touched upon the necessity for crop pollination and subscriber wishes to know if pollinating varieties can be grafted on limbs of the Satsuma. This is entirely feasible and if experts may be had to do the work a couple of years would secure the setting of sufficient Burbank or other scions which would supply pollen.

Wireworms

I am sending you a bug (small specimen) that has been eating my flower seeds planted in box, small plants and corn on the stalk. Kindly tell me what it is and what to do to get rid of it.—Subscriber, Carpinteria.

Unfortunately the specimen when it arrived was little more than a smear on the paper. However, it looked very much like the remains of a wireworm, and from the question above we take it it is this pest, one of the worst affecting the soil. The only remedy is sterilizing the soil by steam, carbon bisulphide or formaldehyde. In potting soil or on the greenhouse bench this is often done, but in field practice the only method is to rotate crops so as to drive out the pest. This will require a couple of years. In planting Lima beans some relief is sometimes secured by also "planting" in the rows pieces of potato. These pieces are left with string and marker on the surface and these traps removed occasionally and the wireworms trapped by the potatoes are destroyed. The same piece of potato or trap can then be returned to the soil to capture more of the pests.

Saltbush for Poultry

Inclosed is sample of a plant which I understand is known as Australian saltbush. It grows in profusion about here, particularly on vacant lots about town and along the roadways. I have been feeding it to a small flock of chickens which eat it greedily. Can you give me any information as to its food value? If it has much value as green feed for chickens the fact should be made generally known for the possibilities for its production are practically unlimited. If you do not care to publish an article about it in the Cultivator will you kindly let me know where I can obtain the informatioon I want by bulletin or otherwise? I suppose, of course, the Cultivator has told all about it before, but I did not happen to see it.—Subscriber, El Cajon.

The University of California issued some 20 years ago a very complete bulletin, No. 125, touching upon the value of the Australian saltbush. Since that time little attention has been given to it though the plant has become thoroughly established or naturalized under California conditions. Only in more recent years has its value as a poultry feed been appreciated. The department of agriculture, Washington, D. C., is now issuing Bulletin No. 617, "Australian Saltbush," by Roland McKee. Neither the state nor the federal department bulletins give any items as to its value as a poultry feed. It is only in the central and southern end of the state that the plant does well. It is also being planted to a limited extent in the Salt River and Yuma valleys of Arizona.

A LETTER FROM THE RICE FIELDS

Word comes from Sacramento that the first rice shipment of this year's crop in the valley sold at six cents a pound. This is the highest price in the history of California rice growing, and is one cent above the figure predicted several months ago. The first shipment consisted of 11,000 sacks. Harvesting of the crop is now well under way in various parts of the valley, and it is declared that the total yield will be approximately 4,400,000 sacks. This surpasses last year's yield by 1,000,000 sacks.

Last year the rice acreage of the valley totaled 110,000. This year it is 140,000 and the value of the 1919 crop will be at least $25,000,000 or $12,000,000 more than the 1918 crop.

The yield per acre in the valley this year averages 30 sacks. This is ten sacks higher than the yield in the Southern states. A number of growers, experimenting with the Edith or Western variety of rice, report an average yield of 38 sacks per acre of this variety.

The high price being paid this year for California rice is due mainly to the shortage of crops in other rice producing sections.

LOOK OUT FOR CORN BORER

The office of pest control of the department of agriculture asks assistance in obtaining information with regard to possible occurrence of the European corn borer in California. This insect now occurs in several localities in the northeastern states and is a very serious pest, causing at times a damage of from 50 to 75 per cent of the corn crop. There is no method of controlling it under field conditions. During the fall and winter the pest is most easily found in stalks that have been stripped of leaves by live stock. Its presence is indicated by holes about one-eighth of an inch in diameter, generally with discolored margins, and usually plugged with borings.

THE "W-W" (Hammer) (Principle)
ALL PURPOSE FEED GRINDER

The "W-W" can "beat it" —You can't beat the "W-W"

"The proper place to mix feed for stock is outside not inside the stomach."

The proper, practical, principle to employ is the hammer process.

W-W Grinders are constructed on an entirely original principle. Hay, grain — any kind of feed, is reduced to any degree of fineness by a beating process.

Nails, stones and other hard substances do not injure the mill.

The square faced hammer while pulverizing the feed, throws out the nails, bolts or other materials that might get into the mill in the feed.

The W-W is an ALL PURPOSE Feed Grinder, practically indestructible, easy of operation and with greater capacities for smaller horse power than any machine offered.

It will successfully grind anything fed to stock in California. Is also used to pulverize fertilizers.

W-W mills are built in a wide range of sizes and types having capacities from 500 pounds to 8 tons per hour—a size for every feed. Write for a list of California and Arizona feeders who are using W-W Grinders, also book of letters of what they say.

It will pay for itself.

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"THE HOME OF THE HAIRY PERUVIAN"

Resists wear and pressure
Mica Axle Grease contains powdered mica, which fills up all roughness in spindles and bearings, makes the grease work better and last twice as long. The grease forms a cool, slippery coating. No hot boxes. Ask your dealer. Buy by the pail.
Standard Oil Company (California)

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Lubrication Facts

IN discussing the economy of proper lubrication of the tractor, Raymond Irving says in the Tractor & Trail:

Probably you know the totals of the various items that make up your operating expenses; repairs, fuel, oil and accessories.

But have you figured out what causes these operating expenses to be high or low? If you have not figured this out, you will be surprised to find out what an important part correct lubrication plays in keeping down the cost of operating your tractor.

The low operating cost for your tractor is the combined result of four basic economies, each of which is dependent upon correct lubrication.

Economy of Repairs

The first of these economies is the economy of repairs. When you start out to do a day's work with your tractor, you expect its powerful engine to operate smoothly and efficiently. But do you realize what is taking place inside the engine?

Your tractor engine has many moving parts. If these parts were permitted to rub together without lubrication, disastrous friction would wear away the rubbing surfaces, and your engine would soon be useless.

To prevent this wear oil is introduced between the frictional surfaces. This oil, if the film be of the correct thickness. is about .003 of an inch thick. When your engine is in operation this film of oil wears out, the metal is protected, and as the oil film wears out new oil of the correct body and character to meet the lubricating requirements of your engine and of high quality to withstand the heat and pressure must be applied. Only oil of these characteristics will maintain the proper film between the metallic surfaces.

You cannot picture to yourself 3.000 degrees Fahrenheit—the approximate temperature at the instant of combustion in the combustion chambers of your engine. If that heat were permitted to continue unchecked, the cylinders would soon be a mass of molten metal. But the cooling system and the lubrication of the engine protect it against this excessive heat.

But friction with its disastrous heat must also be overcome. This task falls entirely to the lubricant. If the oil is either low in quality or incorrect in body it breaks down under the intense heat, loses much or all of its lubricating quality and the metal parts, expanded by heat, come into contact.

Damage follows—because an engine must either wear out oil or wear out some of its moving parts.

In a correctly lubricated engine the oil takes the wear but the metal is saved.

Automotive engineers, service and repair men have stated that over 50 per cent of all internal combustion engine troubles are due to incorrect lubrication. The most common of these troubles are worn or scored cylinders, worn piston and piston rings, worn bearings and engine knocks caused by carbon.

You will not notice the results of incorrect lubrication during the first few weeks you operate your tractor, but with continued incorrect lubrication these troubles will become noticeable, and repairs will be frequently required.

The one main factor in keeping your tractor in working condition is correct lubrication. If, by correct lubrication, you can avoid the expense of replacing one of the main shaft bearings in your engine, for instance, this saving in money will more than pay you for correct lubrication for your tractor for an entire year. You must also take into consideration the fact that when your tractor is tied up for repairs, you are losing money through work being tied up.

Economy of Depreciation

Let us do a little figuring. Suppose your tractor cost $1200. At the end of the year you reckon up expense and roughly you find: Depreciation in selling value, say $400; repairs, ???; fuel: 1,200 gallons at 25 cents per gallon, $300; lubrication, perhaps as much as $70. Consider depreciation.

Why is it so large? It is because you have not paid enough attention to your smallest expense, that $70 a year for lubrication. It is only human to treat such comparatively small outlays lightly.

You, the tractor owner, should not do this, however, as guess work lubrication causes decreased efficiency and increased depreciation and the total yearly expenses go soaring.

Many tractor owners do not realize that due to incorrect lubrication and its attendant wear and tear on the engine they not only sacrifice maximum service from their tractors but also decrease their resale value by actual countable dollars.

Metal worn away by friction is gone forever. Worn engines never "come back."

The tractor owner who allows his engine to become badly worn through the use of an incorrect oil, shortens the life of his tractor and pays a high price for his carelessness. The more careful owners, however, who insist upon correct lubrication, receive the benefits of the economy of depreciation.

Economy of Fuel

You know the satifsaction of operating a tractor that runs smoothly and handles the load easily. You take pride in the ability of your tractor to keep working steadily, hour after hour, day in and day out.

Are you getting maximum power from every drop of fuel you use?

Maximum power is more than a matter of correct mechanical adjustment. Correct lubrication is a controlling factor.

If the fuel charge in the combustion chamber of your engine escapes down past the piston rings during the compression stroke, power is wasted If, on the power stroke the force of the expanding gases escapes past the piston rings, again power is wasted. Unless you maintain a proper piston seal you cannot obtain full power from your engine. To obtain full power you must use an oil of correct body and character to suit the piston clearance of your engine.

Fuel cannot escape past the piston rings on the combustion stroke nor can the force of expanding gases below pass the piston rings on the power stroke if you are using correct oil. The wastage of fuel through the use of oil of incorrect body is more common than many realize. It is true the loss on each piston stroke is small But when the piston strokes mount up into the millions, which does not take long, the fuel wastage is measured by gallons.

Correct lubrication may result in a saving to you of several gallons of fuel in one day's work. The yearly saving amounts to many dollars

Economy of fuel is another of the benefits to be derived from correct lubrication.

Economy of Lubricants

Do you know how long your tractor will run on a gallon of lubricating oil?

It will pay you to know this. The function of a lubricating oil is to protect friction surfaces. To protect, an oil must wear well. Some oils wear out very quickly because their inferior quality will not stand the test of service.

Often the oil is too light or too heavy in body, and, therefore, is unsuited to the design and construction of the engine. Excess oil then works past the piston rings and reaches the combustion chamber where it burns Carbon deposit forms, eventually resulting in knocking of the engine and costly overhauling and repairs.

But with oil of the highest quality and the correct body for your engine, the oil film does not break down and oil is not wasted.

There is a marked saving in the

COLUSA RICE MILL FLY WHEEL

Cast by Union Iron Works, San Francisco, (in one piece), in 1885, to send to China, but no vessel could put in in its hold, so it has lain idle till now. Was taken up the Sacramento River on a barge and moved to the mill on house mover's rollers. It is 22 feet in diameter, three feet wide on face and weighs 22 tons. The belt for it cost $2,500. Engine is 500 horse power, with two 250 horse power water tube Erie boilers which cost $10,000 delivered at mill (without setting).

STYLEPLUS CLOTHES

Belters are stylish

Styleplus for this fall include a wide choice in belters. Suits and overcoats both. Every man of every age and every physique can find the Styleplus that will make him look his best.

Styleplus are smart clothes for smart men. They have the style and they give the service. They sell, at known prices. We attach a sleeve ticket to each garment which tells the price.

Always see and try on clothes *before* you buy them. Buy at a *store*. And then you know what you are getting for your good money.

Clothes will be more expensive later on. Conditions are forcing prices up. Buy liberally for fall. Buy Styleplus now.

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$30-$35-$40-$45
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Styleplus Clothes

Trade Mark Registered

Trade Mark Reg.

America's known-priced clothes

amount of lubricating oil required.

It is not uncommon for a tractor owner, who has been using an incorrect oil, to worry when he first begins to use the correct oil for his engine. He frequently finds that a gallon of the correct oil will last twice as long as the oil he formerly used.

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One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Legal Meeting on Sunday

Can a California corporation legally hold its annual meeting on Sunday. If it is so held and the legality questioned, would it become binding if a quorum met on a following day and approved the action taken? — Subscriber, Bishop.

The provision of law with respect to Sundays and holidays is as follows: "Whenever any act of a secular nature other than a work of necessity and mercy is appointed by law or contract to be performed upon a particular day which falls upon a holiday, it may be performed upon the next business day with the same effect as if it had been performed on the day appointed." The question has arisen in this state with respect to meeting of a board of directors held on Labor Day, a holiday. The supreme court there held that it was entirely permissible for the board of directors to meet on the date fixed for its regular meeting, which day in this case was the first Monday in each month, and the by-laws required it to do so; there was nothing in the general law or in the by-laws prohibiting such meeting because the day fixed fell on the holiday; it was a matter of their own volition whether the members should meet or not on the day stated, although their duty was to do so. The regular meeting of the board was not an act required to be performed by contract, and the board had no authority to meet at any other time than that fixed by the by-laws unless upon notice to all the directors. In a later case, however, it has been held that the general rule is that by-laws do constitute a contract between the stockholders of the corporation, thus negating the point raised by the court in the first case cited. However, that does not lessen the effect of the statement that the code section is permissive in effect, so that it is entirely possible that a meeting of the stockholders which was legally appointed by the by-laws to be held on the Sunday, could be so legally held. As to the other points of the question, the entire legality of the meeting would depend upon whether or not the Sunday was legally named in the by-laws as the day of meeting. The adjourned meeting suggested would have no greater effect if held on the succeeding day than the original meeting, it being in law considered as being initiated upon the day appointed for the first meeting. The legality of the meeting on Sunday is not so well demonstrated that for any important purpose the holding of a meeting on this day should be encouraged.

To Collect Note

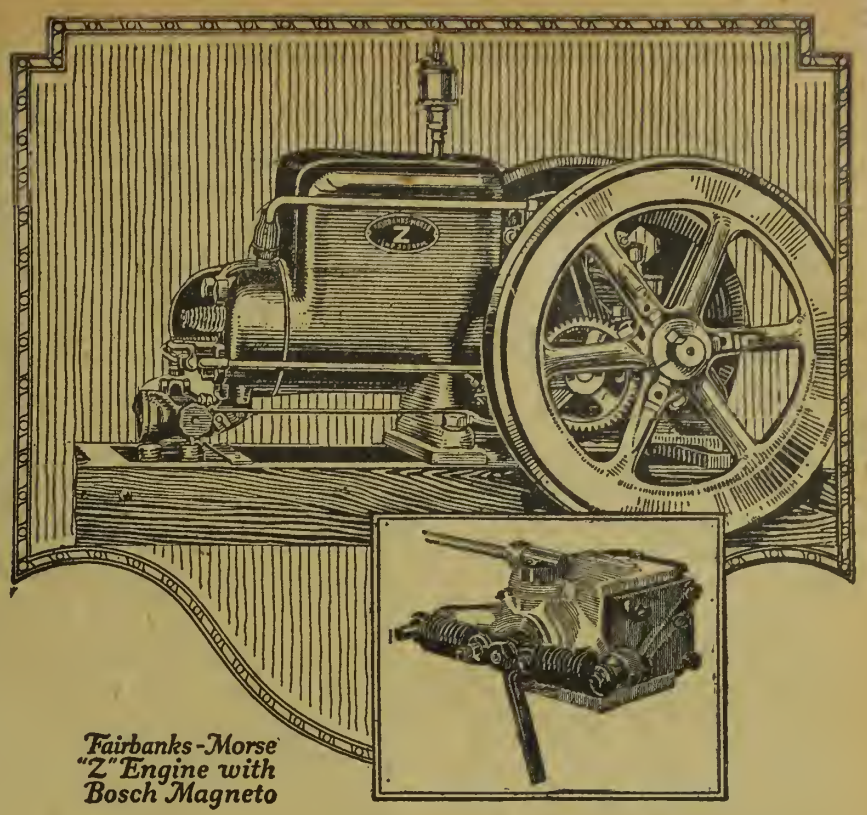
I hold a note for $200. Within what time after maturity may I start proceedings to collect?—Subscriber, Coalinga.

The statute of limitations upon notes made within this state is four years from the date of maturity; that is to say, proceedings for collection can be instituted at any time within four years from the date of maturity, and after that time as well, except that it is liable to be barred if the statute of limitations is pleaded.

Water Right

A owns a ranch through which runs a creek. His neighbor who leases his place has requested the use of water from this creek, to which A has consented, and he has so used the water for two years. If he continues to use this water, will it ripen into a water right? If so, for how long? Will it so ripen if charge is made for use of the water?—Subscriber, Paicines.

If the water is used under a license wherein the exclusive right of A is recognized, no right to that water would arise; it is not necessary that a charge be made; the only difficulty would be in the matter of proof if a right was subsequently asserted. That difficulty could be avoided by having a written license for the use of water signed by both parties stating that the license would terminate either at the option of A or at some definite time.



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California Farmer's Income in 1919

At the opening of the farmers' short courses at the university farm, Davis, Dean Hunt discussed the probable income of the California farmer during the present year and compared it with pre-war conditions. He said, in part:

"Although it is too early to give exact figures, it seems probable the farmers of California may receive for their products in 1919 not less than $600,000,000 and not more than $800,000,000. In the average figure the income may be divided roughly into $250,000,000 for field crops, $250,000,000 for fruits and $200,000,000 for live stock and animal products. This is between two and three times as much as was obtained, say, in 1914. As there are approximately 100,000 farmers in California, the gross income will probably not average less than $6000 for each farmer.

"Speaking broadly, it is customary to estimate at one-half the gross income the current expenses, including labor, except that which the farmer himself performs, but not excluding labor performed by other members of his family. It will, of course, be understood that figures used in this discussion cannot in the nature of the case be taken as absolute, but are chiefly valuable for purposes of comparison. On this basis, after deducting expenses the farmer's income would be $3000. To determine the labor income or the farmer's personal wage interest on the investment must also be deducted. The average investment in a farm in California in 1910 was approximately $18,000, the interest on which at five per cent is $900, thus leaving the farmer an average labor income of $2100. It may be that expenses have not risen as rapidly as the price of farm products, which, if so, would tend to make the labor income somewhat larger. On the other hand real estate and farm machinery have risen since 1910. It is not unlikely that the average investment in a California farm is at present $30,000, or at least is held at that valuation. Interest at five per cent would amount to $1500, thus leaving the farmer on this basis $1500 for his labor. The average farmer's wage or labor income may therefore be estimated for 1919 as somewhere between $1500 and $2100.

"Pre-war estimates indicate that house rent, fuel and food furnished by the average farm in the United States varied from $300 to $500 per year. In Santa Clara Valley these items aggregated about $350. Assuming the maximum figure because of present high prices, the average farmer has under this method of computation a labor income comparable with $2000 to $2600 a year in the city. If there are other members of the family whose work is utilized, then the family income will be increased by the cost of the outside labor which it displaces.

"How does this compare with pre-war times? During the first half of this decade the California farm had a gross income of, say, $3000. According to the above method of computation the farm income was $1500, while the farmer had left after deducting interest on his investment $600 for his labor. The change in five years in the labor income of 100,000 families from $600 to between $1500 and $2100 per year is an important fact, the results of which are easily observable, even though the percentage is not much, if any, greater than the rise in wholesale commodities during the same period. It is certainly proportionately better than that obtained by many salaried people. Even so, it does not give much work for the income tax collector.

"There is another way in which the farm owner has prospered, or at least appeared to prosper. It is in the increased valuation of his real estate. However, up to the close of 1918 the value of farm land in the United States had not risen as rapidly as commodities which the farmer had to buy. If he had sold his farm in 1918 he could not have bought as many commodities with it as in pre-war times. Unhappily, during the present season there has been a wild inflation in real estate from which only harm can come. Such inflation tends to decrease rather than increase wealth. In the end it will benefit very few farmers except those who were in debt for their farms.

"Doubtless some persons will find it difficult to understand the rather modest incomes which the average farmer is receiving in these times of high prices. It is especially confusing when one hears some fabulous but perfectly true tales of high returns, such as the sale of 40 acres of Emperor grapes on the vines, without expense and trouble of picking them, at $50,000, or the refusal of $90,000 for an 18-acre orange grove because it produces an annual income of $30,000. It may help to explain these striking contrasts to state that farm cost accounting studies made in various parts of the United States indicate that in any community one-fifth of the farmers make three times as much as the average in that community. Although it may be a far cry, if the state of California be considered one community, we may by applying this principle be justified in saying that there are probably 20,000 farmers in California who will make on an average during the present year not less than $4500 plus interest on the capital invested. It goes almost without saying that if 20 per cent of the farmers make three times the average profit there must also be 20,000 farmers that have a labor income enough less than $1500 to establish this average. Effective farming is, therefore, of prime importance to the man who lives in the open country, as well as to the man who is dependent upon the farmer for his food and raw materials for his clothing."

DECIDUOUS TREE PRUNING TO BE DEMONSTRATED

Arrangements for the second annual series of deciduous tree pruning demonstrations held under the auspices of the Los Angeles County farm bureau have been made to run from Thursday, November 13, to Monday, November 24. Demonstrations will be held at La Crescenta, Sunland, Long Beach, Pasadena, Downey, Van Nuys, Owensmouth, Pomona, Del Sur, Roosevelt, Littlerock, Burbank and Lankershim. Dr. J. C. Whitten, one of the best authorities in the United States on the subject of tree pruning, formerly head of the department of pomology at the University of Missouri, and now head of the division of pomology at the University of California, has been secured for this series. Considerable interest on the part of the deciduous fruit growers is anticipated, as following the first annual series of such demonstrations conducted by Dr. Whitten last year some very interesting results have been obtained. In some cases as much as three times the usual crop of fruit has resulted.

MORE POTATOES

W. V. Shear, for many years connected with the federal department of agriculture and now with the state department, is engaged in the work of certifying potato seed and aiding growers in producing more and better California potatoes. At present Mr. Shear is investigating conditions in Southern California and says that the southern end of the state is showing increased interest in potato planting. The tuber moth no longer has terrors for the planter, even for the spring crop. Ordinary hilling is found sufficient to give protection to the growing potatoes, and reasonable care at harvesting time prevents infestation.

California potatoes are now going to the northwestern states, though not without inspection, but the proper home inspection added to this gives assurance of acceptance of the potatoes at the other end.

ECUADOR EUCALYPTUS

In the valleys back of the Cordillera in Ecuador, from 8,000 to 10,000 feet above the sea, the country is generally devoid of trees, but the eucalyptus, introduced from Australia more than 40 years ago (about same time as introduced to California), seems to thrive there even better than in California, according to Howard L. Smith, special assistant, state department, now at Guayaquil. He says:

"The growth of the tree is so rapid that it may be profitably cut every five years, being then worth about five sucres (about $2.50). Each one, therefore, produces 50 cents worth of wood a year, when thus cut, and, as the trees may be planted from six to ten feet apart, the yield each year per acre on the average would vary between $220 and $600. It is the usual fuel of the country, either dried or converted into charcoal."

Porterville orchardists complain they can buy no Tuscan peach trees and other varieties are very scarce.

NURSERY STOCK IN FINLAND

The United States consul at Helsingfors, Finland, reports that a few buds are imported annually from Germany and Sweden, but nurserymen there have suggested to him the possibility of importing small lots of hardy trees from the colder sections of the United States. Only from the colder sections would the trees be adapted to Finnish climate. Hothouse plants and ornamental trees are imported in considerable quantities, presumably all from other European countries.

THE CAROB IN CALIFORNIA

I. J. Condit of the agricultural experiment station at Berkeley is author of Bulletin 309, "The Carob in California." It touches upon the adaptability of the tree in this state and has in addition a chapter by M. E. Jaffa and F. W. Albro on nutritive value of the carob. The bulletin touches upon the botany, climatic and soil requirements, propagation, planting, yield, varieties and, as noted, feed value.

CATTLEMEN'S CONVENTION

A convention of cattlemen under the auspices of the California Cattlemen's Association will be held at the California Building, Exposition Grounds, San Francisco, November 5. In outline the program is:

Wednesday, November 5, meeting called to order by President Nares; importance of Kendrick-Kenyon bills discussed by Dwight B. Heard.

Afternoon, report of marketing committee and discussion of Kenyon bill.

Thursday, 9:30 a. m., Director Hecke will discuss state department of agriculture; 10:00 a. m., reports of committees on transportation, national forests and grazing, and legislation; addresses by Hon. Wm. Kent and Frank D. Tomson.

1:30 p. m., public sale of registered Shorthorns at exposition grounds; 7:00 p. m., Shorthorn banquet.

Friday, 9:30 a. m., "A Slogan for the Live Stock Industry of California," C. E. Rachford; "Cooperative Marketing," H. C. Carr; resolutions committee's report.

1:30 p. m., public sale of registered Hereford cattle; 7:30 p. m., live stock breeders banquet.

SALE OF SHORTHORNS IN SAN FRANCISCO

The following well known Shorthorn breeders will consign entries to the sale of Shorthorn cattle to be held at the California Building, Exposition Grounds, San Francisco, on Thursday, November 6, at 1:30 p. m.: Ormondale Ranch, Redwood City; Caledonia Farms, Sacramento; Pacheco Cattle Co., Hollister; Estate of Thomas B. Dibblee, Santa Barbara; T. T. Miller, Hollister.

POTATO GROWERS

The Los Angeles County farm bureau is planning for a potato growers' observation trip to be held probably on November 3, though it is possible this date may be changed. The start will be from El Monte and the end of the trip will be in the San Fernando Valley potato section.

A big increase in the planting of Bermuda onions will occur this fall in the interior valleys of Southern California and this section will become a formidable competitor of southern Texas. Possibly 3000 acres will be planted in the Coachella and Imperial valleys if the plans of growers are put into execution. The proposed acreage will be more than three times as large as last year. The increased plantings are a direct result of the high prices secured by growers for their last season's crops.

Secretary Lane has issued an order that the first unit of the 45,000 acres of the Yuma Mesa project be sold at public auction in Yuma, December 10. This unit, B, contains 6,400 acres divided into about 500 farms of from five to 20 acres each.

Los Angeles County farm bureau meetings: Pomona, October 24; Inglewood, 24; Burbank, 27; Monrovia, 28; Glendora, Clear Water and Downey, November 3.

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If you haven't yet gotten a price list from the big $15,000 Implement Sale when prices are everywhere advancing you should send for one at once. Tractor Plows, Discs, Sulky Plows, Pumps, Roofing Paper and many other items mentioned on Page 479 of the Cultivator October 11th are on sale at big reductions and selling fast.

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Chili Peppers in Orange County

By Ernest Braunton

DUST at present Orange County is red hot—with peppers—Mexican chili, long red and pimento. In the Garden Grove section things are particularly lurid, for here is the real home of the California pepper industry, and in one place there are fields aggregating 500 acres in one uninterrupted sweep of chilis.

The census of 1910 gave California 55 growers of peppers, with an acreage of 417 averaging seven and one-half acres to a grower. Today Orange County alone has about 5,600 acres, divided as follows: Mexican chili, 2,800; long reds, 800; pimentos, 2,000. Nearly all the last named are canned in Los Angeles and Santa Ana, for these are the sweet peppers as distinguished from the "hot" peppers. The total output will probably be 1,800 to 2,000 tons of dried chili, 500 tons of long red (dry) and 2,500 tons of the latter used green. These figures were given out by J. A. Knapp, of Garden Grove, who says that in this district the monetary returns from the pepper crop will exceed those from oranges, walnuts, beans, peaches, apricots, and eggs. This is a pretty "hot" story though it comes from a chili district.

The largest drying plant is two miles from Garden Grove and belongs wholly to Japanese. In this center there are 18 drying houses and nearly half as many warehouses. These are small, the average perhaps 16 by 24 feet, with walls eight feet high. The larger houses will each hold 1,500 trays of chilis containing about 30 pounds to a tray, but when dried the 30 pounds is reduced to about five. They are held in the houses six or seven days at strong heat. The first two days the temperature is kept at 140 and for the remaining four or five days at 120 to 125. During this time the chilis turn from a vivid scarlet to a sedate chocolate brown.

The drying season commences about October 10-20 and continues until frost catches the chilis in the field. The ripe peppers are not damaged by a light frost so they still come in after the plants have frosted. The season, therefore, usually closes in December, but during one mild and glorious winter it continued into February.

Sun dried chilis are almost a thing of the past, except with growers on a very small scale. In testing the efficiency of the drying process the experts first hold the pods to the light to see if they are clear and bright in color and then open the peppers to see if the seeds are a bright light golden yellow. If this condition has not been obtained they have not been well dried. At sacking time they are sometimes too brittle and will break up, but this is overcome by a light sprinkling with water before handling. These are the methods by which the Japanese were handling chilis as observed by the writer who was in several drying houses and warehouses.

Quite a different process of drying is being installed at the Knapp ranch three miles west of Garden Grove. Mr. Knapp has eight kilns or drying houses, originally equipped the same as the Japanese plant. The fact must not be overlooked that all these houses are heated by natural gas piped from the nearby hills. Four of the Knapp houses are now being converted into steam dehydrators, and in time it is expected this equipment will be installed in the remaining four. This gives Mr. Knapp the largest plant in drying capacity in the state. The equipment is being placed and operated under the supervision of G. A. Austin, representing the manufacturers, the Cutler Dry Kiln Company of Buffalo, New York. Mr. Austin is also installing plants for dehydrating chilis at Buena Park for Joannes Bros., one at the university farm, Davis, and another at Guasti, the two latter for grapes. All plants thus far are meeting with success, and instead of six or seven days the chilis of the future will be dried in 48 hours, perhaps less. They may be dried much quicker, but the art of drying lies in extracting the moisture without deterioration of the chili in quality or appearance.

One curious fact comes to light through a study of local weather conditions. It is quite evident that a good year for beans is apt to be a poor one for chilis, and vice versa. The present one is a chili summer, though a warm one. Peppers need continuous warm weather, not necessarily hot, but without fogs. It is well known that beans thrive best with foggy nights, especially the Limas. In the Garden Grove section chilis are fertilized, often with bone meal, but as the soil is light and sandy, the best white growers are depending heavily on cover crops. The industry is growing by leaps and bounds, but who consumes all this fiery stuff is a speculative question.

The Day Before at Los Angeles Livestock Show

If the photograph could have been taken two days later it would have shown a mass of human beings filling the space between the various live stock barns and the grandstand. The attendance is overwhelming the gatekeepers and the grounds are packed from early forenoon till after the society events of the later evening. The greatest interest is shown by the progressive live stock breeder, but farmer and urbanite are joining in every way to make a complete success of the event, the first of its kind at Los Angeles. There is not a vacant stall and every exhibit is of high quality.

AMERICAN COAL AT GENOA

In view of Italy's almost complete dependence in the past upon Great Britain's coal supply, it is interesting to note that during the week ending August 23 the bulk of the coal landed at Genoa came from the United States. The amount was 51,228 tons as against 10,835 to us from Cardiff, Wales.

The Institute of Makers of Explosives has issued a series of bulletins on the uses of explosives. One of these devotes 80 pages to discussion of use of explosives in tillage; another has to do with the making of ditches; another with clearing land of stumps, rocks, etc. The books may be secured of the institute, New York City.

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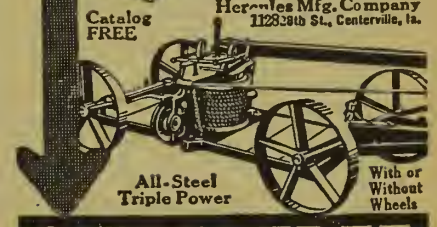

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Leading Breeders of the Big Type

Our 1919 show herd: Mammoth Sensation 2d—one of largest junior yearlings of the breed, 1st prize, senior, reserve senior, and reserve grand champion at Sacramento; California's Great Wonder, grand champion at Sacramento, 1918, and Great Sensation 2d, one of the crack yearling sons of old Sensation. Two aged sows—Critic's Rose, grand champion at Liberty Fair, 1918, and Critic's Orion; also our "Big-4" string of junior yearling sows—Ohio Sensation Girl, Willetta Idlewild, Pathfinder's Col. Girl and Gano's Wonder Girl, blending the top blood lines of the breed; pair of under-year sows—Pathfinder's Very Best and King's Golden Girl, daughter of Great Wonder I Am.

20 Ribbons at Sacramento, 1919. Comprising ¾ Winnings Entire Show.

Senior boar, 4th; junior yearling boar, 1st; senior boar pig, 3d; aged sow, 2d; senior yearling sow, 2d; junior yearling sow, 1st, 2d and 3d; senior sow pig, 1st and 4th; reserve senior champion and reserve grand champion boar, and reserve junior champion and reserve grand champion sow.

325 pigs to select from for the trade, sired by California's Great Wonder and a son of Orion Cherry King 5th; also bred sows mated to leading boars of the breed. Write us or visit the ranch.

Walter T. Gatton, Manager Swine Department

RANCHO DEL SUR DUROCS
THE BIG JUNIOR CHAMPION,
ORION KING GANO at head of herd
Also in service, the great boar
CALIFORNIA'S ORION CHERRY KING
Young boars fit to head first class breeding herds now for sale.
For description, etc., write
DONALD H. GRAHAM, Lancaster, Calif.

Greenwood Farms

State Fair prize winning Duroc-Jersey boars, young fellows sired by our prize winning boar JOHNSON'S DEFENDER, JR.

These young boars growing fast—good judges say they are the best they have seen this year. Let us tell you more about them.

H. C. Witherow, Mgr. **Live Oak, Sutter Co., Calif.**

Speak For Them Now!

Litters are arriving by The Yankee, Jr. You'll want a boar by this outstanding sire. The choice ones will go first—some already sold. Write me at once to select yours. Full particulars and price on request.

John M. Bernstein **Hanford, Calif.**

Breeder Big Type Poland-Chinas

Better Duroc-Jersey

swine are not bred in California than those found on our farm. Our tops sold for breeding all others go to the butcher. See that your next Duroc comes from the Thompson Herd.

Allen Thompson **Tulare, Calif.**

IF YOU WANT

good Duroc-Jerseys we have them—priced right. None better bred and have the size for age. We can satisfy you if you want this kind. Write to

The Gardiner Ranch **R.F.D. 4, Sacramento, Calif.**

Feeding Dairy Cows in California

By F. W. Woll, in Circular 215, Just Issued by the University of California

MANY of the dairy cows in this state, as elsewhere, yield only small amounts of milk, even when fresh, and have but little "dairy blood" in them, being the issue of grade or scrub cows mated to bulls of unknown breeding. Some of these cows cannot be changed into profitable dairy animals by any special system of feeding that might be adopted and the only hope their owner can have to make any money on them is to sell them for beef. The dairy production of most cows can, however, be greatly improved by adopting a system of feeding that will provide plenty of feed of a suitable character both throughout the lactation period and while the cows are dry. In the interior valleys alfalfa is generally the sole feed of cows, and if of good quality and supplied in ample amounts it does very well for cows giving only a small or medium flow of milk. Additional feed must, however, be supplied for good dairy cows that produce two and one-half to three gallons of milk or over a day, in order to insure the largest production of which they are capable, viz., silage or roots, when green feed is not available, and also some grain feed. Good milch cows will give profitable returns for additional grain even at present feed prices and when fed roughage of excellent quality.

The character and kinds of grain to be fed will depend on the available roughage and on the market prices of the feeds. Barley, dried beet pulp, cocoanut and mill feeds are ordinarily the cheapest concentrates in this state; as these feeds have approximately a similar feeding value, protein content, grain mixtures may be made up in accordance with the relative cost of the feeds. Common mixtures are:

Dried beet pulp, rolled barley (or wheat bran), and cocoanut meal, in the proportion of two-one-one, by weight.

Rolled barley and dried beet pulp, equal parts, or mixed in the proportion of one-two or one-three.

Dried beet pulp, three parts, and cocoanut meal, one part.

Wheat bran (or shorts), ground milo (or rolled barley), and cocoanut meal, equal parts by weight, etc.

These mixtures may be fed with either alfalfa hay alone or with alfalfa hay and silage or roots. If grain hay is fed, at least a pound of cottonseed meal or linseed meal should be added to supply sufficient protein for a maximum milk flow.

The silo has proved a good investment on California dairy and stock farms, as it has in Eastern and Central states. It enables farmers to secure a maximum feed supply from crops like Indian corn, sweet sorghum, grain sorghums (milo, Egyptian corn, feterita), small grains, Sudan grass, rye grass and clover, or alfalfa (first and last cuttings only). All these crops, with the exception of clover and alfalfa, are high in starchy components and supplement nicely alfalfa hay in feeding growing and milk producing animals.

With a silo on the ranch the farmer can carry a maximum number of cows and supply his stock with palatable, succulent feed of uniform quality at any time during the year, thus furnishing conditions that are especially favorable to a large milk production. Where silage crops cannot be grown successfully, or where conditions do not permit the building of silos, root crops, like mangels, carrot or turnips, may be raised to advantage on good land; where large yields are obtained roots make excellent substitutes for silage, although they are not as convenient to feed out. On hilly land and on ranches with only small areas of arable land it is necessary to feed some grain or other concentrates in order to reach and maintain a satisfactory milk flow throughout the lactation period.

In order to secure the best results from a dairy methods of herd improvement must always be practiced along with correct feeding methods, viz., culling the herd by disposing of all low producers (cows yielding, say, less than two gallons of milk daily during the early part of the lactation), and adding to the herd young stock or milch cows capable of a large production. In all cases the best pure bred bull that one can afford, of the dairy breed preferred and of a family of high producers, should be placed at the head of the herd. Only in this way can permanent improvement in the production of the dairy be assured.

Liberal feeding is always advisable for good dairy cows. It is only the feed eaten beyond that required for body mainteuance which gives returns "at the pail"; if fair proportions of nutrients of different character are fed, such as are furnished in alfalfa and silage made from the crops mentioned above, with or without grain, there is no danger of fattening good dairy-bred cows, which are the only kind that permit of profitable dairying under present-day conditions.

As concrete illustrations of rations that may be recommended for dairy cows of different productive capacity under present conditions in this state the following are suggested:

For cows producing less than a pound of butter fat a day (less than three gallons of milk per head): (1) Thirty pounds of alfalfa hay (or all they will eat; (2) Eighteen pounds of alfalfa hay, 30 pounds silage (from Indian corn, milo or sweet sorghum, small grains, Sudan grass, etc.).

For cows producing over a pound of butter fat a day: (1) Twenty-five pounds alfalfa hay, one pound of concentrates for every four to five pounds of milk produced. Concentrates suggested: Barley (or wheat bran), dried beet pulp, cocoanut meal, mixed in proportion two-one-one, by weight (or other grain mixtures given before; (2) Fifteen pounds alfalfa hay, 25 pounds silage, the same grain mixture as above in a somewhat smaller proportion, say one pound to every six pounds of milk.

If alfalfa costs more than 40 per cent of the average price of the grain feeds, it is relatively expensive, and less hay and more grain feeds will make both a more economical and efficient ration than those suggested.

When grain hay is fed and not alfalfa, either of the above rations will be improved by adding about a pound of cottonseed or linseed meal per head, since it is necessary in this case to supplement roughage with a grain mixture containing some high protein concentrate; linseed meal is too expensive to be fed to dairy cows in any but small amounts, but cottonseed meal furnishes more protein for the money, and with either of the mixtures given, makes a palatable and effective grain feed. If it cannot be obtained, wheat bran and cocoanut meal mixed in the proportion of two or three-one, by weight, will make a good supplement when grain hay is fed.

PROFITABLE BOYS' CLUB WORK

Reese Evans, a member of the Davidson School Boys and Girls United Clubs, is still winning out with his venture in breeding registered Durocs. Originally he purchased one sow for $10, raised the animal at a cost of $16.45, and she is now valued at $60. He took her to the Southern Arizona fair, at which he won two first prizes, his winnings aggregating $15. He used this $15 to buy another pig, and so proceeded to raise nine acres of corn. He is only 15 years old and says he is engaged in providing means to carry him through high school and college.

A farmer once called his cow
"Zephyr,"
She seemed such an amiable heiphyr;
When the farmer drew noar,
She kicked off his ear,
And now the old farmer's much
dephyr.

We cannot ever say that we have learned anything until it becomes a part of us, a habit of mind and muscle which it is easier to follow than to break away from.—Prof. P. G. Holden

Kings County Poland-China Sale

By B. S. Bennett

The Kings County Poland-China Breeders Association held their eighth semi-annual sale in Hanford, October 11. Those in attendance were not expecting anything sensational, and up to the time Earl McCune drove his sow, Edith Rose and litter, into the ring the animals were selling at good average prices. Earl McCune is a pig club boy and this sow was purchased for him by John M. Bernstein at the Sampson sale held in St. Joseph, Missouri, last winter. The litter was by Surprise Prospect, and it was announced from the ring that choice of the gilts in the litter, only, would be sold. The first bid was $200 rapidly rising to $850, when H. D. McCune, father of Earl, offered $250 for first choice pig from the gilt's first litter. Wm. Bernstein offered $250 for second choice and another offer of $150 for third choice made $650 offered for three of her pigs. She was finally knocked down to Les McCracken, of Ripon, for $1,250, who will breed her to King's Big Bone Leader, the 1918 grand champion boar.

Young Mr. McCune receives $1,250 for one pig and Mr. McCracken has three of her first litter sold for $650 if he cares to accept it.

The excitement over the sale of this five months old gilt for $1,250 had hardly subsided when Fred D. Ross' gilt Big Kate IV, by Rossmead Bob, was driven into the ring. From the way the bidding started it seemed that every breeder present desired this gilt. The price rapidly rose to $1,000, when Mr. Ross announced he would give $800 for choice of four of her pigs if she brought as much as the McCune gilt. This price was reached and passed in no time, the bidding narrowing down to M. Bassett and Dr. J. A. Crawshaw. When $2,000 was reached Les McCracken stepped in and was contender up to $3,000. When this price was reached Mr. Ross raised his offer for four pigs to $1,000. She was finally sold to M. Bassett, Hanford, for $3,150. It was announced from the ring that this was the highest price ever paid for an open Poland-China gilt. The Poland-China Journal of September 25, reporting the sale by Williams, Spruling and Wellington; Clymers, Indiana, of Buster's Kind, a March gilt by Giant Buster for $3,100, stated that this was the largest price ever paid for an open Poland-China gilt.

If this be true, California now holds the record for the highest priced gilt. Forty bred sows and gilts were sold for the fine average of $240. Nineteen young gilts average $77.35 and six young boars averaged $58.30, or a total of $11,700 for the offering. Ben A. Rhoades of Los Angeles, was the auctioneer, assisted in the ring by Geo. W. Bell and Ord L. Leachman.

M. Bassett Consignment

1—F. D. Ross, Hanford, $110.
2—Z. M. Dickey, Dinuba, $85.

John Bernstein Consignment

3—C. B. McNeil, Fresno, $205.
4—A. J. Van Cleef, Riverdale, $200.

Wm. Bernstein Consignment

5—J. M. Upton, Edison, $210.
5A—Chas. Carrithers, Delano, $120.

J. A. Crawshaw Consignment

6—Robt. Ruoff, Bakersfield, $130.
7—Wm. Pitt, Gosford, $130.
8—Frank Johnson, Hanford, $110.
9—Cy Clark, Modesto, $105.

W. T. Dice Consignment

10—H. Garouth, Delano, $155.
11—Les McCracken, Ripon, $140.
12—Les McCracken, $105.
13—M. Loveless, Lemoore, $155.

Haag & Son Consignment

15—Z. M. Dickey, $195.

R. G. Hamlin Consignment

16—W. L. Griffin, Fresno, $50.
17—E. C. Bennett, Hanford, $75.
17x—Z. M. Dickey, $50.
18—Les McCracken, $80.
19—J. A. Crawshaw, $100.
20—G. B. Martin, Visalia, $150.

Hubbard & Sons' Consignment

21—Cy Clark, $85.
22—W. M. Coward, Modesto, $75.
23—Fred Gibson, Hanford, $125.
24—$160.
25—Wm. Byrne, Bakersfield, $90.
26—Z. M. Dickey, $85.
27—Z. M. Dickey, $80.
28—Z. M. Dickey, $75.

H. D. McCune Consignment

30—W. M. Coward, $120.
31—H. T. Ashford, Lemoore, $215.

Earl McCune Consignment

29—Les McCracken, $1,250.

G. I. McCune Consignment

32—C. L. Newport, Hanford, $165.

H. E. McMahan Consignment

33—F. E. Bonstell, Hanford, $120.
34—Z. M. Dickey, $105.

Geo. Nehls Consignment

35—G. W. Post, Hanford, $50.
36—Les McCracken, $85.
37—Les McCracken, $80.
38—Z. M. Dickey, $75.
39—David Smith, Delano, $120.

C. L. Newport Consignment

40—Earl Hallen, Bakersfield, $100.
41—Les McCracken, $95.
42—A. J. Elliott, Tulare, $95.
43—Z. M. Dickey, $75.
44—Wm. Bernstein, Hanford, $85.
45—M. Bassett, Hanford, $150.

E. D. Ross Consignment

46—M. Bastett, $3,150.

W. D. Trewhitt Consignment

47—J. A. Crawshaw, Hanford, $195.
52—Cy Clark, $130.
48—Cy Clark, $105.
49—Roy Waltz, Hanford, $255.
50—Z. M. Dickey, $120.

B. D. Vanderburgh Consignment

51—Cy Clark, $110.

C. A. Vaughn Consignment

53—Robt. Smith, Delano, $110.
54—Wm. Bernstein, $170.
55—M. Loveless, $140.
56—W. C. Premo, Porterville, $180.
57—J. W. Case, Lemoore, $70.

R. L. Waltz Consignment

59—Z. M. Dickey, $50.
60—Z. M. Dickey, $45.
61—Les McCracken, $90.
62—Les McCracken, $75.

T. J. Woodworth Consignment

63—Lewis McKinney, McFarland, $145.
64—Edwin Pinkley, Pixley, $120.

TOP SENSATION 1ST

Hewitt Bros. at Van Nuys are owners of the coming young Duroc-Jersey boar, Top Sensation 1st. This fellow was the pick of the crack litter of 1918 at Winsor Ranch. He was sired by the celebrated boar, Top Sensation, litter mate to Great Sensation, and his dam is the great brood sow Sensation Rose Again. This boar was seen in the Southern California show circuit, along with other good show animals from the herd. These are of the famous litter shown at Riverside and Los Angeles last year, winning eight ribbons at either show. The boys have recently purchased a $700 daughter of the three-times grand champion sow, Model Defender Lady.

Many progressive farmers of today use printed letterheads for their correspondence. They lend dignity and prestige to their business.

SCRUB BULL A HANDICAP

A bull for beef purposes is worth just as much as the butcher will give for him, says W. E. Spangler of the Colorado agricultural college. He adds:

"But a bull at the head of your dairy herd is either worth more than you could get for him at the slaughter house or he is worth so much less that it would be safe to say he is worth less than nothing.

"A bull that sires a daughter that is worth less than her mother is a money losing proposition. One often hears the remark, 'My bull isn't much good, but he is better than none at all.' This remark in itself shows that the speaker is either new at the business or is barely making ends meet. A man who is making a success of the dairy business knows that if he wishes to continue his success he cannot be handicapped by a scrub bull.

"It is true that a good pure bred bull costs more money than a grade bull, and many small dairymen cannot afford to put out the money, but any group of eight or ten farmers can get together and form a bull association and thereby get the services of a pure bred bull at a less outlay of capital than they can get by using a grade bull.

Producing Animals Need Help.

Your stock have been through a strenuous season and face the unnatural conditions of winter stabling, crowding and winter forage to which domesticity subjects stock. These conditions bring on lagging appetites, susceptibility to colds, blood disorders, worms, bowel and kidney troubles.

Nature demands laxative elements in feed, tonics and blood purifiers to keep stock in tip-top shape to ward off disease. Supply these elements in their winter feed—give them

Dr. LeGear's Stock Powders

Insure sturdy offspring, get normal yield from milkers, have healthy draft stock ready for heavy spring work, get rapid gain on packer stuff by consistent use of these conditioners. Dr. LeGear's Stock Powders contain Iron for the blood, Nux Vomica for the nerves, Laxatives for the bowels, Kidney Regulators, and Worm Expellers.

Dr. LeGear's Poultry Prescription keeps hens healthy, insures winter eggs and better profits for you.

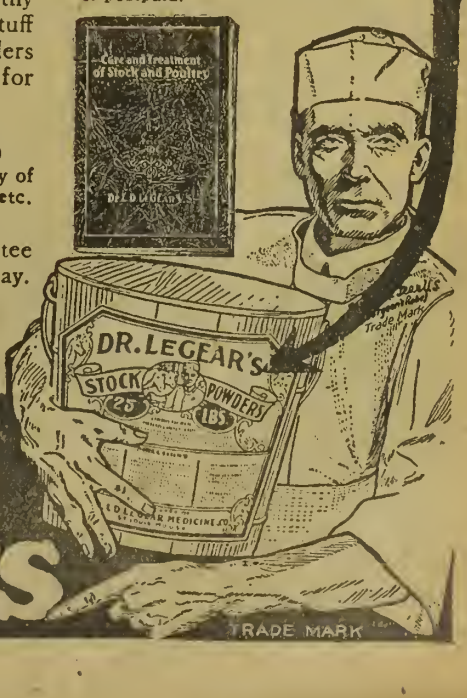
Dr. LeGear's Antiseptic Healing Powder cleanses, drys and heals sores and cuts quickly.

Dr. LeGear's Lice Killer (Powder) rids your flock quickly of lice, protects chicks, etc.

All of Dr. LeGear's Remedies are sold with a money-back guarantee that they will do all that is claimed for them. Ask your dealer—today. Sold by 40,000 dealers—never by peddlers.

Dr. L. D. LeGear Medicine Company
768 Howard Street, St. Louis, Mo.

Get New Stock and Poultry Book
Just completed. A most comprehensive treatise on the care and treatment of Stock and Poultry. Written by Dr. LeGear after 27 years experience as a practicing graduate veterinary surgeon and poultry expert. Send 10c to us today.—we will mail it postpaid.



Dr. LeGear's Stock Powders

Nevada Hereford Ranch

will exhibit a young herd at the California International Livestock Show and from this herd sell at the Hereford Sale on November 7th:

Nevada Lad 8th, 697062—First in senior bull calf class and reserve grand champion bull at California State Fair in 1918.

Isis 2nd, 697049—First in senior heifer calf class and reserve grand champion female at California State Fair in 1918.

Venetia 2nd, 733062—Second in senior heifer calf class at California State Fair in 1918.

Standard Eyes 2nd, 733061—First in junior heifer calf class at California State Fair in 1918.

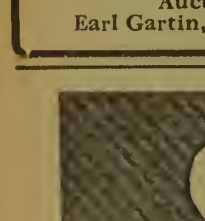
Cleo 4th, 645543—Never shown.

Our entire offering was sired by Harris Standard 2nd, 425030 and the three females of breeding age are bred to the $10,000 Beau Blanchard 76th, 685487.

Jno. H. Cazier & Sons Co. **Wells, Nevada**

Dairymen, Stockmen---Notice!

GROW MELILOTUS ALBA
on Alkaline or Any Poor Soil
AGGELER & MUSSER SEED CO.
620 South Spring Street LOS ANGELES, CAL.
Write for our Bulletin on Grain
Attend the California Live Stock Show, San Francisco, Nov. 1 to 8



GEORGE W. BELL

A BUSINESS AUCTIONEER

When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.

GEORGE W. BELL Tulare, California

All Ready at San Francisco

AFTER having carried their stock along in show condition for several months last winter, hopeful of the influenza epidemic coming to an end so that they would participate in San Francisco's first big exclusive live stock show, and then being forced to abandon the exposition, live stock interests of California and adjoining states were determined to go ahead with the plan and make a San Francisco show possible this fall. The entries for the California International Live Stock Show, which opens November 1, demonstrate the desire of the stock interests to see San Francisco, the largest city in the country without a stock show, not want for an attraction of this kind.

Not only have the stock men entered with large numbers of well bred and well fitted animals, but the horse people have responded with plentiful entries, both in the draft horse classes and in the saddle classes for which the honors will be sought in competition during the night horse show.

With the opening day of the show one week away and every foot of space in the big California Building on the Marina converted into stall and pen space, aside from the section in which are the big arena seating 5,000 people and the quarters for dairy and modern barn equipment, the directors are confronted with the emergency of providing stables on the outside of the building for the overflow.

W. T. Sesnon, head of the committee of San Francisco business men who are making the show possible, has assured the stock interests that nothing will be left undone by San Francisco to provide a great show.

"San Francisco knows how," said Sesnon in San Francisco, "and we will put on what will be the biggest 'baby' show ever held in the United States. It required many years to establish the International at Chicago. The country people of the Central West made the show, but Chicago did not realize what was going on within her midst until the last few years, when the business interests of the city began to find out that 'International week' was the liveliest trading week of the year outside of the Christmas shopping season.

"San Francisco is not going to wait until the country tells us that a stock show is a good thing for us. We are going ahead firmly convinced of the fact that the entire Pacific Coast will get behind us and that with the great breeding estates in the West we can support a stock show that will be a real show right from the start.

"We are endeavoring to put on a show that will be educational in all its departments and entertaining for city people who perhaps cannot see the good points of pedigreed live stock. We are trying not to overlook any feature of what is needed to make a show of this kind complete. We have premiums for every class of stock and poultry and a show of the products of live stock, together with the modern appliances that go toward making the handling of stock and the manufacture of animal and poultry products more convenient.

"This will be just the forerunner of other shows, and I am convinced that the generous response we have had from the live stock interests will assure us that each year will find San Francisco eager to receive the blooded animals of the country participating in the friendly rivalry of the show ring that provides the incentive for raising better animals."

Professor Gordon H. True of the animal husbandry division of the University of California, who was granted a leave of absence by the board of regents to manage the show, has done more than any other Westerner to attract the attention of Eastern live stock interests in this state. True has invaded the show ring at the Chicago International on different occasions and carried off the championship honors on animals bred and raised at the university farm at Davis. As the result of True's participation in the Eastern shows a number of breeders are bringing their blooded animals to California for this show.

While the day sessions of the stock show will be given over largely to competing for prizes by the 1,000 or more head of stock and the many hundreds of poultry and rabbit entries, the nights will be devoted to the showing of some of the best horses in the country. Roy M. Pike, chairman of the horse show committee, is now working on the program of horse events so that every high class animal in the West will be able to show off in competition, whether it be in the gaited classes or in novelty events that will display the skill and horsemanship of the rider or driver.

With the entries of such famous horses as Uhlan, the fastest trotting horse in the world, owned by C. K. G. Billings; Friar Rock, the great thoroughbred, and his stablemate, Disguise, the only American bred horse to ever win a Jockey Club stake in England, entered by J. H. Rossiter, the horse show will not be lacking in celebrities of the track and turf.

A score or more live stock and poultry conventions will be held in San Francisco during the show week. The California Cattlemen's Association convention alone will be attended by 1,200 to 1,500 members from all parts of the state. Their sessions will last all day on Wednesday, November 5, and into the mornings of the sixth and seventh, while in the afternoons of those days will be held sales of registered Shorthorn and Hereford beef cattle.

Among the other conventions will be those of the Central California Milk Goat Breeders' Association on November 1, the California Poland-China Breeders' Association, the Western Berkshire Congress and the California

HEREFORDS

OF ROYAL QUALITY

AT PUBLIC SALE

FRIDAY, NOVEMBER 7, 1919 SAN FRANCISCO

Under Auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, Pres., Wells, Nev. J. A. Bunting, Sec'y, Mission San Jose, Cal.

The splendid registered Herefords comprising this offering have been selected from the various leading herds, by committee appointed by the Association, with the object of placing before the public in this sale the highest class representatives of the breed that have yet appeared in a public sale in the west.

CONTRIBUTORS:

CHAS. RULE, Jenner, Calif.
WM. BEMMERLY, Woodland, Calif.
H. M. BARNGROVER, Santa Clara, Calif.
DIABLO STOCK FARM, Danville, Calif.
J. A. BUNTING, Mission San Jose, Calif.
H. H. GABLE, Esparto, Calif.
J. H. CAZIER & SONS CO., Wells, Nev.
HEREFORD CORPORATION OF WYOMING.

The offering includes many individuals that would be an attraction in any public sale anywhere, and buyers will find a very high standard of quality throughout the entire list of entries. Among some of the good ones might be mentioned the herd sire SONOMA, Grand Champion at 1917 Denver Livestock Show; CALIFORNIA PRINCE DONALD, Grand Champion bull at 1918 California State Fair; NEVADA LAD 8TH, first prize senior bull calf 1918 California State Fair; three choice heifers bred to the $10,000 bull BEAU BLANCHARD 76TH; heifers bred to PATRICIAN 5TH; and many others of equal attractiveness.

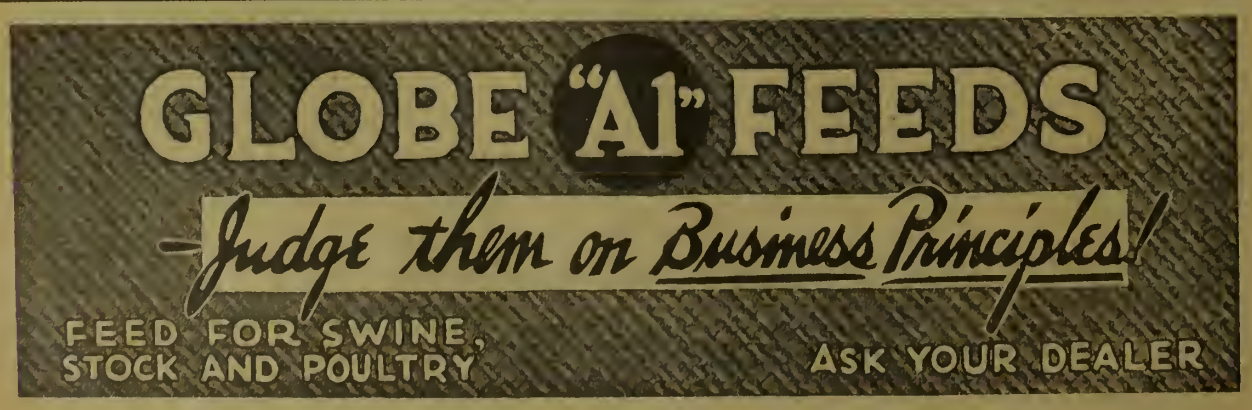
EVERY ANIMAL SOLD AS A SINGLE LOT GUARANTEED TO BE A BREEDER

EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED

Auctioneer: Earl Gartin, Greensburg, Ind.

CATALOG FREE ON REQUEST

Sales Manager: C. L. Hughes, Sacramento, Cal.



Jersey Cattle Breeders' Association on the third, a convention of delegates from all the pure bred stock associations on the fourth to form a new pure bred organization representing all the breeds, a meeting of the State Agricultural Society on the fifth, banquets by the Pacific Coast Hereford Cattle Breeders' Association and the California Shorthorn Breeders' Association in the evening of the sixth, the convention of the California Sheep and Wool Growers' Association on the seventh, and a gathering of the agricultural committee of the American Bankers' Association on the afternoon of the closing day.

Manager Gordon H. True of the California International Live Stock Show at San Francisco, November 1 to 8, has selected the most capable live stock authorities he could obtain in the United States to judge the classes at the San Francisco show.

In addition to the judges given in the accompanying schedule, Walter Palmer of Ottawa, Illinois, will officiate at the night horse show.

JUDGING OF LIVE STOCK

Saturday, November 1, 9:30 a. m.

Poultry by E. F. Mitchell, Fresno; Nat. E. Luce, Los Angeles.
Pigeons by W. J. Head, Berkeley.
Rabbits by Hale Prather, Ukiah; Louis Regner, San Mateo.
Dressed poultry by J. H. Spelker, Oakland.
Dressed rabbits by J. H. Spelker, Oakland.
Junior feeding classes by Prof. J. I. Thompson, Davis.

Monday, November 3, 9:30 a. m.

Herefords by R. D. Mousel, Cambridge, Nebraska.
Fat steers by Dean C. F. Curtiss, Ames, Iowa.
Holstein-Friesians by Prof. E. W. Major, Los Angeles.
Jerseys by Prof. J. B. Fitch, Manhattan, Kansas.
Mutton breeds by Frank Brown, Carlton, Oregon.
Car lots of sheep by Frank Brown, Carlton, Oregon.
Berkshires by Prof. H. H. Kildee, Ames, Iowa.
Poland Chinas by W. H. Pew, Ravenna, Ohio.
Fat barrows by W. H. Pew, Ravenna, Ohio; Prof. H. H. Kildee, Ames, Iowa.
Milch goats by Prof. E. C. Voorhies, Berkeley.

Tuesday, November 4, 9:30 a. m.

Shorthorns by W. H. Pew, Ravenna, Ohio.
Guernseys by Prof. J. B. Fitch, Manhattan, Kansas.
Fine wool sheep by Charles Cook, Hayward.
Duroc-Jerseys by Prof. H. H. Kildee, Ames, Iowa.
Chester Whites by V. F. Dolcini, Davis.
Percherons by Dean C. F. Curtiss, Ames, Iowa.
Belgians by Dean C. F. Curtiss, Ames, Iowa.

Wednesday, November 5, 9:30 a. m.

Aberdeen-Angus cattle by Alex. McDonald, Davis.
Aryshires by Prof. H. H. Kildee, Ames, Iowa.
Hampshires by W. H. Pew, Ravenna, Ohio.
Yorkshires by W. H. Pew, Ravenna, Ohio.
Tamworths by V. F. Dolcini, Davis.
Shires by Dean C. F. Curtiss, Ames, Iowa.
Dressed carcasses by Frederick Miller, United States meat inspection service, San Francisco; E. E. Nicolls, bureau of markets, San Francisco.

PORK DAY A BIG EVENT

The first Kings County Pork Day held at Hanford, October 15, proved to be one of the biggest successes ever staged in this state and it has been decided to make the event an annual affair. The event was promoted by and held under the auspices of the farm bureau, the local chamber of commerce and the California Marketing Association. Over 2,000 people attended the show and sale.

Seven carloads of finished porkers were entered in competition for the liberal prize money. An evidence of the quality of the hogs is indicated by a statement of one of the buyers that it was the finest lot of hogs he had ever seen put up at auction in his 30 years' experience.

The various lots were judged by Professor J. I. Thompson of the university farm. Following the placings a program was held which included addresses by Professor C. W. Rubel, Roy M. Filcher, F. L. Washburn and John W. Jenkins.

At the close of the program the winning lots were sold at auction. Follow is a list of the awards:

Carload—1, $350, Corcoran center; 2, $280, Hardwick center; 3, $210, Hanford center; 4, $145, Stratford center; 5, $70, Grangeville-Armona center.

Ten hogs—1, $100, Hanford center; 2, $80, Corcoran center; 3, $60, Stratford center; 4, $40, Island center; 5, $20, Grangeville-Armona center.

Single hog—1, $25, William Bernstein; 2, $20, G. I. McCune; 3, $15, Roy D. Filcher; 4, $10, J. W. Creelman; 5, $5, W. D. Trewhitt.

Largest hog—M. Bassett.

Sales of the prize animals were as follows:

Number	Average Weight	Price
70	221	$16.70
70	235	14.65
70	230	14.50
70	241	14.30
70	232	14.05

Other cars entered for prize sold as follows:

Number	Average Weight	Price
70	241	$14.30
70	228	14.20

SERIES OF HEREFORD SALES

The sale of Herefords to be held at the San Francisco Livestock Show, under the auspices of the Pacific Hereford Breeders' Association, will be the first of a series of three sales to be held in San Francisco early in November. The fact that three sales are scheduled indicates the growing popularity of the Whiteface in this state, and these sales are expected to extend the popularity now being accorded the breed.

The first sale, which will be held November 7, has been planned to attract those interested in securing reliable foundation stock. As evidence of the quality of the offering it is only necessary to mention that the following herds have furnished the consignments: Chas. Rule, Jenner; W. M. Bemmerly, Woodland; H. M. Barngrover, San Jose; Diablo Stock Farm, Danville; John A. Bunting, Mission San Jose; H. H. Gable, Esparto; J. H. Cazier & Sons, Wells, Nevada; Hereford Corporation of Wyoming.

The sale will include Sonoma, grand champion bull at Denver in 1917; California Prince Donald, grand champion at the 1918 California state fair; Nevada Lad 8th, first prize senior calf at the 1918 California state fair; three heifers bred to the $10,000 Beau Blanchard 76th, and a number of females in the show herd of the Hereford Corporation of Wyoming.

Following the above sale H. M. Barngrover of San Jose will sell 90 head of pure bred but unregistered cows and heifers, many of them bred to Patrician 5th. This sale will be held at the Western Meat Company's plant in South San Francisco, November 8.

The third sale will consist of 75 head of registered bulls, cows and heifers from the Diablo Stock Farm. This sale will be held November 10.

The three sales will be managed by C. L. Hughes of the California Breeders' Sales & Pedigree Company, Sacramento. Col. Earl Gartin of Indiana will serve as auctioneer in the association sale and Col. Ben. A. Rhoades of Los Angeles, assisted by Col. Bell of Tulare, will sell the second and third sales.

90 Purebred Unregistered

HEREFORDS

at Public Auction

Western Meat Company's Yards

South San Francisco

Saturday, November 8, at 1 p.m.

This is an extra choice lot of Hereford cows, heifers, and bulls, and is a complete dispersal of the unregistered Herefords owned by Mr. H. M. BARNGROVER, Proprietor of VERAMONT STOCK FARM, Taylorsville and Santa Clara, Calif. Mr. Barngrover is selling these cattle to make room for the expansion of his herd of registered Herefords.

There are about 40 splendid breeding cows in the offering, and most of their offspring are by Mr. Barngrover's high class herd sire PATRICIAN 5TH.

This is a rare opportunity for the buyer who wants to put some exceptionally high bred, profitable cattle on his range, and the offering will be made in such a way that the buyer of only a few head will have a chance to buy.

NOTE—There is frequent street car and Southern Pacific train service between San Francisco and South San Francisco, and good roads all the way for parties traveling by auto. Mr. Barngrover may be seen personally at the San Francisco Livestock Show where he will exhibit Herefords.

For further information communicate with owner or sales manager.

Auctioneer
Col. Ben A. Rhoades,
Los Angeles

Owner
H. M. BARNGROVER
Santa Clara, Calif.

Sales Manager
C. L. Hughes
Sacramento, Calif.

DISPERSAL SALE

REGISTERED HEREFORDS

Diablo Stock Farm, Danville, Calif., will make a complete dispersal at public auction of their herd of registered horned Herefords in order to center their efforts entirely upon the breeding of registered Polled Herefords, of which they have a choice herd now in the process of development. The offering will be made at

San Francisco

Monday, November 10, 1919

Watch for detailed announcement in next week's issue, which will also state the location in San Francisco that sale will be held.

ABSORBINE
TRADE MARK REG.U.S.PAT OFF

Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. $2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse Book 2 R Free.

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Don't Miss This Sale

If You Want Good Holsteins

Thursday, October 30, 1919

C. A. Miller Ranch, Ripon, Cal.

100 Registered Holstein Cows, Heifers and Bulls

CONTRIBUTORS:

C. A. Miller, Ripon Wm. T. Miller. Ripon H. A. De Wolf, Ripon
Gotshall & Magruder, Ripon
(C. A. Miller disperses his herd of abont 50 head)

This is one of the best bred offerings ever made in the San Joaquin Valley, and contains a very large percentage of young cattle, from heifer calves up to 3 and 4 year olds, with a choice lot of cows in their prime. Among them are:

A. R. O. Cows with records up to over 28 lbs. in 7 days.

Daughters of Cows with records up to over 32 lbs. butter in 7 days.

Daughters and Sons of King Korndyke Pontiac XX, the $6500 son of Miss Valley Mead del Kol Walker.

Daughters of Prince Gelsche Walker.

Daughters of Sir Veeman Korndyke Pontiac, 30 pound son of Sir Veeman Hengerveld.

Cows and Heifers bred to a 33 pound son of King Mead of Riverside.

Daughters of 30 to 40 pound sires.

Daughters of 20 to 32 pound dams.

NOTE—Sale will be held on the C. A. Miller Ranch, 6½ miles northwest of Ripon, 13 miles southeast of Stockton, on French Camp Road, Tidewater and Southern cars from Stockton and Modesto will stop at the ranch on sale days. Parties coming by Southern Pacific will be met at Ripon morning of sale.

Every animal guaranteed to be a breeder; no animal tuberculin tested. Catalog free on request.

Auctioneers

Col. Ben A. Rhoades, Los Angeles
Col. Geo. W. Bell, Tulare

Management

California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager
Sacramento, Calif.

DISPERSAL SALE OF

REGISTERED

100 HOLSTEIN-FRIESIAN COWS 100

Wednesday & Thursday November 5th & 6th, 1919

6 Granddaughters of King of the Pontiacs, the sire of 253 tested daughters—3 above 40 lbs—3 above 1000 lbs. Butter in one year.

3 Granddaughters of Pontiac Korndyke, the sire of 149 tested daughters—2 above 1000 lbs. Butter in one year.

6 Granddaughters of Pontiac Aaggie Korndyke, the sire of 58 tested daughters—6 above 1000 lbs. Butter in one year.

1 Granddaughter of Hengerveld De Kol, the sire of 116 tested daughters—10 above 30 lbs. Butter in 7 days—3 above 925 lbs. Butter in one year.

1 Granddaughter of Colantha Johanna, the sire of 120 tested daughters—25 above 30 lbs. Butter in 7 days.

2 Granddaughters of Rag Apple Korndyke 8th, sire of 30 tested daughters—1 above 40 lbs. Butter in 7 days.

4 Granddaughters of Beauty Pietertje Butter King Jr., the sire of 21 tested daughters.

1 Granddaughter of King Segis Pontiac, the sire of 92 tested daughters.

1 Granddaughter of Sir Pontiac Rag Apple, the sire of 22 tested daughters.

3 Granddaughters of King Hengerveld Palmyra Fayne, the sire of 18 tested daughters.

68 of these cows are now on YEAR'S TEST making Good Records. Several have completed their Year's Test and have made good records.

These young cows are nearly all bred to Finderne Soldene Pontiac Valdessa, the Bull with the phenomenal backing. He is a Son of A WORLD'S RECORD COW and his sire is a Son and Grandson of WORLD'S RECORD COWS. The names of 10 WORLD'S RECORD COWS and 8 BULLS that have each sired one or more WORLD'S RECORD COWS appear in his pedigree.

Complete Dispersal Sale of OUR FOUNDATION HERD. ALL TUBERCULIN TESTED. Write for Catalog.

GEO. A. SMITH & SON, Owners Corcoran, California

The Highest Priced SIRE and SON

KING KORNDYKE PONTIAC 20th

and HIS SON

KARLRAY PONTIAC TOLA

King Korndyke Pontiac 20th, our junior herd sire, at $6500, is the highest priced Holstein bull ever sold at public sale in California.

Karlray Pontiac Tola, a three months old son of King Korndyke Pontiac 20th, and the great heifer K. P. Tola Joe, has been sold by Gotshall and Magruder, Ripon, to A. B. Spooner, San Luis Obispo, at a price never exceeded in California for a bull calf at private sale.

In these instances price is a true measure of quality.
Why not put a son of this sire at the head of your herd?

OUR ENTIRE HERD IS TUBERCULIN TESTED

Tulare Holstein Farm

W. J. HIGDON, Owner TULARE, CALIF. H. L. REDD, Herdsman

Roselawn Shorthorns Average $608

One of the most satisfactory sales of beef cattle ever held in the West occurred at Woodland, Thursday, October 16, when H. M. Elberg, proprietor of the well known Roselawn herd of Shorthorns, sold 44 head, 36 females and seven bulls, for a total of $26.175, an average of $608.75.

The sale offered fine proof that California cattlemen are willing to pay for quality when it is offered, and was a splendid tribute to the high regard in which the Roselawn herd is held.

The setting for the sale was ideal. Perfect weather combined with perfect arrangements and a class of cattle of proven worth, presented in rare condition, were the contributing factors for this great sale.

The top price of the offering was scored by the late junior yearling, Rosie Mayflower, daughter of Sultan Mayflower, the bull at the head of the university herd. She is easily one of the top Shorthorn females to sell in the West and at $2,200 became the property of the Conaway Ranch, Woodland, C. Harold Hopkins, manager, making the last bid over a field of the leading breeders in California. Mischief E. 3d, grand champion at the 1918 state fair and dam of Roselawn Champion, junior champion at the same show, was added to the Caledonia Farms' herd by Edward Cebrian, at $1,550. Lovely's Pride, a good Scotch cow, sold, with a heifer calf at foot, to the Fair Oaks Ranch, Willits, for $1,150 and her two year old daughter, Lovely's Pride 3d, was taken by Caledonia Farms at the same price.

O. L. Raper of Glenn, who has recently purchased the entire herd of Shorthorns owned by Chas. Silva, Sacramento, was the successful bidder on the three year old bull, Crescent Dale, making him bring $2.000. George E. Dierrsen, who is establishing a herd near Sacramento, was the runner up. Crescent Dale is one of the good bulls of the West.

One of the heaviest buyers was the Edinger-Johnston Company of Hood. This firm is just entering the Shorthorn ranks and it is their intention to own one of the top herds of the state. They secured seven lots.

G. J. Meister, North Sacramento, also entered the Shorthorn business at this sale. Meister selected two good bargains.

The sale was held under the management of the California Breeders Sales and Pedigree Company, Sacramento. Col. Ben A. Rhoades of Los Angeles officiated in the box in an outstanding manner and Col. Harry Crancke of Nez Perce, Idaho, worked the ringside very effectively.

FEMALES

2. Mischief E 3d, Sept., 1910; Edward Cebrian, San Francisco, $1,550.
3. Rosie Mayflower, June, 1918; Conaway Ranch, Woodland, $2,200.
4. Lovely's Pride 3d, Dec., 1917; Edward Cebrian, $1,150.
5. Lovely's Pride, June, 1911; Fair Oaks Ranch, Willits, $1,150.
6. Gloster's Maiden, Oct., 1912; Edinger-Johnston Co., Hood, $650.
7. Roselawn Blossom, Jan., 1917; Ratto Stock Farm, Napa, $675.
8. Mayfield Magnolia, Aug., 1916; R. H. Parsons, Hilt, $950.
9. Mayflower, May, 1918; Wm. Bond, Newark, $700.
10. Roselawn Rose, Aug., 1917; J. F. Dunne, Gilroy, $525.
11. Peaceful 5th, Sept., 1911; T. S. Glide, Davis, $650.
12. Roan Butterfly, Jan., 1918; Edinger-Johnston Co., $400.
13. Dale's Lady, Nov., 1918; G. J. Meister, North Sacramento, $275.
14. Roselawn 68th, Jan., 1913; Geo. E. Dierssen, Sacramento, $425.
15. Roselawn View, Feb., 1917; R. H. Parsons, $550.
16. Ringleader's Mary, Oct., 1918; G. J. Meister, $275.
18. Roselawn Flora, May, 1918; Edinger-Johnston Co., $375.
20. Ringleader's Miss, Feb., 1918; G. J. Meister, $325.
21. Pearl Duchess, Mar., 1918; Butte City Ranch, Butte City, $350.
22. Roan Cloverleaf, May, 1918; Edinger-Johnston Co., $300.
23. Autumn Flower, Sept., 1913; J. F. Dunne, $500.
24. Roselawn Bess, Aug., 1917; Edinger-Johnston Co., $550.
25. Roselawn 37th, Jan., 1910; H. L. & E. H. Murphy, Perkins, $375.
26. Roselawn 26th, Sept., 1910; Fair Oaks Ranch, $650.
27. Roselawn 69th, Jan., 1913; Edinger-Johnston Co., $450.
28. Roselawn Welcome, May, 1918; Geo. E. Dierssen, $400.
29. Roselawn 64th, Jan., 1913; R. H. Parsons, $850.
30. Maid of Roselawn, Feb., 1919; Wm. Bond, $325.
31. Roselawn 62d, Sept., 1912; Wm. Bond, $375.
32. Roselawn Princess, May, 1918, University of California, $475.
33. Choice Bud 10th, May, 1914; Edinger-Johnston Co., $475.
35. Scottish May 2d, Dec., 1912; Ratto Stock Farm, $400.
36. Ringleader's Ann, Nov., 1915; J. F. Dunne, $400.
37. Roselawn 51st, Jan., 1911; Butte City Ranch, $500.
38. Roselawn 44th, Sept., 1910; Butte City Ranch, $475.
39. Choice Lawn, June, 1917; Geo. E. Dierssen, $350.

BULLS

1. Crescent Dale, March, 1916; O. L. Raper, Glenn, $2,000.
41. Roselawn Dale, Oct., 1918; J. F. Dunne, $475.
42. Crescent Gloster, Dec., 1918; Butte City Ranch, $425.
43. Ringleader's Best, Sept., 1918; J. F Dunne, $525.
44. Roselawn Diamond, Dec., 1917, Miller & Lux Inc., San Francisco, $525.
45. Clara's Dale, Nov., 1918; J. S. Stephens, Woodland, $400.
46. Fancy Dale, Jan., 1919; Ratto Stock Farm, $400.
47. Scottish Dale, Jan., 1919; J. F Dunne, $400.

* * *

Notes on the Roselawn Sale

The sale was a notable success in every way, but particularly for the reason that it served to start at least two new breeders, the Edinger-Jonnston Company of Hood and G. J. Meister of North Sacramento making their initial purchases of females.

Edward Cebrian, manager of the Caledonia Farms, West Sacramento, has a keen eye for the best and usually gets what he sets out after. His selections at the Roselawn sale were especially attractive. The aged cow Mischief E. 3d is a proven producer and her general quality throughout makes her a strong addition to any herd.

W. S. Guilford of the Butte City Ranch was determined to have some of the good ones and was a liberal bidder on the better things. Guilford made a particularly good buy when he secured the December bull calf Crescent Gloster. This youngster is a snappy, straight-lined fellow out of a Duchess of Gloster dam and sired by Crescent Dale. Guilford plans to develop him for one of the herd bulls to be used in the Butte City herd. Guilford also selected several desirable females.

Frank Brown, Carleton, Oregon, western field man for the American Shorthorn Breeders' Association, attended the sale and assisted a number of buyers in making their selections. Brown will judge Shorthorns at the Los Angeles Livestock Show.

B. O. Cowan, formerly assistant secretary of the American Shorthorn Breeders' Association, and one of the best posted men in America on Shorthorn history, was on hand and declared that he did not remember a sale where the quality of the offering was so uniform throughout as he found at Roselawn. Cowan made a very interesting talk at the opening of the sale and recounted many facts in regard to the early development of the breed in this state.

George E. Dierssen of Sacramento, who made his initial purchases at the Carruthers sale, last July, added three good females to his herd and was a strong contender for the top bull, Crescent Dale.

J. F. Dunne of Gilroy, who is one of the large cattle operators of that section, secured a number of the females and was the heaviest buyer of bulls, taking three head of young bulls.

Professor J. I. Thompson of the University Farm, made a good selection in the junior yearling heifer, Roselawn Princess, a daughter of Ringleader.

Wm. Bond of Newark was there to see that no one "stole" the cattle and made several additions to his herd. Bond got a bargain in the February heifer calf, Maid of Roselawn.

Wm. Carruthers was after the good Scotch things and was the runner up on all of the tops. Carruthers knows 'em as well as any and his bidding is a good guide to those not so familiar with the best.

R. H. Parsons, who maintains a good herd near Hilt, California, selected three of the top females at bargain prices.

T. S. Glide of Davis, one of the pioneer Shorthorn breeders of the West and proprietor of the Hillcrest herd, only got one cow but he was after a number of the tops.

Much credit for the success of the sale is due Messrs. Johnson, Snow and Dunlap who had charge of the fitting of the sale offering. No sale has exposed a better conditioned lot of cattle. Each of the above men is a master of the art of fitting.

Apiarists in canyons of foothills or mountains in the fire swept area are planning to move their colonies to higher ground in time to avoid danger of winter floods.

A rancher who has a few colonies of bees has sown his ditch banks with white clover to provide honey making material.

SANTA ANITA RANCHO

Anoakia Breeding Farm

Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five gaited saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin
Santa Anita Calif.
W. H. Taylor, Supt.

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The size of your check depends less upon the size of your herd than upon the size of your cows. Get big, healthy, pure bred cows with the ability to convert feed into milk at a profit.

Wherever dairying is on a prosperous footing, that's the home of the Holstein cattle. Besides being the leading dairy breed, they bring top prices when beefed. They breed regularly, and the calves are easily reared.

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Quality Holsteins

Our herd is headed by a grandson of the world's greatest dairy cow, Tilly Alcartra,

Sir Aaggie Korndyke Alcartra

whose dam and sire's dam average:
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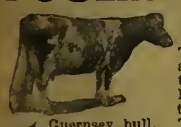
Females and bulls from A. R. O. dams for sale
All animals guaranteed

Leeman & Kilgore, Ripon, Calif.

GUERNSEYS



196 — 368

These figures represent the average butter fat production of a grade herd in Minnesota before and after the use of a pure bred Guernsey bull. The improved herd brought the owner prosperity. — the original, only drudgery. Write to breeders for descriptions and prices and send for our free booklet "The Grade Guernsey."

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R. M. DUNLAP, Hotel Land, Sacramento, Cal.

Live Stock News Notes

SALE CALENDAR

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

Geo. A. Stengle of Lark Meadow Ranch, San Gabriel, writes: "Advertising brings results if you just keep pecking away at it. At the rate we are going we will soon be cleaned out of Berkshires. Recent sales include the following: W. C. Gathright, Fillmore, one bred gilt and a hoar; J. M. Alfter, San Gabriel, gilt; N. H. Stayer, Strathmore, hoar; Mrs. Maud Minehan, San Gabriel, bred gilt; C. N. Esender, Moapa, Nevada, two bred gilts and three open gilts; Joe Hoegel, San Gabriel, bred gilt; J. J. Phillips, Los Angeles, gilt; Laura McCann Bennett, Escondido, bred gilt; Abran Marron, Jr., Oceanside, hoar; Ben Russell, Whittier, boar; Kenneth Douglas, El Monte, gilt."

John A. Bunting, owner of the Mission Hereford herd, Mission San Jose, has sold to E. C. Apperson of Sunol a young bull calf sired by New Era 2d and out of Pearl Ranier, one of the good producing cows in the Bunting herd. So well pleased was Mr. Apperson with the Mission herd that he has placed an order for at least one of the top bull calves produced each year. The price paid for the above calf was $500.

Following the sale of Herefords to be held at San Francisco, November 7, C. L. Hughes of the California Breeders' Sales and Pedigree Company will sell at South San Francisco 100 head pure bred unregistered Hereford cows and heifers for H. M. Barngrover of San Jose. The sale, the first of the kind in this state, will be held at the yards of the Western Meat Company.

W. L. Haag & Son, Hanford, have recently sold to Edgar Ramsey, Donald Pickrell, Roy Kuns and Nevin Burrell Poland-China sows by Young Jumbo and bred to their young sire Lendorris Liberty Bond. Messrs. Haag state the demand for sows and gilts bred to Lendorris Liberty Bond is greater than they are able to supply.

A. Buckland & Son, Poland-China breeders of Fresno, report the sale of the hoar Buster The Great of California Buster to A. Whitmore, Hanford, and Giant Ben, a line bred Big Ben hoar, to Fred Wheaton, Helm.

E. R. Stalder, the Holstein specialist at Nuevo, showed a fine string of young cattle at Riverside. These are largely the get of the former herd bull Prince Lil Walker, a son of Prince Gelsche Walker, and out of a 24 pound cow. In a class of 12 entries the Stalder heifer Aralia Rowena Princess stepped into second place. Rosamaine's Pontiac Ormsby, in junior yearling bull class, was awarded first place. His sire is Sir Skylark Ormsby Hengerveld, and his dam is a 23 pound three year old. Mr. Stalder now has 18 cows bred, and he will begin test work again at an early date.

Geo. W. Thomas & Sons of Arlington Station, Riverside, are well launched in the breeding of high class Jerseys. Their fine bull Walnut Park Noble 142138 had the distinction of winning grand championship honors at the Riverside fair. The dam of this bull made a record of 605 pounds butter fat and 14,000 pounds of milk. His heifers are developing some excellent prospects. At head of a flock of grade Shropshire sheep is the champion ram U. C. 530. Mr. Thomas was superintendent of cattle at Riverside.

Dr. E. Avery Newton, offices 1026 Marsh-Strong Building, Los Angeles, has developed a fine hog breeding establishment at his ranch near Lankershim. A distinctive feature is that seen in the splendid housing and feeding facilities for the young and growing pigs. The herd boar in the Duroc section is Orion King of Ireland, he by Orion Cherry King 5th, his dam being the noted brood sow Cardinal Lady C.

H. B. Peake, proprietor of the Poland-China Ranch at San Bernar-

M. BASSETT, Hanford Cal.

Breeder Big Type Poland-Chinas

Excellent Poland-Chinas of all ages for sale.
Some fine young prospects

Lendorris Ranch

Recent purchases of a number of Big Type Poland-China sows places our herd in the foremost ranks on the Pacific Coast. A recent litter is by Liberator and several by Young Jumbo and Lendorris Liberty Bond. If you are interested in Big Type Poland-Chinas with unquestioned blood lines we would be pleased to have you write us.

W. L. Haag & Son Hanford, Calif.

It's a Source of Satisfaction to Know Where to Find the Right Kind of Hogs When You Want to Buy

King Jones Over

A son of the great King Jones. Dam by Long King out of a Big Bob sow. He possesses all the qualities of the modern Poland-China, weighs 600 pounds at 14 months, stretchy, deep, well hammed and right up on his toes. He leads the best herd of strictly big type sows in California.

Some extra good fall boars for sale now. Cholera immune.

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Ranch Paradise Road, Modesto

Strong and Vigorous

Young Poland-China boars sired by Joe's King, one of the good boars on the coast. These young boars are just ready for service, will grow big like their sire, and will sire quick growing pigs. These are the kind pork producers want. We will price them right. Write for full description.

Les McCracken *Ripon, Calif.*

The Pacific Herd of Big Type Polands.

Herd sire, King Hadley and A Wonder blood lines.
A few classy 5 months old boars for sale.
Satisfaction or money refunded. Prices reasonable.

Mrs. C. H. Andrews
Route 1, Box 46. Modesto, Calif.

Come and See Them

Our Big Type Poland-Chinas are the real kind of hogs. If you can't come write for what you want. We have them if you want the prolific, quick growing, big type kind.

Poland-China Ranch H. B. Peake Mgr. San Bernardino, Calif.

WHIZ-BANG----I Will Sell

He's a grandson of Caldwell's Big Bob, is big himself and will meet the requirements if you want them big. My fall pigs will be by him. Can't use him longer. Two litter mates sold recently, just about a year old. Priced reasonable. Write for more information.

J. H. Cook Paradise, Calif.

Big Type Poland-Chinas

of both sexes by these two great boars, LONG JUMBO and YATES' BIG ORPHAN at reasonable prices. Boars ready for service—sows for spring litters. Every animal guaranteed to satisfy.

R. J. Yates, Orland, Cal.

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Pumps, Engines, Sprayers, Hoists Etc.
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Mossdale Farm

JERSEY CATTLE **DUROC-JERSEY SWINE**

We believe that the test of a sire lies in his ability to sire uniform, prize winning offspring, and we are proud of the record of Mossdale sires.

Jerseys---

Our herd bull, JOLLY SENATOR RALEIGH, was never defeated in class as a yearling or as a two-year-old and this year he was grand champion, as a three-year-old, at the California State Fair, the Kings County Fair and the Fresno Fair. And at each of those shows his get won the get of sire class.

Duroc-Jerseys---

The record of Mossdale Durocs at recent fairs is proof of their merit. Freddy You'll Do, our herd boar, sired the winning get of sire group at the above fairs.

We can furnish young things of either breed at prices that are attractive. Write us your wants.

See Mossdale Exhibits at Los Angeles and San Francisco

J. E. Thorpe **Mossdale Farm** **Lockeford, Calif.**

Going!! Going!! in Our Big Fall Public Sale, November 11

24 SPRING BOARS—6 SPRING GILTS

Duroc-Jersey Spring Boars

2 by Uneeda Orion by High Orion.
5 by Uneeda King of Orion 8th by King of Orions.
3 by Valley View's Orion, grandson of Orion Cherry King Jr.
3 by Sammy King's Col.
6 by Uneeda Model Col, litter brother Grand Champion Sow California 1918.
4 by Crimson Col. by Uneeda King's Col.
1 by Invincible King's Col., dam by Cherry King Orion.
6 gilts by Sammy King's Col., dam granddaughter of Orion Cherry King Jr.
Dams of these pigs are by Cherry King Orion, High Orion, King's Model, and other noted boars.

Auctioneer, ORD L. LEACHMAN
W. T. Hollingshead & Sons

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Box 505, Orland, Cal.

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. Duke, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

The Keep On Herd Register of Merit Jerseys

Fifteen Keep Ons won twenty-six prizes and one gold medal. All three first prizes for production went to the Keep Ons. Grand Champion cow and Champion butter cow won by Keep On Herd. Buy a Keep On and get the best. Nothing finer or better. Bred for both show and production. Males and females at reasonable prices. Write your wants.

Dr. H. W. Hand **Orland, Calif.**

Is a Calf Worth 23 Cents?

For 23 cents you can insure your calves against death from Blackleg by having them vaccinated with PURITY BLACKLEG AGGRESSIN. (The Kansas Germ Free Blackleg Vaccine.) One treatment immunizes for life and there is no danger in introducing Blackleg into healthy herds of cattle. We also manufacture and sell PURITY ANTI-HOG CHOLERA SERUM, PURITY MIXED VACCINE for swine, and PURITY HEMORRAGHIC SEPTICEMIA VACCINES for cattle and sheep. Stop your losses and increase your profits—It's good business. For service that counts, and does not end by selling, write, wire or phone

PURITY SERUM CO., J. L. Thatcher, Manager (Successor to Thatcher Serum Co.)
Riverside, Calif. Sacramento, Calif.

dino, had an extensive display from his well known breeding establishment at Riverside fair. The three dominant strains in the Peake herd are Blue Valley, I. B. A. Wonder, and Superba. H. B.'s Superior Giant is the crack young big type boar now in service. He traces through old Superba to many of the most notable big type hogs of Iowa and Nebraska, and he is a good 1,000 pound prospect as a two year old. Peake is the man who believes the big type Poland-China hog is "the hog,' and the fine lineup of pigs to be seen at the ranch is his best argument every day in the year. Some of the best ribbons at Riverside went to this herd.

California, prestige in live stock circles was greatly enhanced at the National Dairy Show held in Chicago October 6-11, by the winnings of Edgemoor Farm, Santee, owned by Mr. Dupee. Included in the winnings were: 1, 2, 4, and 5 on aged cow; 2 and 3 on three-year-old cow; 2 on 2-year-old cow; 1 on senior yearling heifer; 1 on junior yearling heifer; 2 and 3 on senior heifer calf; 1 and 2 on junior heifer calf; 1 on aged herd; 2 on breeders young herd; 1 on calf herd; 1 and 3 on get of sire; 2 on produce of dam; 1 and 3 on senior A. R. cow; 1 on junior A. R. cow, and the Frank S. Peer trophy for get of sire.

The Conway Ranch, Woodland, is establishing a very high class flock of Hampshire sheep. This ranch, which is under the management of C. Harold Hopkins, is designed to occupy a large place in the live stock affairs of the west. Foundations have been started for top herds of Shorthorn cattle and Berkshire hogs.

Edward Cebrian, proprietor of the Caledonia Farms, West Sacramento, finds that it will be impossible to exhibit Shorthorns at the Los Angeles Live Stock Show owing to the shortage of help. Mr. Cebrian had expected to show his great two year old bull, Gainford Matchless, and Shorthorn interests were looking forward to seeing this bull in the show ring. Cebrian expects to show at San Francisco and will also make a notable consignment to the sale to be held under auspices of the California Shorthorn Breeders Association. In the consignment will be a number of very choice females bred to Caledonia, the celebrated imported bull recently put at the head of the Cebrian herd. This will afford the first opportunity California breeders will have to secure the blood of this bull that is certain to have a wide influence on the breed in the West.

John A. Bunting, secretary of the Pacific Coast Hereford Breeders Association, reports that the Hereford Corporation of Wyoming, Cheyenne, Wyoming, has taken out membership in the association and will contribute a few high class females to the sale to be held at San Francisco during the live stock show. The Hereford Corporation of Wyoming has one of the largest herds of registered Herefords in the world. Last year this firm sent a show herd to the Los Angeles Liberty Fair and they found the field so inviting that they are returning this year and their cattle will be seen at the Los Angeles and San Francisco shows. The sale which will be held under the auspices of the association will include 30 head of very high class females and five bulls, among which will be the well known bull, Sonoma, from the herd of Chas. Rule, Jenner. Sonoma was sired by Beau Perfection IX, a full brother to the famous Woodford. The sale will be managed by C. L. Hughes, of the California Breeders Sales and Pedigree Co., Sacramento.

Harvey M. Berglund, Dixon, reports the following sales from his Duroc-Jersey herd:

To A. Bloom, Dixon, two bred gilts and a boar; to Dr. O. A. Hoffman, Walnut Grove, a boar; to J. H. Veteran, Walnut Grove, a gilt; to E. Rohwer, Dixon, a boar; to W .C. Scott, Winters, a boar; to Chas. E. Greens, Woodland, a boar; to Captain C. V. Biggs, Dixon, a bred gilt. Mr. Berglund expects to show at the San Francisco show.

Mrs. Viola L. Renwick, Santa Barbara, reports the recent purchase of a fall yearling daughter of the noted Big Bob from the Bennett Bros. herd in Missouri. This sow is to be bred to Liberty Bond for March litter. Another recent purchase is that of a second yearling daughter of Big Bob with six fine pigs at side by Buster's Model. These are excellent accessions to one of the meritorious herds of Poland Chinas of the south end of the state.

Leest & Mounier, Van Nuys, have sold to W. V. Mong of Whittier an April Duroc gilt for $200. She is a daughter of the Liberty Fair junior champion boar, Orion's King Gano, owned by Donald H. Graham.

B. H. Wilkinson of Falfadale Farms, Perris, sold during the Riverside fair for $300 the fine two year old sow, Amazetta Again, bred to Winsor's Giant Orion. A second sale was that of a daughter of Winsor's Giant Orion to George Junior Republic, bred to Great Orion Sensation Jr.

M. Bassett has bought for his big Poland China breeding establishment at Hanford a select young big type boar sired by the noted boar Big Sensation, whose official weight is 1,204 pounds in show form. The pig is out of a 1,000 pound dam. He comes from the Erhart herd in Missouri.

S. M. Padias is a new breeder of Durocs at Tustin, Orange County. A recently purchased foundation sow is a daughter of Iowa's Best, the well known big boar owned by W. J. Stewart at Tulare.

— Third Sale of Shorthorns —

Under auspices of California Shorthorn Breeders' Association will be held on

Thursday, November 6th, 1919
at 1:30 P. M. Sharp

at California Building, Exposition Grounds
SAN FRANCISCO

In conjunction with the San Francisco Live Stock Show, Nov. 1st to 8th, 1919

30 Head of Cows and Heifers 10 Head Bulls

The entries to this sale have been selected both from the standpoint of individuality and breeding, and represent unquestionably the greatest lot of Shorthorns ever offered at public sale in California.

The offering comes from the herds of the following well known breeders:

ORMONDALE COMPANY, Redwood City, Calif.
CALEDONIA FARMS, West Sacramento, Calif.
(Edward Cebrian)
ESTATE OF T. B. DIBBLEE, Santa Barbara, Calif.
(San Julian Ranch)
PACHECO CATTLE COMPANY, Hollister, Calif.
T. T. MILLER, Hollister, Calif.

For catalogue, address

California Shorthorn Breeders Association

222 Sharon Building, San Francisco

Auctioneer: Earl Gartin, Greensburg, Indiana

Hanford Polands Average $114

The joint sale of Poland-Chinas held at Hanford, Saturday, October 18, by Messrs. Trewhitt, Vaughn and Nehls resulted in a very satisfactory average of $114 on 67 head of bred and open gilts and boars. In view of the fact that this was the fourth sale to be held at Hanford during the past six weeks, the above average indicates the strong and sustained demand that exists for pure bred Polands. A few days before the sale the Kings County Pork Day served to demonstrate the value of better blood in the production of market pork and the lesson of the show was reflected in the general average.

The top of the sale was the good yearling gilt, Miss Orphan 2d, sired by Orphan Bob and out of a Big Bob Wonder dam. She was consigned by C. A. Vaughan and was purchased by Wm. Bernstein of Hanford at $450.

A feature of the sale was the patronage of a number of pig club boys who were in the market for bred gilts. These youngsters held their own with the more experienced bidders.

The offering was presented in nice breeding condition.

Col. Geo. W. Bell of Tulare was on the block and Col. Clark of Modesto and Fred Gatewood of Fresno assisted in the ring.

A list of representative sales follows:

W. D. Trewhitt Consignment

1. J. M. Bernstein, Hanford, $110.
2. J. W. Jenkins, Hanford, $85.
3. Teddy Nelson, Kingsburg, $85.
4. J. W. Arthur, Hanford, $105.
5. E. W. Davis, Delano, $90.
6. Rowlin Nelson, Selma, $120.
8. J. W. Arthur, Hanford, $150.
10. J. W. Nelson, Kingsburg, $105.
11. Les McCracken, Ripon, $255.
12. $105.
14. J. W. Arthur, Hanford, $150.
15. Roland Morine, Kingsburg, $115.
16. $115.
17. Les McCracken, Ripon, $245.
18. J. W. Jenkins, Hanford, $125.
19. F. Johnson, Hanford, $115.
20. Les McCracken, Ripon, $85.
21. W. C. Ficklin, Fresno, $105.
22. Morris Mode, Caruthers, $150.
23. Geo. E. Dierssen, Sacramento, $225.
24. F. Johnson, Hanford, $160.
25. Melvin Seward, Kingsburg, $80.
26. Jas. Kimball, Hanford, $125.
27. Jacob Mode, Caruthers, $155.
28. Geo. Nehls, Hanford, $200.
29. J. W. Jenkins, Hanford, $125.
30. Geo. Nehls, Hanford, $145.
31. J. W. Arthur, Hanford, $110.
117. Haag & Son, Hanford, $100.
32. J. W. Arthur, Hanford, $110.
33. J. W. Arthur, Hanford, $110.
34. J. W. Arthur, Hanford, $150.
35. J. W. Jenkins, Hanford, $95.
36. J. W. Arthur, Hanford, $105.
37. W. L. Choisser, Riverdale, $95.
38. Wm. Bernstein, Hanford, $170.
39. J. W. Arthur, Hanford, $170.
40. Z. M. Dickey, Dinuba, $105.
43. W. G. Cattanio, Hanford, $50.
45. J. W. Jenkins, Hanford, $30.
40. H. D. McCune, Lemoore, $100.

Geo. Nehls Consignment

47. J. O. Blakeley, Lemoore, $145.
48. Mrs. J. O. Blakeley, Lemoore, $90.
49. Haag & Son, Hanford, $75.
50. Les McCracken, Ripon, 90.
51. Les McCracken, Ripon, $80.
52. Wm. Hill, Hanford, $75.
53. Les McCracken, Ripon, $65.
54. Z. M. Dickey, Dinuba, $50.
55. Les McCracken, Ripon, $55.
56. Les McCracken, Ripon, $65.
57. Wilfred Arthur, Hanford, $80.
58. W. S. Trowbridge, Kingsburg, $65.
72. Les McCracken, Ripon, $35.

C. A. Vaughn Consignment

59. J. W. Jenkins, Hanford, $140.
60. D. F. Cahill, Lemoore, $140.
61. Luther Linda, Kingsburg, $125.
62. Wm. Bernstein, Hanford, $145.
63. J. W. Jenkins, Hanford, $135.
64. $170.
65. Haag & Son, Hanford, $100.
66. Wm. Bernstein, Hanford, $450.
67. H. S. Waltz, Hanford, $155.
68. Geo. E. Dierssen, Sacramento, $200.
69. A. J. VanCleef, Riverdale, $145.
70. Wm. Bernstein, Hanford, $150.
71. W. C. Ficklin, Fresno, $90.
73. W. C. Ficklin, Fresno, $40.

GREAT BULL CALF SOLD

A three months' old Holstein bull calf of outstanding breeding was recently sold by Gotshall & Magruder,

Karlray Pontiac Tola

Ripon, to A. B. Spooner, San Luis Obispo. This youngster, Karlray Pontiac Tola, is out of K. P. Tola Joe, whose record as a senior two-year-old has never been exceeded in California, and is sired by King Korndyke Pontiac 30th, the $6,500 son of Miss Valley Mead De Kol Walter.

It had been the intention of Gotshall & Magruder to retain the calf as a herd sire but they were finally persuaded to price him, and although the price named by them has never been exceeded on a bull calf at a private sale in California, Mr. Spooner lost no time in accepting it, realizing that he had secured a rare bargain. San Luis Obispo County may well be proud of the acquisition of this royally bred bull by one of her breeders.

LIVE STOCK LOSSES IN WAR COUNTRIES

Cattle, sheep and swine in nine countries of western Europe have decreased but have increased in other countries, including the United States, so that the present situation with respect to numbers is very much the same as before the war.

American exportations of meats and meat products may reach the prewar level before the herds and flocks of Europe have been increased to prewar numbers.

WORTH TRYING

There's no telling what a little kindness will do. Assumed superiority is no guarantee of greatness. The really big soul can afford to be kind and gentle. As the gentle rootlets move stones and split rocks, so gentle characters accomplish things undreamed of by rougher characters. This does not prohibit the use of firmness when necessary. But even that may be applied with such gentleness that it will get results without offending. This is beyond the reach of some men.—Exchange.

FIRST

California International

LIVE STOCK SHOW

California Building

San Francisco November 1-8

—Largest Exclusive Stock Show in the West—

YOU WILL SEE

The most complete exhibition of the live stock resources of the Pacific Coast ever assembled. The Cream of every improved breed of horses, cattle, sheep and swine and goats will be entered. Every allied industry will be represented.

The Dairy Division, with its world famous cattle and its exhibits of Dairy Products, makes this the "National Dairy Show of the West."

The most complete Poultry and Rabbit Show ever presented on the Pacific Coast will show the best that is offered from the most progressive breeders.

YOU WILL LEARN

Why and how the best are produced in this State and who owns them. You will learn to recognize the modern type and how better breeding stock can increase your profits.

YOU SHOULD COME

It is your show. It has much to offer and you will be welcome.

Horse Show - Music - Parades Each Night

World's famous horses will be exhibited in competition in the greatest night horse show ever staged in the West, furnishing educational amusement features that will be made into a different program for each night.

REMEMBER: SAN FRANCISCO KNOWS HOW

California International Live Stock Show

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Redwood or Fir—Any Height You Wish

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Cheaper and Better than Steel
Greater Flow Capacity than
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Pure Hawaiian Cane Molasses

Pork Production

By actual test will increase pork production five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price.

Milk Production

One of our customers writes: "We are out of molasses and our cows are falling off in their milk badly, hence we would appreciate immediate shipment. Kindly ship us two tons more in addition."

We supply it in barrels or tank cars for shipment anywhere. Attend the California International Livestock Show, San Francisco, Nov. 1 to 8.

W. H. Young Company

Holbrook Bldg. San Francisco

Economy Stock Powder

will keep your pigs in condition by acting on the liver, kidneys and blood. Will keep the stomach sweet, expel worms, aid digestion and prevent white scours and thumps.

Send for a free sample and our booklet "Economize Your Farm."

Economy Hog and Cattle Powder Co.

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AWARDS AT RIVERSIDE

(Continued from last week.)

Jersey

Exhibitors: Geo. W. Thomas, Riverside; Irving Fogsler, San Bernardino; Grant A. Brown, El Monte; Winsor Ranch, Bonita; W. C. Lookingbill, Riverside; J. E. Wherrei, Riverside; F. H. Van der Poel, Riverside.

Bull, 3 and over—1, Geo. W. Thomas; 2, Irving Fogsler.

Bull, senior yearling — 1, Grant A. Brown; 2, Winsor Ranch; 3, W. C. Lookingbill.

Bull, junior calf — 1, J. E. Wherrel, Riverside; 2, F. H. Van der Poel, Riverside; 3, F. H. Van der Poel, Riverside.

Cow, 3 yrs. and over — 1, Grant A. Brown; 2, Grant A. Brown; 3, Geo. W. Thomas.

Heifer, junior yearling—1, Brown; 2, Thomas; 3, Thomas.

Heifer, senior calf—1, Brown; 2, Brown; 3, Wherrel.

Heifer, junior calf — 1, Wherrel; 2, Thomas; 3, Brown.

Senior champion bull—Thomas on Walnut Park Noble.

Junior champion bull—Grant A. Brown on Shylock Monte.

Senior champion cow—Grant A. Brown on Shy Lady Viola.

Junior champion cow—J. E. Wherrel on Rowena.

Grand champion bull, any age—Thomas on Walnut Park Noble.

Grand champion cow, any age—Brown on Shy Lady Viola.

Calf herd—1, Brown; 2, Wherrel; 3, Van Der Poel.

Four animals, either sex, get of one sire—1, Brown; 2, Wherrel.

Two animals, either sex, get of one sire—1, Wherrel; 2, Thomas.

Herefords

Bull, 3 and over—1, D. H. Ogden, Alpine, on Beau Rupert.

Bull, junior yearling — 1, Ogden on Woodrow Rupert.

Bull, senior calf—1, Ogden on Cal. Real, Jr.

Bull, junior calf—1, Ogden on Killarney.

Heifer, senior calf — 1, Ogden on Ramona; 2, Ogden on La Juanta.

Heifer, junior calf—1, Ogden on Loretta.

Senior champion bull—Ogden on Beau Rupert.

Junior champion—Ogden on Woodrow Rupert.

Junior champion cow — Ogden on Ramona.

Grand champion bull, any age—Ogden on Beau Rupert.

Grand champion, any age—Ogden on

Grand champion cow, any age—Ogden on Ramona.

Aged herd—Ogden.

Calf herd—Ogden.

Four animals, either sex, get of one sire—Ogden.

SWINE

Berkshire

Exhibitors: F. L. Hall, Perris; Italian Vineyard Co., Guasti; Mrs. M. B. Walters, Perris; C. T. Johns, Cucamonga.

Boar, 2 and over—1, Hall on Ames Rival 118th; 2, Italian Vineyard on Sensational Successor 32d.

Boar, over 18 and under 24 months—I, Hall on Rose Crest Rival 3rd; 2, Johns on Champion Masterpiece No. 10.

Boar, over 12 and under 18 months—1, Italian Vineyard on Choice Goods 10th; 2, Hall on Rose Crest Rival 6th.

Boar, over 6 and under 12 months—2, Italian Vineyard on Laurel Prince 4th; 3, Hall on Rose Crest Rival Laurel 4th.

Boar, under 6 months—1, Italian Vineyard on Lee Natomas 3rd; 2, Hall on Rose Crest Rival 9th.

Sow, 2 and over—1, Hall on Rose Crest Favorite 2nd; 2, Hall on Rose Crest Favorite.

Sow, over 12 and under 18 months—1, Italian Vineyard on Duke's Princess 11th; 2, Italian Vineyard on Duke's Natomas Princess; 3, Hall on Lassie Rose 5th.

Sow, over 6 and under 12 months—1, Walters on Doon's Pug; 2, Italian Vineyard Co.; 3, Hall on Mistress Rose 2nd.

Sow, under 6 months—1, Hall on Artful Julia; 2, Hall on Julia Hill.

Senior champion boar—Italian Vineyard on Choice Goods 10th.

Junior champion boar—Hall on Rose Crest Rival 8th.

Grand champion boar — Hall on Rose Crest Rival 8th.

Senior champion sow—Italian Vineyard on Duke's Natomas Priness.

Junior champion sow—Italian Vineyard on Duke's Princess.

Grand champion sow—Italian Vineyard on Duke's Princess.

Aged herd, 1 boar and 3 sows over 1 yr.—1, Italian Vineyard; 2, Hall.

Young herd, 1 boar and 3 sows, under 1 year—1, Hall; 2, Italian Vineyard.

Get of sire, 4 animals any age and sex, sired by one boar—1, Hall; 2, Italian Vineyard.

Produce of sow, 4 animals, any age and sex, produce of 1 sow—1, Italian Vineyard; 2, Hall.

Breeder's aged herd, 1 boar and 3 sows, 1 yr., bred by exhibitor—Hall.

Breeder's young. F. L. Hall, herd 1 boar and 3 sows, under 1 year. Bred by exhibitor.

Pen 3 fat barrows under 8 months—Italian Vineyard.

Poland-China

Exhibitors: Italian Vineyard Co., Guasti; W. B. Gemmil, Ontario; Poland-China Ranch, San Bernardino; H. Christiansen, Arlington; Burton C. Platt, Los Angeles; J. R. Hollingsworth, Hemet.

Two years and over—1, Italian Vineyard on Smooth Jumbo Wonder; 2, Gemmil on Greenfield's Big Boy; 3, Poland-China Ranch on Greenfield Special.

Over 12 and under 18 months—1, Christiansen on President's Model; 2, Platt on Barley Boy; 3, Hollingsworth on Hemet's Model.

Over 6 and under 12 months—1, Poland-China Ranch on Blue Valley Model; 2, Poland-China Ranch on H. B.'s Superior Giant.

Under 6 months — 1, Christiansen on Smooth Jumbo; 2, Poland-China Ranch on Smooth Special; 3, Christiansen on Junior Jumbo.

Sow 2 yrs. and over—1, Italian Vineyard.

Sow over 12 and under 18 months—1, Platt on Big Sis; 2, Poland-China Ranch on Greenfield's Big Sis.

Sow over 6 and under 12 months—1, Poland-China Ranch on Peakes Blue Val-

Bunting's Mission Herefords Are Profitable

They will increase cattle profits by adding pounds of beef to every steer sold. For the best of breeding and individuality visit my herd and see the kind that win at the best shows. Prices reasonable. You'll be welcome.

JOHN A. BUNTING
Mission San Jose Calif.

DIAMOND G HEREFORDS

are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 2d, one of the best bulls in the West. Correspondence invited and visitors welcome.

H. H. Gable Esparto, Calif.

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If you are a business farmer, the chances are you have a mortgage. Why not put in a few registered Shorthorns and let them accumulate? Then when your mortgage is due, if you find it necessary, sell enough of them to pay it off. There is no easier way to get out of debt. Shorthorns have paid off many hundreds of mortgages.

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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References. The leading breeders in the state. Write or wire for dates and terms.

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600 Head Sheep

Mostly Rambouillet and Merino Ewes. Bred for early lambs and in good condition. Must be sold to close an estate. Address

C. H. Biggin
Redlands Cal.

10 Jersey Bulls

We have recently purchased the entire pure bred Jersey herd of Houston & Son, Imperial, — 143 head, and offering young bulls from $50 up. These are bred in the purple. Write for particulars.

Arden Dairy, Certified
El Monte, Cal.

Brighton Farm Herds

Registered Shorthorns
and
Berkshires---Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

ley Charm; 2, Platt on Candy Girl; 3, Poland-China Ranch on Peake's Lady Superb.

Sow under 6 months—1, Christlansen on Daisy; 2, Christlansen on Butter-Cup; 3, Poland-China Ranch on Big China Sis.

Senior champion boar—Christlansen on President's Model.

Junoir champion boar — Poland-China Ranch on Blue Valley Model.

Grand champion boar—Christiansen on President's Model.

Senior champion sow—Platt on Big Sis.

Junior champion sow—Platt on Candy Girl.

Grand champlon sow—Platt on Big Sis.

Aged herd, 1 boar and 3 sows, over 1 year—1, Poland-China Ranch; 2, Italian Vineyard.

Young herd, 1 boar and 3 sows, under 1 year—1, Poland-China Ranch; 2, Christiansen.

Get of sire, 4 animals any age and sex, sired by 1 boar—1, Italian Vineyard; 2, Christiansen; 3, Poland-China Ranch.

Produce of sow, 4 animals, any age and sex, produce of 1 sow—1, Italian Vineyard; 2, H. Christiansen; 3, Poland-China Ranch.

Breeder's young herd, 1 boar and 3 sows, under 1 year, bred by exhibitor—1, Poland-China Ranch.

Duroc-Jersey

Exhibitors: Diamond Bar Ranch, Spadra; H. S. White, Chino; Ireland Ranch, Owensmouth; Winsor Ranch, Bonita; J. J. Prendergast, Redlands; Falfadale Farms, Perris; Hewitt Bros., Van Nuys; Keystone Ranch, Lankershim; W. H. Moore, Fallbrook.

Boar 2 years and over—1, Diamond Bar Ranch on California Great Wonder; 2, White on Rivera Colonel; 3, Ireland on Ireland's Orion Defender.

Boar over 18 and under 24 months—1, Winsor on Golden Defender; 2, Winsor on Model Defender 1st; 3, Diamond Bar on Latest Model.

Boar over 12 and under 18 months—1, Diamond Bar on Mammoth Sensation; 2, Prendergast on Duroc Colonel Miller; 3, Keystone on Model Wonder.

Boar over 6 and under 12 months—1, Falfadale on Great Orion Sensation Jr.; 2, Hewitt on Top Sensation 1st; 3, Ireland Ranch on Ireland's Cherry Reform.

Boar under 6 months of age—1, Keystone on Model Wonder Jr.; 2, Ireland on Ireland's Mike; 3, Winsor Ranch.

Sow 2 years and over—1, Winsor on Model Defender Lady; 2, Moore on Defender's Ohio Maid; 3, Diamond Bar on Cutie's Rose.

Sow over 18 and under 24 months—1, Diamond Bar on Miss Orion Sensation; 2, Falfadale on Iowa Belle.

Sow over 12 and under 18 months—1, Charnock on Allie C. 2d; 2, Falfadale; 3, Diamond Bar on Willetta of Idlewild.

Sow over 6 and under 12 months—1, Diamond Bar on Pathfinder's Very Best; 2, Diamond Bar on Col. Golden Lady; 3, Winsor Ranch on Sensation Lady.

Sow under 6 months of age—1, Ireland on Ireland's Lady A; 2, Winsor Ranch; 3, Prendergast.

Senior champion boar—Diamond Bar on Mammoth Sensation 2d.

Junior champion boar—Falfadale Farms on Great Orion Sensation, Jr.

Grand champion boar—Diamond Bar on Mammoth Sensation 2d.

Senior champion sow—Winsor Ranch on Model Defender Lady.

Junior champlon sow—Diamond Bar on Pathfinder's Very Best.

Grand champion sow—Winsor Ranch on Model Defender Lady.

Aged herd, 1 boar and 3 sows, over 1 year—1, Diamond Bar Ranch; 2, Winsor Ranch; 3, Diamond Bar.

Young herd, 1 boar and 3 sows, under 1 year—1, Winsor Ranch; 2, Diamond Bar; 3, Keystone.

Get of sire, 4 animals, any age and sex, sired by 1 boar—1, Diamond Bar; 2, Winsor; 3, Keystone.

Produce of sow, 4 animals, any age and any sex, all produce of 1 sow—1, Winsor; 2, Keystone; 3, Hewitt.

Breeder's aged herd, 1 boar and 3 sows, all over 1 year of age, bred by one exhibitor—1, Winsor; 2, Ireland.

Breeder's young herd, 1 boar and 3 sows, all under 1 year of age, bred by exhibitor—1, Winsor Ranch; 2, Keystone Ranch; 3, Hewitt Bros.

Hampshires

Exhibitors: Fairbanks Ranch, Redlands; C. J. Gilbert, Lancaster; Llano Vista Rancho, Perris; Geo. I. Lytle, Perris; I. F. Stone, Ethanac.

Boar, 2 years and over—1, Fairbanks on Harvey's Choice; 2, Gilbert on The Harvester Again; 3, Llano Vista on Prince.

Boar, over 18 and under 24 months—1, Lytle on Major of Sierra Llano.

Boar, over 12 and under 18 months—1, Gilbert on Quality Allen 2d; 2, Gilbert on Mary Again.

Boar, over 6 and under 12 months—1, Fairbanks Ranch on Golden Lad; 2, Llano Vista Rancho on Honest Lad; 3, Gilbert on Harvestor's Echo.

Boar, under 6 months—1, Gilbert on Chief Harvester; 2, Llano Vista Rancho on Jimmie Boy.

Sow, 2 and over—1, Gilbert on Wavelet; 2, Gilbert on Leading Wave 3d; 3, Gilbert on Mary Pickford.

Sow, over 18 and under 24 months—1, Llano Vista Rancho on Patience; 2, Lytle on Laura of Sierra Llano; 3, Llano Vista Rancho on Winnie.

Sow, over 12 and under 18 months—1, Gilbert on Mary Allen; 2, Llano Vista Rancho on Lady Bound; 3, Gilbert on Antelope Miss.

Sow, over 6 and under 12 months—1, Llano Vista Rancho on Twilight; 2, Llano Vista Rancho on Dawn; 3, Gilbert on Harvester's Queen 2d.

Sow, under 6 months — 1, Stone on Mother's Choice; 2, Gilbert on True Allen; 3, Fairbanks Ranch on Francis B.

Senior champion boar — Fairbanks Ranch on Harvey's Choice.

Junior champion boar—Gilbert on Chief Harvester.

Grand champion boar — Fairbanks Ranch.

Senior champion sow—Gilbert.

Junior champion sow — Llano Vista Rancho.

Grand champoin sow—Gilbert.

Aged herd, of 1 boar and 3 sows, over 1 year—Fairbanks Ranch on Harvey's Choice, aged herd; 2, Gilbert on The Harvester Again and threo others; 3, Llano Vista Rancho on Prlnco and three others.

Young herd, 1 boar and 3 sows, under 1 year—1, Llano Vista Rancho on Honest Lad and three others; 2, Gilbert; 3, Fairbanks Ranch on Golden Lad and three others.

Get of sire, 4 anlmals, any age and sex, sired by one boar—1, Gilbert; 2, Fairbanks Ranch; 3, Llano Vista Rancho on Jimmie Boy and three others.

Produce of sow, 4 anlmals, any age and sex, produce of 1 sow—1, Gilbert; 2, Lytle; 3, Lytle.

Breeder's aged herd, 1 boar and 3 sows, 1 year, bred by exhibitor—1, Gilbert.

Breeder's young herd, 1 boar and 3 sows, under 1 year, bred by exhibitor—1, Llano Vista Rancho on Honest Lad and three others; 2, Gilbert; 3, Fairbanks Ranch.

Pen of 3 fat barrows under 8 months—1, Llano Vista Rancho.

Southern California Futurity, National Duroc-Jersey Record Association Specials for 1919, $200 for spring pigs not farrowed before March 1, 1919—Boars: 1, Keystone; 2, Ireland; 3, Winsor; 4, Winsor; 5, Hewitt. Sows: 1, Ireland; 2, Keystone; 3, Winsor; 4, Hewitt; 5, Winsor. Litter of 4—1, Keystone; 2, Ireland; 3, Winsor; 4, Hewitt; 5, George Junior Republic.

Junior Pig Special (in cooperation with the Riverside County farm bureau for best pig any breed under 6 months owned, fed and exhibited by boy or girl under 18 years) — 1, Fred Cutler, Spadra; 2, Thomas Barry, Chino; 3, Ernest Galwas, Riverside; 4, Harold B. Anderson, Riverside; 5, James Barry, Chino; 6, Frank Curtis, Chino.

Most economical gain in weight — 1, Winchell Atwater, Riverside.

Best Stock Exhibit (best live stock exhibit from one farm, not less than 4 varieties of animals)—F. L. Hall.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Worms in Horses

Please advise me through the Cultivator what to do for worms in horses. I have a mare and six months old colt that are infested with them. Have tried powders from the drug store, but without success.—Subscriber, Sisquoc.

There are a great many remedies for worms in horses but about the best you can get is to mix one part of wood ashes with two parts of common salt and give a tablespoon of the mixture in the feed morning and evening.

Enlarged Glands

Can you tell me what is wrong with a year old heifer that has the following symptoms? About three months ago a growth started on each side of her neck low down near the base. It has no core and does not seem to be from a bruise; resembles goiter more than anything else. It does not interfere with her breathing and does not seem to be sore, but the last week it has increased alarmingly. It seems to be an enlargement of the side muscles of her neck. She eats well and apparently feels well, but has a bloated appearance and stands with a hump in her back. Any information on the subject will be appreciated.—Subscriber, Roosevelt.

Located about where you describe the enlargements to be are some glands that the butchers call "sweet breads" in veal, but what their office is no one has found out. They disappear as the animal grows older. These glands may have become tubercular or become infiltrated with melanosis; which is the coloring matter of the hair. Either of these affections are known but are very uncommon. You see it is a matter of guessing when one can not see the case. You might try giving iodide of potash, two ounces dissolved in a pint of water and a tablespoon given once a day in the drinking water.

Inflating Udder for Congestion

Would you advise pumping air into the cow's udder that has a congested quarter that is not in any way related to milk fever?—Subscriber, Roosevelt.

No. Do not do it. Air should only be used in cases of milk fever and then you should be very careful to sterilize it. Any dust or foul odors carried in with the air are likely to do more harm than the air can do good. For congested udder give plenty of salts to cool out the system and rub the udder and milk it out clean as often as you can.

A Mileage Harvest

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For Sale—80 acres 2 miles east of Earlimart in Tulare county. Domestic well is only improvement. Splendid soil in settled section. $90 an acre. W. F. Marks, 226 So. Main St., Los Angeles. Phone Main 1499.

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Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

For Sale—Relinquishments from $50 to $1,000, also well drilling rig for sale or lease. Proven water district, fine opportunity for contract water well work. A. C. Vestal, Wagner, California.

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Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

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Berry Plants—Strawberries, raspberries, blackberries, currants, gooseberries, dew berries and loganberries. Order now to assure delivery. Write M. J. Moniz, Berry Specialist, Sebastopol, California.

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For Sale—Everbearing Strawberry Plants—Progressive, $1.50 per hundred; Superb, $2.50 per hundred, postpaid. G. M Hawley. La Mesa, California.

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For Sale—Thoroughbred Rose Combed R. I. Red cockerels from prize winners of Kansas and Oklahoma. Mrs. C. E. Lineker, Palermo, California.

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"Eastman's Bred-to-Lay" Hoganized and trapnested Barred Plymouth Rocks. Fall Chicks — Eggs — Cockerels. Fairmead Poultry Farm, Fairmead, California.

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Send Your Order for Rock Red or Leghorn chicks to MADERA HATCHERY Madera, California

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Wanted: White Pekin Ducks. William Brunner, Holtville, California.

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Wanted—Salesmen and Agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1.00. W. Porter Barnes, Santa Rosa, California. Dept. A-11.

Wanted—Good business man, salesman, executive, to take charge of a department of a wholesale house machinery and engineering supplies in California. Applicant please give age, education, experience. Box 11, California Cultivator.

Wanted—Position on Ranch by experienced stock and grain man 40 years old, wife and two children, 5 and 10 years. Expect $100 and house first year. H. H. Wilson, 1714 Santa Maria Street, Los Angeles, California.

Wanted — A Nurseryman. One who thoroughly understands balling plants. Apply to: Coolidge Rare Plant Gardens, Pasadena, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted—A Ranch on Shares, either 50-50 or crop basis, or will manage same on salary. Experienced in rice, alfalfa, grain and hogs. Box 25, Cultivator.

Wanted—Milch Goat Stock. Also Summer and Winter Range for rent. PARADISE RANCHITA, Paradise, Butte County, California.

Wanted—A Car of Seed Barley. Imperial Valley Nursery & Seed House, El Centro, California.

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Farmers—Get the Genuine Sorghum Molasses, fresh, pure, at our mill. H. W. Hall, corner Philadelphia and Reservoir Streets, Pomona.

Boys You Can Make Money saving pumpkin seeds. Write for particulars. Bomberger Seed Co., Modesto.

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LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford. Box C, Butte City, Glenn County, California.

For Sale—One Standard Bred Jack or will exchange for span of young pure bred Percheron mares and pay difference. Will trade for cattle. Chas. Hubbard, Box 96, Riverdale, California.

For Sale—Big Handsome Jack, standard bred, 4½ years, valuable animal; price reasonable. Wm. A. Stocker, Route 4, Sebastopol, California.

Golden Glen Stock Farm registered Jerseys and Shropshires. Geo. W. Thomas & Sons, Riverside, California.

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Our Monthly Magazine on rabbit raising sent one year for 12 cents or names and addresses of five friends raising rabbits. SANDERSON, Eagle Rock, California, Dept. C.C.

Money in Rabbits—We are having a special sale of very fine bucks and does at reduced prices. Write us for particulars. H. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giants: Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giants, young stock. Paul Kruger, Watsonville, California.

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HOGS

Chester Whites—Billiken Type. Big winners at the State Fair. 15 extra spring boars sired by the Grand Champion and out of Billiken sired sows. A few spring sow pigs, same breeding. Three bred sows—two bred gilts. Billiken blood. Write for special catalogue and price list. C. B. Cunningham, Mills, California.

Chester Whites: Prize winning stock. Have one boar pig and one sow pig from my spring litter for sale. Prices reasonable. L. P. Dorsey, Jr., Applegate, California.

For Sale—Pure bred Chester White pigs, nine weeks old. Best of blood lines. Prices right. J. H. STONER, Babtiste, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Tamworth Hogs. Registered and true bacon type. C. E. MOYER. Hemet, California.

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

BUDDED AVOCADOS
MATHER'S AVOCADO NURSERY.
P. O. Box 585, Pasadena, California.

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

For Sale—3500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

FOR RENT

For Rent—450 acres grain and bean land near Inglewood; about one-third in beans last year, balance hay and grain. Most of the grain land is plowed and subsoiled for coming crop. Will rent on share basis to responsible tenant. Good barn and house, near schools, etc. See L. B. Joralmon,
THOMAS D. CAMPBELL & COMPANY, Washington Building, Third & Spring Sts. Los Angeles, California.

For Rent—Mountain ranch free for two years. Choice for hogs, goats, cattle. Never failing trout stream. Luckel, 719 Fay Building, Los Angeles.

TURKEYS

Turkey Eggs—Orders booked now and shipped in laying season. Bronze, also Mammoth Bronze. Robinson Turkey Ranch, San Dimas, California. Covina Phone 902

White Holland Turkeys—Young breeding stock. January and February hatch—chance to get a thoroughbred young Tom reasonable. A. P. Ward & Son, Calistoga.

MUSICAL INSTRUMENTS

PIANOS—PLAYER PIANOS
Paige Piano Co., 1600 Clay Street, Oakland, California.

GEESE

For Sale: Pure White pure bred Embden geese. Splendid stock. Gander shipped from Illinois. G. H. Waters, Lemon Grove, California.

POULTRY IN CITRUS ORCHARDS

Continued from Page 541

as the compacting of the soil about the trees and damage to the lower foliage. Moreover, confinement to pens with cement floors would obviate the necessity of having well drained sandy soils for the location of the poultry yards, a necessity learned in past experience in Southern California.

Instead of hatching chicks or buying them, on a ten acre unit with only half a man's time, it would probably be best to purchase annually 500 pullets per ten acre block, culling down the flock to the required number and selling off those culled out.

In the case of larger acreages where several one man units are installed the possibility exists that it might be found advisable to raise some one of the larger general utility breeds rather than strains for egg purposes alone, hatching or buying chicks and selling broilers and fryers. Los Angeles should furnish a most excellent market for such fowls as well as for capons, which in many places have become a profitable side line for the man who is willing to go after a select trade.

The writer realizes as well as anyone that there are certain prejudices and difficulties to be overcome in making the combination of poultry with citrus orcharding above suggested. Nevertheless, it is felt that the drawbacks to such a combination are of more or less minor importance as compared to the magnitude of the problem confronting citrus growers, and such as can readily be obviated. The problem of maintaining the fertility of our orchard soils is a serious one at present and destined to become increasingly difficult. The suggestion made has been given in the hope that it may prove at least a partial solution of this problem.

Poultry Queries

Conducted by J. A. Koethen

Feed for Two Months Chicks

Could you publish a feeding formula for chicks two months old? I have fed Egyptian corn and some blood meal but I think this is not what they want; they look for something else.—Subscriber, Ripon.

At the Davis farm chicks two months old have before them at all times a dry mash consisting of two parts bran, two parts shorts, one part corn meal or barley meal, two parts beef scrap, one part bone meal and three parts charcoal by weight. Any good grain mixture may be used with this for scratch feed. Probably the best would be whole wheat and cracked corn with sprouted oats at noon. Either milo or Egyptian corn may be substituted for Indian corn, or may be used exclusively if a good balanced mash is fed. If the mash is moistened once a day with sour milk more rapid growth will result. At the Iowa station after the eighth week chicks receive a mash consisting of three parts corn meal, two parts shorts, one part bran, one part beef scrap, one part ground oats, one part ground bone. The scratch feed consists of two parts cracked corn, one part wheat, one part oats. Oats here in California are so light that they are best sprouted or ground.

SUGGESTIONS TO THE RABBIT RAISER

A rabbitry should be built to allow the entrance of plenty of sunlight and provision made for an abundance of ventilation in such a way as to prevent a direct draft on the animals. Hutches should be airy and crowding of animals avoided. If possible, windows should be screened to exclude flies in summer.

The droppings of rabbits are normally round. Should they become soft and adhere, forming a mass, the animal is probably getting too much green or other loosening food and the diet should be corrected. Rabbits two months old or older, kept in capacious runs, may be fed green food almost exclusively during the summer without exhibiting such an abnormal condition. Rabbits, particularly adults, should not be overfed. Stock which is always a little hungry is in better shape physically than overfed animals. Nursing does, however, should receive an abundance of milk producing food. Avoid any sudden or radical change of food such as a transfer from hay and grain to a diet of green food. Such changes should be gradual. The same recommendation applies to sudden changes of temperature. It would be dangerous in a cold climate to transfer in winter, an animal from a heated room to an outside hutch or room, and the opposite change from cold to warm might also causes ill effects. Individuals, however, differ in susceptibility.

While rabbits respond to intelligent care, the raiser should not coddle his stock. The keeper of hares will be frequently surprised at the result attained by turning a sick rabbit out on grass where plenty of fresh air, sunshine and exercise are available. Many an animal affected with snuffles or other ailment apparently recovers entirely under conditions approaching approximately those of the life of the wild rabbit.

A rabbit raiser should purchase a good manual on rabbit culture and should subscribe to a periodical containing new matter on the subject.

Sudden noises or motions alarm rabbits. Since their well being depends on an undisturbed condition of life, do not enter the rabbitry noisily or allow others to do so.

Prevent young rabbits from stepping into their water dishes, and always provide shelter from rain.

Frequent and gentle handling of youngsters does away with their natural timidity.

These conditions should be constantly in mind: dry, clean, airy hutches or pens; good ventilation; sunshine where possible; no direct drafts on the animals.

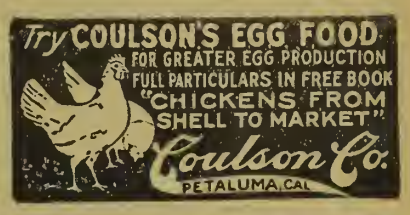
Rev. U. Okumura, a prominent Japanese clergyman, speaking at Honolulu recently said that in 14 years the Japanese would control the Hawaiian Islands.

For Sick Chickens

Preventive and curative of colds, roup, canker, swelled head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Galien, Mich., says: "Have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Vickerman, Rockdale, N. Y., says: "Have used Germozone 12 years; the best for bowel troubles I ever found." Frank Sinks, Chicago, Ill., writes: "I have lost but 1 pigeon and no chickens in the 3 yrs. I have been using Germozone." C. O. Petrain, Moline, Ill.: "I never had a sick chick all last season." Bernard Horning, Kirksville, Mo., says: "Cured my purest chicks this spring." Ralph Wurst, Erie, Pa., says: "Not a case of white diarrhoea in 3 yrs. I raise over a thousand a year." Good also for rabbits, birds, pet stock.

GERMOZONE is sold generally at drug and seed stores. Don't risk a substitute. We mail from Omaha postpaid in new 25c, 75c and $1.50 sizes. Poultry books free.

GEO. H. LEE CO., Dept. 418 OMAHA, NEB.



"I was away for several days-and found, on my return that the machines were regulated within a fraction of a degree"

—says P. R. Lyding, of Sebastopol—a poultry raiser with 26 years' experience. The machines that kept temperature so remarkably were equipped with Charters' Regulators. And the Charters' Regulator is an important—but not the only feature of

CHARTERS INCUBATOR

The incubator is of particularly substantial build—540 egg capacity—a special ventilation and moisture retention system—hollow cylinder boiler that gives the greatest heating surface, insuring active circulation in the coils. The boiler has removable bottom—which allows easy cleaning. Every detail of construction has been made as nearly as possible perfect. And to add to this—the Charters' Incubator has the Charters' Regulator built in—the only incubator so equipped in its manufacture.

With reference to the Regulator—It's the two thermostats that do the trick, one outside and one in the egg chamber: by actually anticipating any change of temperature—and automatically adjusting the flame to meet the new conditions. The temperature outside may vary as much as 70 degrees, without producing as much as half a degree of change in the egg chamber. Charters' Regulator is entirely unlike the "sleeve" type—which has proven unsuccessful.

And the big tank—holds a supply of fuel that will run the lamp from two to three weeks without refilling. That means one refilling and trimming only each week.

H. L. Brown of Ceres, Cal.—G. L. Hawley of Madera, Cal.—Enoch Crews of Seabright—are among the users of Charters' Incubator—and these and many others report enthusiastically on the satisfaction they give.

It has done wonders in the saving of time, money and worry for others—it will do the same for you. If it does not—your money back. That's fair enough—isn't it?

Write today for our catalog—or better still send in your order now—for a Regulator, or the fully equipped Incubator—so we can deliver in time for your fall hatch. The Incubator, equipped with Regulator is $65. The Regulator is $10.

See The Charters at principal fairs and poultry shows this year.

CHARTERS MANUFACTURING CO.
334 Soquel Avenue, Santa Cruz, California

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READY ROOFINGS

Built-in Quality

The only way to know the quality of ready roofing is to put it on your house, barn, or other building and wait for two or three years. You can't tell the good from the poor merely by looking at it or feeling of it. It is the hidden qualities that count. Ready roofing must be carefully made from the best materials if it is to stand the test of time and weather.

Ru-ber-oid and Malthoid have attained their position as the standards of ready roofing because quality has been built into them. With our complete organization, we scour the world for the best materials. We make our own felt from carefully selected rags. We maintain our own refineries in order to get the highest grade of asphalt and similar products. The manufacture of Ru-ber-oid and Malthoid is carried on from beginning to end within the one organization.

No effort or cost is spared in manufacturing Ru-ber-oid and Malthoid. Experts constantly supervise every process. Tests are made continually to see that all material is kept up to the high standard which has been set.

As a result, Ru-ber-oid and Malthoid have those hidden qualities which give them an exceptionally long life. They will not dry out or rot. They are the best quality roofings that can be made. If painted regularly, they will last for years.

When you think of building, remember Ru-ber-oid and Malthoid.

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PABCO PRODUCTS

Roofings, Felts
Building Papers
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EACH THE STANDARD OF ITS KIND

California Cultivator
Costs Only $1.00 Yearly

Wanted---Better Sires

By Jean A. Koethen.

BEGINNING the first of October the department of agriculture is organizing a drive for better sires for all kinds of live stock and poultry. Just what is to be included in the drive I have not learned, but the movement is a timely one, and for two reasons: First, because improvement is needed, and not only needed but demanded by the times in which we live; second, because the cheapest and quickest way of improving stock is through the use of pure bred sires.

No argument is required to prove that, in spite of all our boasted advancement in poultry methods during the last 20 years, we are still a long way behind the ideal in egg production. When the Missouri station admits that its average production is only 130 eggs and no station claims an average of over 150, so far as I know, while the average of farm flocks is undoubtedly far below this mark, it is high time to seriously consider how the average is to be raised. Culling out the poor layers is a great factor in the maintenance of higher averages, but we must do more—we must increase the average of the best.

Nor is improvement in egg production sufficient. We want more eggs, but we also want more meat. We want more birds of the strictly meat type, and we want more chicks with strength enough to live in spite of the odds against them, chicks whose lives are not snuffed out by the first breath of air. We want hens that do not develop roup with the first rain in the fall, and pullets that will fight for their living against any comer. Last, but not least, we want better looking flocks—flocks that any man or woman can be proud of. What is the solution of all these wants? Better sires.

Principles of Inheritance

Professor Pearl of the Maine station, after making a careful study of the Mendelian principles, correlated them with the results of years of observation and investigation at the station and laid down these three principles for the inheritance of fecundity:

High fecundity may be inherited by daughters from their sires, independent of the dam. This is proved by the numerous cases where the same proportion of daughters of high fecundity are produced by the same sire whether he is mated with dams of low or high fecundity.

High fecundity is not inherited by daughters from their dams. This is proved by a number of distinct and independent lines of evidence, of which the most important are: Continued selection of highly fecund dams does not alter in any way the mean egg production of the daughters; the proportion of highly fecund daughters is the same whether the dam is of high or low fecundity, provided both are mated to the same male; the daughters of a highly fecund dam may show either high fecundity or low fecundity, depending upon their sire; the proportion of daughters of low fecundity is the same whether the dam is of high or low fecundity, provided both are mated to the same male.

A low degree of fecundity may be inherited by the daughters from either sire or dam, or both.

Professor Pearl came to these conclusions after seven or eight years of breeding from high producing females without raising the average of production in the flock. In short, as long as he considered only the mothers, he got nowhere at all; it was only when a male was used that was of a high producing strain that production was improved.

Long before any one discovered that fecundity was a sex-limited character (i. e., transmitted through the male), poultrymen had known that color and to some extent size come from the male. Mate a pure-bred Barred Rock male to a lot of mongrel hens, and you will find a large proportion of the progeny more or less like the sire in appearance. It was by following this principle of breeding that the farmers of Rhode Island 50 years ago built up one of the most prolific and vigorous of breeds. Sea captains from New England ports as they returned after long voyages brought back red roosters, mostly of what was known as the Red Malay variety. These roosters were eagerly purchased by the farmers and mated to their mongrel flocks, which gradually took on a brighter hue, till, lo and behold, in time they were all Reds. This is just a concrete example of what may be done by persistently using pure bred males. I suppose any farmer in California, no matter how mixed and disreputable his flock, might in time make it for all practical purposes pure bred by using year after year the best male he could afford, of whatever breed he preferred.

The First Step

A word of warning may be necessary at this point. Let no one think that because he has improved his flock somewhat by the use of a pure bred male or even of a male of high producing pedigree, he has gotten hold of even the fringe of a system of breeding. To quote again from Professor Pearl:

"'Selection' to the breeder means really a sytem of breeding. 'Like produces like' and 'Breed the best to get the best'—these epitomize the selection doctrine of breeding. It is the simplest system conceivable, but its success as a system depends upon the

The Pride of Petaluma

KRESKY'S 1920 VENTILATING brooder stove forces proper ventilation in spite of the operator and sweeps the room with FRESH AIR. PETALUMA'S latest sensation and result getter. TRY it. Keep it if you like it, or send it back if you do not.

Catalogue No. 3, free for asking.

KRESKY BROODER STOVE CO.
Petaluma Cal.

existence of an equal simplicity in the phenomena of inheritance. If the mating of two animals somatically a little larger than the average always got offspring somatically a little larger than the average, breeding would certainly offer the royal road to riches. But if, as a matter of fact, as in the present case, a character is not inherited in accordance with this beautifully simple scheme, but instead is inherited in accordance with an absolutely different plan, which is of such a nature that the application of the simple selection system of breeding could not possibly have any direct effect, it would seem idle to continue to insist that the prolonged application of that system is bound to result in improvement.

"It seems to me that it must be recognized frankly that whether or not continued selection of somatic variations can be expected to produce an effect on the race depends entirely on the mode of inheritance of the character selected. In other words, any systematic plan for the improvement of the race by breeding must be based and operated on a knowledge of the gametic condition and behavior of the character in which improvement is sought."

In other words, while the use of a better sire will no doubt greatly improve the character of the flock, it will not develop a high laying strain or an exhibition strain. Anything worth while in breeding must be sought by the most careful work with individuals. The result of every mating must be recorded. Suppose, for instance, a pure-bred male, A, is mated to five females, B, C, D, E and F. B may never lay an egg that hatches; the chicks from C's eggs may be too weak to grow into anything but runts; D's eggs may produce all males; E's eggs may produce heavy-laying pullets, and F's show birds. The only way to learn the capability of each hen and the value of the mating is to hatch her eggs alone and see what they contain. This article of Professor Pearl's was written seven years ago, and little progress, if any, has been made since. We are still forced to try out individual matings in order to find the one that produces the chicks we want. Slow work, yes, but all worth while work is slow. Meanwhile let us begin by buying better sires, only let us not stop there. Let us pedigree breed from these better sires and learn what matings bring the best results.

THE RIVERSIDE SHOW

By Jean A. Koethen

While the poultry show at Riverside in connection with the Southern California Fair was a disappointment to the management in point of size, some fine birds were shown, and the interest was considerable, as it always is. A poor hatching season and slowness of both molters and young stock to put on their new plumage were the reasons given for the comparatively small number of entries, only about 400 birds all told. "War rations have not been good for feathers," said Manager Harry Suits. "Some flocks have not molted well and all are slow." Doubtless the later shows will see many entries that were not ready for Riverside.

Turkeys and Waterfowl Lead

Whatever the causes may have been which prevented the entry of full classes of chickens, they did not keep turkeys and ducks and geese from attending in force. There were 25 Bronze turkeys, many of them very handsome specimens, and 16 White Hollands of unusual excellence, the largest number of this variety I remember seeing at any show. There were Rouen ducks, enjoying themselves in an artistically arranged pond in the middle of the main building; several White Pekins, and nearly a dozen Muscovies. Attracting even more attention because of their comparative rarity were 14 splendid Toulouse geese, somewhat disturbed by the noise around them, but still bearing themselves like the lordly creatures they are.

Red Alley Longest

Rhode Island Reds seldom fail to lead the show in numbers, and this show was no exception. The best bird in the show was a Red, and color and type of all the birds shown were fully up to the standard Red breeders have set for themselves. Next to Reds in point of numbers were the Anconas, and White Leghorns came third on the list. These three varieties made up fully half the show.

A White Show

While the number of Reds was greater than that of any other breed, it would not be straining the truth to call this a White Show, because of the unusual predominance of white birds, both in number and quality. There were the White Leghorns which have already been mentioned, 45 of them, and many very handsome birds among them, 30 White Wyandottes of exceptional quality, 29 White Rocks—an unusual showing for this variety—10 Rhode Island Whites, 15 Light Brahmas, which are so nearly white that they deserve a place with the white birds, and four Faverolles, lovely, fluffy biddies which are only occasionally seen in our local shows.

Cornish was a very small class, only one pen being shown, and there was only one exhibitor of Barred Rocks though he brought a fine string. There was a sprinkling of Brown Leghorns, Black Minorcas, Golden Gates, Silver and Partridge Wyandottes and a half a dozen varieties of bantams. Orpingtons, Andalusians, Langshans and a good many sub-varieties of the Leghorn and American breeds were conspicuous for their absence.

EGG LAYING CONTEST AT SANTA CRUZ

The egg laying contest at Santa Cruz will be continued another year. It is under the management of the Santa Cruz farm bureau, but is open to entries from any poultryman in the state. The contest starts November 1.

DOES SHE PAY?

How many cows in your herd are returning a fair profit for the feed consumed and how many are returning little or nothing or even costing money to keep? The profit made from a cow depends upon the amount of butterfat produced and the cost of producing same. Monthly records and the Babcock test will detect the boarder cows. Why waste time and money on cows that do not pay for their keep?

QUITE LIKELY

"But suppose," said one of the spectators on the common, "that the parachute should fail to open after you had jumped off—what then?"

"That wouldn't stop me,' answered the parachutist. "I'd come right down."—Boston Transcript.

TOUGH BIRD

Sam Darktown: "Dat turkey we had fo dinnah wuz hatched by an incubatah all right, Mose."

Mose Yellerby: "How does yo' know?"

Sam Darktown: "No turkey dat ebah knowed a mothah's care would 'a' turned out as tough as dat one wuz."

REMEMBER, going through the moult is like going through a long spell of sickness. To force out the old quills and grow new feathers saps a hen's vitality.

If you expect your hens to be fall producers and winter layers, then feed them Poultry Pan-a-ce-a during and after the moult.

Dr. Hess Poultry Pan-a-ce-a

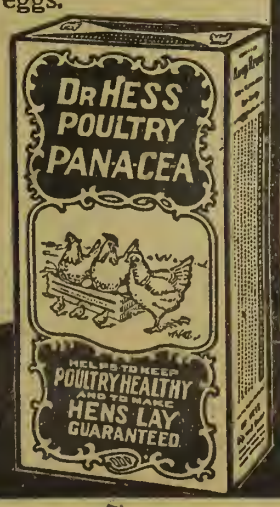
will start your pullets and moulted hens to laying

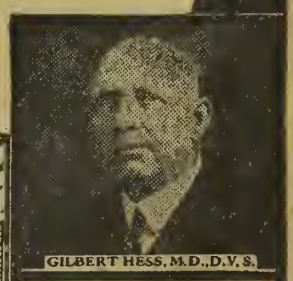
It contains Tonics that put your moulted hens in fine condition—Tonics that tone up the dormant egg organs—Iron that gives a moulted, run-down hen rich, red blood and a red comb. It contains internal antiseptics that destroy disease germs that may be lurking in the system. No disease where Pan-a-ce-a is fed.

It brings back the singing—it brings back the scratching—it brings back the cackle. That's when you get eggs; and it's eggs you want—fall eggs, winter eggs—when eggs are eggs.

Feed Pan-a-ce-a to all your poultry to make and keep them healthy. The dealer refunds your money if it does not do as claimed. Tell the dealer how many fowls you have and he will tell you what sized package to buy. Always buy Pan-a-ce-a according to the size of your flock. 30c, 60c, and $1.25 packages. 25-lb. pail, $3.50; 100-lb. drum, $12.00. Except in Canada.

DR. HESS & CLARK
Ashland, Ohio





GILBERT HESS, M.D., D.V.S.

DR. HESS STOCK TONIC
keeps hogs healthy, drives out worms

Dr. Hess Instant Louse Killer Kills Lice

Los Angeles Markets

Los Angeles, October 22, 1919.

BUTTER

Butter, creamery extras. Produce Exchange price 65 lb.

Dairy Exchange prices last week on extras:

Oct.	15	16	17	18	20	21
'19 ...	64	64	64	64	65	65

CHEESE

Brokers' prices:

California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 73 dozen; case count, Produce Exchange closing price 67 dozen; pullets, Produce Exchange closing price, 58 dozen. Pewee pullets, 48.

Dairy Exchange prices last week on extras:

Oct.	15	16	17	18	20	21
'19 ...	72	72	72	72	73	73

POULTRY

Prices to producers: Hens, lt. 32; heavy, 32@33; colored over 4 lbs., 36; broilers, 39; fryers, 28; roasters, 28; old roosters, 19; capons, 42; ducks, old, 23; ducklings, 27; ducklings, Pekins, 3½ up, 29; geese, 25; turkeys, 35@42; squabs, 45@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 16.50; 150 to 225 lbs., 16.00.

Cattle (on foot, gross weight): Steers, good, 11.50@12.00; medium, 10.50@11.50; heifers, good, 9.50@10.00; fair, 9.00@9.50; cows, fair to good, 8.50@9.00; bulls and stags, 7.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock October 21, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement good, market firm. New stock, Stockton; Burbank, best 2.90@3.15; others 2.50@2.60 per cwt.; Russets, 2.80@2.90 per cwt. Local: Lug boxes, 1.00@1.15.

Carlot Sales: Closing prices Monday, Stockton: Burbanks, sacked per 100 lbs., fancy 2.50@2.65, mostly 2.60@2.65; choice, mostly 2.25@2.40. Idaho: Russets, sacked per 100 lbs., fancy mostly 2.50. (Sales to 5 p. m. yesterday.)

Sweet Potatoes: 70@80 per lug; 2½@2¾ per lb.

Carloads, f. o. b. usual terms, 2.25@2.50 per cwt., mostly 2.25.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes 95@1.00 per lug box; 3:25@3.50 cwt. Yellow varieties, 3.40@3.50 per cwt; lug boxes 95@1.00.

White Globe, cwt. sack, 2.75. Yellow, 2.50@3.00; Brown, 3.00@3.25.

Garlic: Local, per sack lots, 30.

VEGETABLES

These are the actual prics obtained October 21, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 8@10; Limas, 8@10; fancy shipping, 10.

Cabbage, lb., 1¾; crate, 1.00@1.50; ton, Winningstadt, Cannonball, 26.00@28.00.

Carrots, doz., 35@40; lb., 3.

Cauliflower: Local, per doz., 1.25@1.35; field crates, 2.00@2.75.

Carloads f. o. b. usual terms; Snowball, 1.40@1.50 crate.

Cucumbers: Local stock, lug boxes 65@70. Shipping stock, lug, 1.00@1.10. ping stock 85@1.00.

Celery: Local stock 1.10@1.35 per dozen bunches. Crates, 4.00@4.50; fancy shipping stock, 4.75@5.25.

Carloads f. o. b. usual terms; crate Golden Heart 4.50@4.75, crate included.

Corn: Roasting ears, lug of 3 dozen, 80@1.00.

Eggplant, best, lb., 3@4.

Peppers: Bell, 60@75 per lug box; others, 50@60; Chillis, best, 45@50; per lb., 4½@5. Shipping stock, high as 1.00 per lug.

Lettuce, local, cr., 1.35@1.50; shipping, 1.50@1.75.

Carloads f. o. b. usual terms; cr. Los Angeles or New York (Iceberg), 1.75@2.00.

Peas, local, lb., 10@12; best, 13@15.

Rhuharb: Local, box, 1.00@1.25.

Squash: Summer, lug, 80@1.10; others, 60@70.

Spinach, doz., 30@40.

Tomatoes: Lug boxes, ripe stock, best 80@90; others 65@70. Shipping stock, 90@1.25.

Carloads f. o. b. usual terms: Lug boxes, Stones, wrapped pinks and greens, in straight cars 1.20@1.25; In mixed cars, 1.25@1.35.

Turnips, doz., 45@50; others, 30@35.

FRUITS

These are the actual prices obtained October 21, hy Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms; Cash on the walk.

Apples, California: Bellefleurs, 4 tier 1.65@1.75; 3½-4½ tiers mostly 1.60@1.65; few $1.50. Local: Jonathans, scarce, packed, mostly 2.75; loose, 6@6½ per lb.; Delicious, 3.50; loose, 5@6 per lb. Northern: Jonathans, extra fancy, 3.25@3.40; fancy, 2.75@3.00; loose, 7 per lb.; locally packed, 3.00@3.25. Idaho: Jonathans, loose, 6½ per lb.; packed, fancy, 2.90@3.00; extra fancy, 3.25@3.35.

Bananas, 8¼@8½.

Cantaloupes: Quality and condition generally good. San Fernando local Honey Dews, 90@1.00; Paul Rose, pack standard, 1.50@1.80; best, 2.00@2.50.

Cranberries: Barrels, 13.25@13.50; boxes, mostly 4.00; 14 lh.

Grapes: Demand and movement light, market slightly stronger. Local and Northern stock: Per lb.: Tokays, 6@7½; Muscats, 4½@7; Malagas, 6@7; Concords, loose lugs, 9@10; Black Cornichons, mostly 6@7; Black Morocco, 5@6½; Rose of Peru, 5@6.

Nectarines, lb., best 6@7; others, 5@6.

Peaches: Demand and movement slow. Local, various varieties, 6@8 lb.; others, 4@5; lug boxes, best, 1.75@2.25; others, 1.00@1.50.

Pears: Northern Bartletts, No. 1, 7@9; No. 2's, 5@6 per lb.; lug boxes, 2.00@2.50; [illegible] packed boxes, 3.25@3.50.

Persimmons, lb., 12.

Pomegranates, lb., 7@8½.

Quinces: Local lug, 1.00@1.25; lb., 5.

Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1, small ½ lb.

Lemons: Valley stock: Fancy, packed, 6.50@6.75; loose, 5.50@5.75; local: packed, 3.50@4.00; best, 4.00@5.00; loose, 3.25@3.75. 4.75@5.50; best brands, 5.25@5.75; local

Oranges: Valencias, medium fancy, 4.75@5.00; best brands, 5.75@6.00; local pack, 2.50@3.00.

Grapefruit: Local stock, mostly 5.00@6.00; fancy, 64's-80's mostly 6.00@6.50; 46's and 96's, 4.50@5.00; choice, 2.50 up.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.
No. 2, 26.
Diamond Brand Buds, 34.
Golden State Buds, 34.
1918 No. 1 price was 28; fancy hudded, 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14½; baby, 13.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	21.00@24.00
Barley	17.00@22.00
Alfalfa	20.00@25.00
Fertilizer Bean Straw	9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, September 24:

Oats Red, Rustproof, 2.85.
Eastern Milo, 2.40@2.55.
Barley, 3.05@3.06¼.
Corn, 2.90@3.02½.
Egyptian, 3.26¼.
Kafir, Eastern, 2.70.
Feterita, 3.15.
Alfalfa molasses, 30.00.
Alfalfa meal, 30.00.
Cracked wheat, 3.60 per cwt.
Wheat, field run, price to retailers per cwt., 4.00; recleaned, 4.75 f. o. b. cars U. S. Grain Corp. Sonora, 2.20 per bu.

San Francisco Markets

San Francisco, October 21, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	.66
Firsts	Nominal

Prices extras last week and year ago:

Oct.	14	15	16	17	18	20
'19 ...	66½	65½	66	66	66	66
'18 ...	62½	62½	..	62½	62½	..

Rcts., wk. ending Oct. 20, 3,003 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	.35
Ore. Triplets	.33
Jack, full cream	.33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	.78½
Dirty	.72
Extras Pullets	.61
Undersized	.56½

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago:

Oct.	14	15	16	17	18	20
'19 ...	75	76½	77	77	77½	78½
'18 ...	72½	72½	..	74½	76½	..

Rcts. wk. ending Oct. 20, 187,076 dozen.

POULTRY

Hens, W. Leghorns, 32@33; colored, 35@36; roosters, young, 34@35; old, 20@22; broilers, 35@38; fryers, 33@34; squabs, cr turkeys, 38@43; turkeys, old, 38@40. 2.50@4.00 dozen; ducks, Indian Runner, 1.50@3.50 dozen.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1000 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5.

Calves: Light weight, 12@12½; medium, 11@11½; heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 8½@9; ewes, 6½@7.

Hogs: Hard, grain fed, 100 to 150 lbs., 13; do, 150 to 225 lbs., 13½; do, 225 to 300 lbs., 13; 300 to 400 lbs., 12.

Moran @ Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle—Good grass steers, 1000 to 1200 lbs. and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs—Top packer hogs, hard and well finished, 175 to 250 lbs., 14; 150 to 175 lbs., 13½; 250 to 300 lbs., 13½; over 300 pounds, 12½; under 150 lbs., 12½. Usual dock and price discount for other weights and kinds.

POTATOES

Potatoes: Per 100 lbs., Rivers, fancy, 2.00@2.25; choice, 2.25@2.35; sweets, 3½@4 lb.

ONIONS

Onions: Brown, fancy, 2.75@3.00; choice, 2.50; Yellow, 2.60; Whites, 2.50; Garlic, 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 7@10.

Carrots, per sack, 1.00@1.25; long, doz. 40@45.

Cauliflower, 80@85.

Cabbage, doz., 40@55.

Celery, doz., 35@40.

Cucumbers: Per box, 1.00@1.25.

Corn, sack, 2.00@2.25.

Eggplant, southern, fancy, doz., 25@35.

Lettuce, dozen, 25@35.

Peppers, Bell, lb., 85@1.00; Chili 75.

Peas, lb., 5@6½.

Pumpkins, per sack, 1.25.

Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 85@1.00, Bay, 60@1.00.

Squash: Summer, cr., 1.25@1.50.

Spinach, lb., 2@3.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 7.00@7.50; choice, 6.00@6.50; standards, 4.00@4.50; lemonettes, 4.00@4.50; grapefruit, fancy, 5.50@6.50; choice, 4.00@5.00; oranges, fancy, 5.25@5.75; choice, 4.25@4.75.

FRESH FRUITS

Wholesale selling price:

Apples: Greenings, 1.50@1.75; Bellflowers, 1.50@1.75; Winter Bananas, 2.50@2.75; Newtown Pippins, 2.00@2.25; Jonathans, 2.00@2.25.

Avocados, doz., 5.00@7.00.

Bananas, 8@8½.

Blackberries: So., 13.00@14.00.

Cantaloupes: Per crate, 1.50@1.75; pony crate, 1.25; Casabas, doz., 50@75.

Crandberries, 4.50@5.00 per standard box; barrel, 13.50.

Figs, double layers: 1.00@1.25 box.

Grapes: Thompson Seedless, 1.50@2.00 per box; Malaga, 1.25@1.75, Los Angeles lug; Fontainbleus, 75@1.00 per crate; Rose Peru, 75@1.00; Muscats, 1.25@1.75; Tokays, 1.25@1.75.

Huckleberries, lb., 14@15.

Peaches: Sacramento, 85@1.25 per

Peaches: Sacramento 1.25@1.50 per crate; 75@1.50 per box; Cling, 1.00@1.50 per box.

Pears: Box, 1.50@2.50.

Persimmons, bx., 1.50@1.75.

Plums: Cherry, 85@1.00, Clyman, 1.00@1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00@1.25.

Prunes: Fancy American blues, 2.50@3.00; choice, 1.00@1.80; according to size and weight.

Pineapples, doz., 4.00@5.00.

Pomegranates, 1.00@2.00 box.

Quinces, bx., 1.00@1.25.

Raspberries: Ch., 12.00@14.00.

Strawberries: Ch., 15.00@18.00.

Watermelons: Watsons, lb., 1.

HONEY

Jobbing prices: Extracted, Water White, 20@22 per lb.; Light Amber, 15@17; Amber, 13@14.

BEANS, PEAS

Beans: Per cental: Small White, 8.00@8.20; Large White, 7.00@7.25; Lima, 12.50@13.00; Pink, 7.00@7.25; Cranberry, 7.00@7.25; Blackeye, 6.00@6.50; California Bayos, 6.75@7.00; Mexican Red, 6.00@6.50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 6.25@6.50, in bond.

Dried Peas: Old crop, green, lb., 7½@7¾.

HOPS

1919 contracts per lb. around 60@70.

RICE

Prices per 100 lb. bag:

California: Fy., 10.50; ch., 10.25; flour, 5.25.

DRIED FRUITS

Prunes:

Prune prices announced by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On smallsized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.

Peaches:

Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾c; Muirs, 15c.
Choice yellows, 15½c; Muirs, 15½c.
Fancy yellows, 16½c; Muirs, 17½c.
Extra fancy yellows, 17¾c; Muirs, 18¾c.
Slabs, yellows, 14½c.

For "practically peeled" add 1½c per pound (any grade).

Prices above are all bulk basis.

For packing in 50-pound or 25 kilo boxes add 1 cent per pound.

25-pound or 12½ kilo boxes, add 1¼c per pound.

10-pound boxes, add 2c per pound.

Blue ribbon peaches packed 2-pound carons, 12 per case, $10 per case.

Blue ribbon peaches packed 2-pound cartons, 24 per case, $10 per case.

Bakers' special, "practically peeled," 16¾c per pound, bulk basis.

Apples:

Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; Fancy (in 50s), 23@23½.

Figs:

White: Cooking (in 50s), 15@16; choice (in 50s) 17@18, extra choice (in 50s) 19@20, fancy (in 50s) 21@22, extra fancy (in 50s) 23@24, Bricks, 12 No. 10s, 1.60@1.67½; bricks, 24 No. 8s 2.55@2.65, bricks 50 No. 6s 4.00@4.15, bricks, 70 No. 4s 4.20@4.35, layers, No. 10 2.50@2.80. Calimyrna: Cooking (in 50s) 19, choice (in 50s) 23, extra choice (in 50s) 24, fancy (in 50s) 26, extra fancy (in 50s) 27½, bricks, 10 1-lb. 2.75, layers, No. 10 2.95@3.20. Black: Standard 14, choice 17@18, extra choice 18@19, fancy 19@20.

Pears:

Standard 20, choice 22½, extra choice 24, fancy 26@27.

Raisins:

California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package 15, fancy, 16s, package 15, fancy, 12s, package 11¾, choice, 16s, package 14½, choice, 12s, package 11⅜, bulk, fancy in 25s 14¼, bulk, bakers, in 25s, 13½, bulk, Malagas and Feherzagos, in 25s 13. Loose Muscatels: 4-crown, in 25s 14¼, 3-crown, in 25s 13¾, 2-crown, in 25s, 13¼, 1-crown, recleaned, in 25s 14. Seedless: Thompsons, 16s 15½, Thompsons, 12s 12⅛, Thompsons, bulk, recleaned, in 25s 14½, Thompsons, bulk, bakers, in 25s 15½. Bleached Thompsons: Choice, in 25s, sulfur 18, Fancy, in 25s, sulfur 18½, Extra Fancy, in 25s, sulfur 21, soda dipped, in 25s 17¾, oil dipped, in 25s 17¾. Sultanas, 16s 15¼. Sultanas, bulk, in 25s 14¼. Layers: 6-crown, flat pack, 20s, per box 4.05, 6-crown, flat, 10s, per box 2.20, 6-crown, flat pack, 5s, per box 1.20, 4-crown, flat pack, 20s, per box 3.20, 4-crown, flat pack, 10s, per box 1.75, 4-crown, flat pack, 5s, per box 1.00, 3-crown, tray pack, 20s, per box 3.10, 3-crown, flat pack, 20s, per box 2.95, 3-crown, flat pack, 10s, per box 1.60, 3-crown, flat pack, 5s, per box 95, clusters, 20-1s, cartons 3.45, clusters, 12-2s, cartons 3.80, clusters, 4-5s, cartons 4.50, vineyard run, 100s 13.00.

ALMONDS

California Almond Growers Exchange opening prices:

Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½. Drake @23½.

GRAIN AND FEEDS

Oats: Red feed, 2.85@2.95; black, 3.00@3.10 per cental.

Corn: California yellow, 3.50@3.60 cwt.; Egyptian, 3.15@3.25; Milo Maize, 3.07½@3.15.

Rye, 3.25@3.35.

Barley, feed, 2.95@3.00; brewing, 3.15@3.20.

Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles Terminals:

	Per Bushel	Per Cental
Hard Wheat—		
No. 1	2.20	3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 1-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.09	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Mill Feed (per ton): Bran, 43.00@44.00; mill run, 42.00@43.00; Rolled Barley, 52.00@54.00. Linseed oil cake meal, nominal: cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of October 18 Scott-Magner & Miller says:

Receipts past week 1913 tons. Practically all by water. This week will probably clear up most of the hay around the Bay districts. Difficulty in obtaining shipments, together with the fact that most all hay from now on will have to be withdrawn from the warehouses, has caused the market to be somewhat firmer as all hay withdrawn from warehouses must take on the season's storage together with other expenses and the market will without doubt advance at least sufficient to cover same. Export trade continues about the same, with shipments somewhat light owing to the difficulty of effecting shipments on account of the stevedores' strike. Light inquiry for alfalfa. Straw is in heavy supply with a very limited demand.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the Hay Market—for prices to consumer, charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay

Fancy Wheat hay (light 5-wire bales)	19.50@21.00
No. 1 Wheat or Wheat and Oat hay	17.00@20.00
No. 2 Wheat or Wheat and Oat hay	14.00@17.00
Choice Tame Oat hay	17.00@20.00
Other Tame Oat hay	14.00@17.00
Wild Oat hay	12.00@16.00
Barley hay	14.00@18.00
Alfalfa hay	17.00@22.00
Stock hay	10.00@14.00
No. 1 Barley straw, bale	50@80

Citrus Markets

Los Angeles, October 22. 1919.

Valencias of all grades except the very poorest are meeting good demand in all Eastern markets. Some 3,000 cars are yet to go from California packing houses. Car shortage makes it impossible for Valencias to be forwarded as quickly as shippers wish. Heavy movement of Florida fruit will begin next month. Porto Rico orangcs are being received in heavier amounts than was expected. Wild oranges sold in New York from 2.40-3.30.

Lemons have run over the $10 mark in New York. Prices are good in all markets.

Shipments

Shipments of oranges from Southern California to date since November 1, 1918: 34,354 cars, lemons 9,521, total 43,875. To same date last season: oranges 14,267, lemons 5,907, total 20,174. Central California this season: Oranges 4,427, lemons 354, total 4,781. To same date last season: oranges, 2,539, lemons 115, total 2,654. Northern California: oranges, 244 lemons 2, total 246. Last year same date: oranges, 203.

AT THE AUCTIONS

October 15

New York: 10 Val., 1 lem. Val., 3.15@8.30; lem., 5.75@8.15.
Boston: 7 or., 2 lem. Val., 4.45@6.35; lem., 6.55@8.30.
Philadelphia: 4 or., 4.26@8.00.
Cleveland: 3 or., 1 lem. Val., 5.20@6.95; lem., 6.25@9.55.
Pittsburg: 2 or., 1 lem. Val., 5.65@8.65; lem., 4.20@8.65.
St. Louis: 2 or., 2 lem. Val., 4.80@5.40; lem., 4.75@5.85.

October 16

New York: 10 Val., 1 mixed, 2 lem. Val., 2.45@9.10; lem., 7.10@10.00.
Boston: 5 or., 2 lem. Val., 5.65@7.80; lem., 6.30@8.25; grapefruit, 1.30@2.10.
Philadelphia: 5 or., 2 lem. Val., 5:10@6.30; lem., 5.55@6.90.

October 17

New York: 8 Val., 2 lem. Val., 3.85@9.55; lem., 7.85@9.05.
Boston: 6 or., 2 lem. Val., 2.75@5.90; lem., 7.20@8.35.
Pittsburg: 2 or., 1 lem. Val., 3.70@4.85; lem., 5.25@5.65.
Cleveland: 2 or., 2 lem. Val., 2.95@4.75; lem., 6.20@7.70.
Cincinnati: 2 or., 2 lem. Val., 5.30@7.20; lem., 3.00@5.65.

October 20

New York: 31 or., 1 mixed, 2 lem. Val., 4.10@9.20; lem., 6.55@10.30.
Cleveland: 2 or., 2 lem. Val., 2.95@6.75; lem., 4.60@6.80.
Boston: 4 or., 2 lem. Val., 3.75@6.65; lem., 7.50@8.40.
Cincinnati: 2 or., 1 lem. Val., 4.05@5.70; lem., 3.30@4.60.
Philadelphia: 8 or., 2 lem. Val., 2.90@7.10; lem., 4.60@7.80.
Pittsburg: 4 or., 1 lem. Val., 3.80@7.00; lem., 5.20@5.60.

October 21

New York: 21 Val., 1 mixed, 1 lem. Val., 3.95@8.40; lem., 8.10@10.60.
Philadelphia: 6 or., 1 lem. Val., 1.40@6.40; lem., 4.85@6.15.

MARKET NOTES

Walnut Grove district in Sacramento County reports stand good in celery fields and little root rot showing up. An average yield of a ton to the acre is expected.

Celery will soon be shipped from El Monte, Los Angeles County. The early crop shows up of fine quality and size.

Ingelwood, Los Angeles County, is now shipping lettuce. Weather has been to warm to head up well.

The Turlock sweet potato district has 45 per cent of the planting of the San Joaquin Valley. Another large sweet potato district centers around Atwater in Merced County.

Early cutting off of irrigation water in the Turlock section cut the yield of sweet potatoes to about 40 per cent of normal. Tubers are small but smooth and sound.

The peak of tomato shipment has passed in Central California.

Antioch, Contra Costa County, will soon be shipping celery.

Japanese berry growers are asking the state superintendent of weights and measures to reduce standard weight of berry baskets from 12 to 11 ounces.

The warehouse of the Almond Association at Oakdale recently burned. Growers are sending their stock to the Lodi plant. 80 tons of nuts were destroyed in the fire.

The Walnut Growers Association is already sold out on all stock in sight.

Tulare expects to start navel shipment the first of November.

Planting of cabbage in the El Monte district is well advanced and movement in small quantities is expected early in November. In Orange county, around San Fernando and other sections, however, transplanting from seed beds has not begun in any volume. Indications in all sections, based on current plantings and area of seed beds, are for considerably increased acreage due to good prices last season.

Labor shortage is holding back work in cauliflower districts but general indications show slightly increased acreage over last year, especially the early varieties. Wire worms are attacking new plantings in some fields. First carlot shipments are going east.

There are about 3,200 acres of cabbage in the San Joaquin Delta, as compared with 1,960 in 1918, showing an increase of 63 per cent. Movement is expected to begin from Staten Island and Tyler Island, October 15, and at Antioch November 1. The acreage in the El Monte district is around 700, and in Orange county probably 185. Some plantings in the El Monte district are well advanced. First shipments are expected early in November, but the bulk of the movement will be in late December and early January. Condition of the crop in this section is very good. The recent rains have greatly benefitted cauliflower, cabbage and lettuce.

Lettuce shipments are being made in mixed cars only. Stock is leafy and soft.

Imperial Valley reports an increased acreage contracted to lettuce over last year.

Car shortage has seriously interfered with shipment of tomatoes in Southern California. Shippers are refusing to accept anything except green stock. Pinks and ripes are being hauled to canneries at $16 and $18 per ton. The peak of the movement is expected the last of October.

Australia is landing large shipments of eggs at San Francisco.

Price on Lima beans grown by members of the Lima Bean Growers' Association of California has been fixed at 14½ cents for regular Limas and 13 cents for baby Limas.

Heavy receipts of grain from Texas has depressed the market in Los Angeles.

A slightly strengthened demand for onions is shown on Los Angeles market.

Grapefruit prices have gone up—on best grades—as much as a dollar a box, $6.50 being the top price.

The National Industrial Conference Board is publishing results of its investigation of cost of living for the five year war period. It finds that the cost of living in America has advanced during that period 71 per cent, the largest advance being on clothing, 100 per cent; next food, 85 per cent.

ARE YOU A "GOWAG"?

By G. W. Morrison

Every motorist is either a "Gowag" or a "Goiwag" — and the "Gowags" think they have something on the "Goiwags".

"Are you a Gowag?"

Two motorists were talking in the rooms of the Automobile Club of America in New York City, one afternoon recently, and the elder propounded this question to the younger.

"Am I a what?"

"I said, a Gowag. The word is very useful. I will take all the credit for inventing it. I was on a trip recently, and I found that at the end of each day's run there were certain things that I ought to think or, to attend to, and every now and then I found myself forgetting one or two of these things. So I hit upon the idea of devising a word made up of the initial letters of the five things that I ought to think of each day.

"G for gasoline. Of course, I had to see that the tank was replenished.

"O for oil. The car has simply got to have an abundance of oil, and it must be the right kind.

"W for water. The engine has a thirst, especially in these dry days.

"A for air. The tires must be inflated to the correct air pressure. Ten miles on tires underinflated may take hundreds of miles off of the end of their lives.

"G for grease. At the end of each day's run I must turn certain grease cups, one complete turn or more, otherwise I shall have squeaks in my spring and other troubles."

"That is a great idea," said the other man, "and I can see that in making up the word Gowag you have given the five points in what seems to me their proper order of importance—but, say, you have left out one thing that bothered me like blazes on my last trip, and I think you ought to put it right after gasoline and oil. It is ignition."

"Well, that would make a new word, 'Goiwag'."

"Yes," said the younger man, "and I can tell you that with a battery ignition system, such as I have, you cannot be too careful that your contact points are properly cleaned and adjusted, that there is no short circuit in the wiring, that you have an ample supply of good fuses and that everything is wired up properly. I started on my last trip with my battery discharging instead of charging and did not notice it until I had nearly wrecked it with the constant strain of ignition service."

SEED WHEAT FOR SMUT

Two methods have been in common use for the prevention of smut in wheat; one is called the bluestone and the other the formaldehyde treatment. Recent investigations have shown that the soil often becomes infected with smut and that even if the seed is carefully treated the plant becomes infected from the soil. With this in mind Professor Mackie of the University of California developed a double treatment with bluestone and lime water that would avoid this trouble. Unfortunately this method requires such careful manipulation that several farmers destroyed the germinating powers of their wheat and had to reseed their land.

There is no question but that smut is a very serious menace to the wheat industry of the whole Pacific Coast It greatly reduces the yield and makes the milling expense much higher. Not a single pound of wheat should be sown that shows any signs of smut and every kernel should be treated by one of the three methods, instructions for any of which can be obtained from the University of California.

Some of Sperry investigations seem to indicate that the use of bluestone alone tends to retard the germination of the wheat, (this is also true with formaldehyde, but to a lesser degree) and that if the seed so treated happens to be planted during cold, damp weather the germinating power is so reduced that a very poor stand is often the result. We know that the farmers in the Montezuma hills have for many years raised wheat almost entirely free from smut and they all use bluestone very consistently. It may be that those ranchers who get good results with bluestone follow fairly closely the method of summer fallowing and that they sow their wheat early and get benefit of enough warm weather to germinate the seed.

IRRIGATION OF FIELD CROPS

The agricultural experiment station of the University of Nevada has issued a 42 page bulletin, No. 96, "Irrigation of Field Crops in Nevada", which should be of particular value to producers in Colorado and that section of arid America. It refers to the fact that there are 70,000.000 acres of land in the state and only 900,000 acres, or 1 1-3 per cent, of the acreage was irrigated in 1918. The principal crops grown in the irrigated section are alfalfa and potatoes. The final determination of the bulletin is as follows:

"The results of these investigations in the irrigation of field crops show that the most economical use of water was obtained with a total irrigation of 3.5 feet in six inch applications for alfalfa and clover; 2.3 feet in seven inch applications for wheat; and 1.5 feet in three inch applications for potatoes and sugar beets. When alfalfa fields are used for fall pastures, usually an additional irrigation is required after the last crop of hay is harvested."

PHILIPPINE DEVELOPMENT

Since the United States came into possession of the Philippines those islands have enjoyed a greater development in all agricultural lines than has ever taken place in the history of the world in the same term of years. Pure bred sires of all lines of domestic animals were sent there from this and other countries, seeds and plants introduced, diseases and ailments of the people suppressed and controlled, sanitary and educational matters developed and improved and crop production perfected. Insect pests and plant diseases have been exterminated or controlled, and in 1917 the islands were freed from the locust pest for the first time in their history. All agricultural lines are now more highly developed in the Philippines than in any of the surrounding countries.

LAND CONFERENCE

A conference was recently held in the office of the secretary of agriculture, Washington, D. C., attended by the greatest agricultural leaders and authorities in this country. A comprehensive program of investigations was worked out in the conference, covering methods of increasing the area of land in farms; the better and more complete utilization of land now in farms; causes, effects and general significance of tenancy; relations of landlords and tenants; and policies in use in various countries for improving the economic and legal relationships of farmers to the land they cultivate.

TANNING FISH LEATHER

We have heard of no fish leather tanneries in California but there is one in Washington for tanning hides of sharks, hair seals, etc. There is one in North Carolina and one in Florida for tanning hides of sharks and porpoises. The government reports the number of these stations will rapidly increase as the leather is capable of wide use, oil is extracted from the livers and the bodies converted into fertilizers.

CANNED TOMATOES IN 1919

The government estimate of California's canned tomato pack for the present year is 1,664,610 cases of No. 3s, about 93 per cent of last year's figures. This report is based upon the figures submitted by 39 packing firms. Reports would indicate an increased acreage next year.

WEATHER REPORT

San Francisco, California, Oct. 18, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	1.65	2.76	68	42
Red Bluff	.00	.86	1.61	90	50
Sacramento	.00	.53	.90	84	50
San Francisco	.00	.56	.91	80	48
San Jose	.00	.26	.84	86	36
Fresno	.00	.27	.64	88	50
San Luis Obispo	.00	.40	.99	92	46
Los Angeles	.00	1.29	.38	88	54
San Diego	.00	.29	.34	84	56
Winnemucca	.00	.70	1.01	72	24
Reno	.00	.48	.85	74	32
Tonopah	.00	.39	1.63	68	30

WEATHER REPORT

San Francisco, California, Oct. 11, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min
Eureka	.00	1.65	2.24	72	44
Red Bluff	.00	.86	1.28	88	50
Sacramento	.00	.53	.66	86	44
San Francisco	.00	.56	.81	83	52
San Jose	.00	.26	.62	86	42
Fresno	.00	.27	.55	86	52
San Luis Opispo	.00	.40	.71	86	44
Los Angeles	.00	1.25	.20	86	56
San Diego	.01	.28	.20	80	56
Winnemucca	.00	.70	.90	70	22
Reno	.00	.48	.77	72	28
Tonopah	.00	.39	1.45	66	34

GASOLINE ENGINES at GREAT Reductions

To close out all gasoline engines in the $15,000 implement stock sale announced we will October 11th make the following big cut in prices:

One 1½ h. p. Fuller and Johnson, Regular Price $125.
Sale Price only $67.50

One 1½ h. p. air cooled on Myers 5x5 direct connected pump, Regular Price outfit $175.
Sale Price $99.00

One 1½ h. p. Fuller and Johnson engine connected to 3x5 Trahern force pump, Regular Price $200.
Sale Price only $123.50

One 2½ h. p. F. and J. engine, Regular Price $190.
Sale Price $97.50
This is a great bargain.

One 1¾ h. p. Sultan Engine and Hurst Duplex Spray pump, Regular Price $175.
In the Sale at only $115.00

One 3 h. p. Hurst greyhound upright engine, Regular Price $125.
Sale Price $75.00

One 1½ h. p. One Minute Engine, Regular Price $65.00.
Sale Price $40.00

One Hurst Spray Pump, 4 gallons per minute, suction hose, Regular Price $75.00.
Sale Price $45.00

Others to be sold including Cushman, Master Workman, one steam engine, etc., all at prices that cannot be duplicated anywhere. Write for price list of the big $15,000 implement stock and save money when prices on everything are going up.

DAVENPORT IMPLEMENT CO. Phone Broadway 5038
Permanent Location: 110-112 N. Los Angeles Street, Los Angeles

3 Sensations 3

Winsor's Giant Orion The Largest Boar on Pacific Coast
Great Sensation 3rd The Largest Boned Boar, for Age on Coast
Great Model The Most Popular Sow Sire on the Coast

We can supply Duroc-Jersey sows or gilts bred to these boars that will return three dollars for every dollar invested. We will be pleased to answer your inquiry.

Winsor Ranch R. K. Walker Manager **Bonita, Cal.**

Household Department

ROUND HALLOWE'EN

Rour
For
No n
The
There
A witch in tall and peaked hat,
And just beneath her, in a rage,
There stands a black and snarly cat.
With back arched high in the air,
As if about to spring.
You surely know by things you see
It's nearing Hallowe'en.
And Brother Jack has made a head
Of pumpkin, large in size,
And then he lights a candle
To shine from out the eyes.

TOO AMERICAN

Continued from last week.

"Sir or madam," I said, letting the regret I felt be apparent in my voice, "I beg your pardon. If you please, I should like to know whose ghost you are. I will repeat the alphabet. You may rap when you wish me to stop at a letter. In that way you can spell out your information. Is that satisfactory?"

It was.

"Who are you?"

Slowly, and with the assured raps of one whose social position is secure in whatever state of existence she may chance to find herself, the ghost spelled out: "Lady Agatha Pelham."

I hope I am not snobbish. Indeed, I think I have proved over and over again that I am not, by frankly confessing that I am an American. But at the same time I could not repress a little exclamation of pleasure at the fact that we were haunted by the ghost of a member of the English aristocracy.

Next time you buy tea, don't think of "a pound of tea." Think of the cups of tea you are going to drink.

Think of the pleasure you are going to get. Think of the real tea-flavor.

Then think of tannin—ugh!

Now do you want common tea or Schilling Tea, the fine economical practical tea?

There are four flavors of Schilling Tea—Japan, Ceylon-India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

Water!

All you want the year round wherever you want it—for house, barn, field, any place. Bore your own well, as thousands have done, with our time-tested

Standard Well-Boring Outfit

Easily operated by hand. Bores wells 8 to 16 in. dia., up to 100 ft. deep. One man bought outfit 8 years ago and has bored over 25,000 feet of wells.

BORES 100 FT. WELLS BY HAND

Make $20 to $30 per day boring wells for neighbors—easy to get 50 cts. to $2 per ft. E. C. Cole, Porter, Okla., writes:—Have just bored 41 foot well for neighbor in one day and made $41.00.

★ Thousands used during war by U. S. and English Governments. ★

Satisfied users in 46 states.

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ghost of a member of the English aristocracy.

that of a couple of telegrapn operators chatting over the wire.

Lady Agatha sympathized with our desire to become as English as possible; she could quite understand that. I find that many Englishmen approve the effort, although remaining confident that it will end in failure. Lady Agatha helped us a great deal. We used to have lessons in the evenings in the library. For instance, I would pretend that I was an Englishman in a railway carriage, and that an American had just entered and I was afraid he would speak to me. I got rather good at this, and made two or three trips to London to try it out. I found that Americans were imposed upon, and actually in one instance I made one Englishman think that I was an Englishman who thought he was an American.

Uncle Bainbridge used to attend our evening classes with a contemptuous expression upon his face, and snort at intervals. Once he even called me "Puppy!" Then he thrust his telephone arrangement before my face and insisted that I tell him whether I was sane or not.

"Puppy!" he bellowed. "Quit apin' the English! I get along with 'em myself—without any nonsense! Treat 'em white! Always treat me white! No foolishness! Puppy!"

My wife and I soon discovered that Lady Agatha and Uncle Bainbridge were on the most friendly terms. He would sit for hours in the library, with his telephone receiver held patiently near the bookcase, shouting questions and smiling and nodding over the answers. Marian and I were afraid that Uncle Bainbridge, by his lack of polish, might offend Lady Agatha.

Indeed, we need not have worried about Uncle Bainbridge's offending Lady Agatha; the friendship grew closer and closer. One day my wife stopped me just outside the library door and said in a whisper, indicating the general direction of Lady Agatha's bookcase with a wave of her hand.

"Henry, those two old things in there are calling each other Hiram and Agatha."

I listened, and it was so. A week later I heard Uncle Bainbridge seated by the bookcase, bellowing out a sentimental song. He was having a great deal of difficulty with it, and in order that he might hear himself he was singing with the black disk arrangement held directly in front of his mouth.

I cannot say that Uncle Bainbridge became etherealized by the state of his feelings toward Lady Agatha, but he cut out the bunches of gray hair from his ears, and he began to take care of his finger nails. Lady Agatha was having a good influence upon him.

My wife and I were very well contented that Uncle Bainbridge's feeling for Lady Agatha should grow stronger and stronger. We argued that while he was so intimately friendly with dear Lady Agatha he would not be so likely to fall a prey to any person who might want to marry him for his wealth.

But this cheerful condition of affairs was not destined to last many weeks. One day my wife received a letter from her cousin, Miss Sophia Calderwood. Cousin Sophia was in London, and would be with us on the coming Saturday.

Miss Sophia was past her first youth, but still very girlish at times. Under her girlishness there was a grim determination. She had made up her mind to marry Uncle Bainbridge.

So we both considered Miss Sophia's visit rather inopportune. Not that we felt that Uncle Bainbridge was predisposed toward her. On the contrary, he had always manifested more fear than affection for her. But, I repeat, she was a determined woman. Miss Sophia, when she arrived, was more girlish than I had known her in fifteen years. And she had set up a lisp. She greeted Uncle Bainbridge impulsively, effusively.

When we told Miss Sophia about Lady Agatha, and she finally understood the intimacy that had grown up between Lady Agatha and Uncle Bainbridge, she looked reproachfully at my wife, as if to
traitor to my
announ
sure
to make the
this person!"

Sophia, although certain now he would receive no assistance ny wife in her siege of Uncle idge, did not swerve from her determination to subjugate him. I do not know whether I have mentioned it or not, but Miss Sophia could scarcely be called beautiful. One after another, all her life, she had seen men upon whom she had set her affections become the husbands of other women, and in her duel with the ghost there was a quality of desperation that made the struggle, every move of which I watched, extremely interesting. In spite of her announcement that she did not care to meet Lady Agatha, she learned the code by which she communicated with us. Miss Sophia must have been desperate indeed, or she would not have resorted to the trick she used. About a week after Miss Sophia's arrival Lady Agatha suddenly ceased to communicate with us. In the light of what happened later I am sure that Miss Sophia deliberately drove Lady Agatha away.

Several days after Lady Agatha fell silent I heard Uncle Bainbridge bellowing forth questions in the library. I was outside the house near the library window, which was open. Thinking joyously that Lady Agatha had returned to us, I stepped nearer to the window to make sure. I saw at once, as I peeped in, that the bookcase, which set very near the window, had been slightly moved. Miss Sophia, who was very thin, had managed to introduce herself into the triangular space behind it. She was crouched upon the floor rapping out a conversation with Uncle Bainbridge—impersonating Lady Agatha! Uncle Bainbridge, in front of the bookcase, was apparently unsuspicious; nor did Miss Sophia suspect that I saw her through the half-inch of window that commanded her hiding place.

"You must marry!" rapped Miss Sophia, in the character of Lady Agatha.

"Who?" bellowed Uncle Bainbridge.

"Miss Sophia Calderwood," said the fake ghost.

"Aggie, I'm hanged if I do!" yelled Uncle Bainbridge. "Ask me—something—easy!"

"Hiram, listen carefully," began the false Lady Agatha. Then she told him that this would be their last interview. Circumstances over which she had no control compelled her to depart. She was to assume another phase of existence upon another plane. And she knew that he would be happier wedded to some good woman. It was apparent to her that Miss Sophia would make him the ideal wife. Finally Uncle Bainbridge snorted out his pledge and stumped away.

That night he went to London. It was a week before he returned.

The night that he came back he gathered us all about him in the library. "Something to say! Important!" he shouted.

We all assumed attitudes of attention.

"Think maybe—get married!" said Uncle Bainbridge. It was just like Uncle Bainbridge to announce the matter in the lady's presence before having formally asked her; but I felt that it was a trifle hard on Miss Sophia. A glance at her reassured me on that score. She was flushed; but it was the flush of triumph rather than the flush of embarrassment.

"Bought a castle!" said Uncle Bainbridge, warming to the work. "Fine castle! Like castles! Fix it up! Live in it! Settle here! Like England! Fine country!"

"A castle! Oh, how lovely!" shrilled Miss Sophia, clapping her hands girlishly. "How lovely for all of us!"

"Not invited!" roared Uncle Bainbridge, taking us all in with one sweeping gesture. "None of you!"

There was silence for a moment.

"Going to get married!" said Uncle Bainbridge, raising to his feet. "Not Sophia! Caught Sophia—behind bookcase! Knew all the time! Sneaky trick! Marry fine woman! Henry saw her—over the fence that day! Fine woman! Curate's mother here! Dumplings! Fine dumplings! Learned to make 'em for me! She don't want—to get too thick—with any my relations! She says—all of you—are too American!"

The Cultivator Patterns

THE CULTIVATOR PATTERNS

2694—Girls' Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. Size 10 will require 3½ yards of 40 inch material. Price 10 cents.

3017. A Pleasing Dress. Cut in 3 sizes: 16, 18 and 20 years. Size 18 will require 6¼ yards of 38 inch material. Width of skirt at lower edge is about 1½ yards. Price 10 cents.

3005. Boy's Suit. Cut in 4 sizes: 3, 4, 5 and 6 years. Size 4 will require 3¼ yards of 27 inch material. Price 10 cents.

3016. Ladies' House Dress. Cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. Size 38 requires 5¼ yards of 36 inch material. Width of skirt at lower edge is 2¼ yards. Price 10 cents.

3007—Junior's Dress. Cut in 3 sizes: 12, 14 and 16 years. Size 14 will require 3¾ yards of 44 inch material. Price 10 cents.

3015. Ladiss' Drsss. Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 6⅜ yards of 44 inch material. Width of skirt at lower edge is about 1¾ yards. Price 10 cents.

3018. Child's Play Dress. Cut in 4 sizes: 2, 3, 4 and 5 years. Size 3 will require 2¾ yards of 27 inch material. Price 10 cents.

3023. Ladiss' Apron. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measures. Size Medium requires 4¾ yards of 36 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest Chicago styles, all pattern orders are filled in Chicago. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

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California Cultivator
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Send 10 cents in silver or stamps for our Up-to-Date FALL AND WINTER 1919-1920 CATALOGUE, containing 550 designs of Ladies' Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various, simple stitches) all valuable hints to the home dressmaker.

A HALLOWE'EN AUTO PARTY

By Ruth Dougherty.

It was entirely informal, of course, as a Hallowe'en auto party must be to be any fun. Three machine loads of neighbors and friends drove to the beach 15 miles away for a picnic supper.

We left home at half past five, so it was just growing dusk by the time we reached the beach. All scattered to gather driftwood and there was soon a great heap for the bonfire. A little quick fire was built at one side, and over it the folding wire broiler had its stout pointed legs driven into the sand. On it the coffee pot was placed, and then the wienies and bacon. Long handled meat forks were used to turn the meat.

Meanwhile the "table" was being set. There was a crepe paper cloth and napkins printed in gay colors with witches and black cats and jack-o'-lanterns. In the center was a real pumpkin jack-o'-lantern surrounded by apples, grapes and nuts, and at each place a tiny papier mache jack-o'-lantern filled with small, hard candies. Paper plates were used and each one brought his own cup, glass, fork and spoon.

The jug of cider and the glasses were at one end of the "table," the coffee pot and cups at the other. Wienies and bacon, sizzling hot from the fire, were placed in split finger rolls and vanished quickly. Then there were a big dish of potato salad, sandwiches of whole wheat bread spread with peanut butter and apple butter, and rye bread with soft cream cheese, sour dill pickles and doughnuts.

The children of the party could not long content themselves sitting down, but hopped about the bonfire, sandwich or doughnut in hand, and made little dashes down the beach after the receding waves, to come scampering back with happy shrieks for another supply of eats. Meanwhile at the table jokes and stories were passed about as well as eats.

Then fresh wood was heaped on the bonfire and everybody joined in an impromptu witch dance about it. Some of the boys rode broomsticks of driftwood and now and then an awesome figure would creep with hollow groans from the darkness beyond the fire till the light revealed it was only hooded with dried seaweeds. A discarded can furnished the music and somebody found a toy whistle to add to the pandemonium.

"The jolliest Hallowe'en ever" was the universal verdict.

HALLOWE'EN GAMES

Cut cardboard in the shape of a cat, covering one side with black paper. On the other write:

1. A cat and a part of a tree.
2. A cat that will be a butterfly.
3. A wet cat.
4. The Roman cat.
5. A sanguinary cat.
6. The horned cat.
7. A cat and a form of the verb "to be."
8. A cat and a toilet article.
9. A cat and a relative.
10. A cat that throws stones.
11. A cat which brings trouble.
12. A cat and what Jack Frost does to flowers.

Leave space under each number for a word, one syllable of which is "cat." The answers are: 1. catalogue. 2. caterpillar. 3. catarast. 4. Cato. 5. category. 6. cattle. 7. catarrh. 8. catacomb. 9. catkin. 10. catapult. 11. catastrophe. 12. catnip.

Around the neck of two of the cardboard cats tie a red ribbon; around two others, a green, and so on, using a different color for each pair until you have as many cards prepared as there will be guests. These of course are to pair off the party for the guessing game. A little pumpkin pie with a jack-o'-lantern face made of currants will serve for first prize and a bright red apple for booby.

"Guessing Eyes" is an old Hallowe'en game. A strip of white muslin has "eyes" cut in it at intervals, each opening being numbered. A sheet fills the white wall and a figure dressed like a ghost conducts the girls behind it. Each girl takes a number corresponding to the number on the muslin, and standing close to the eyeholes looks through steadily for one minute. The boys are lined up six feet from the cloth and guess the person, by number, from what they can see of the eyes. Then the boys go behind the muslin and the girls guess the owner of the eyes they see in the same way.

A wheel of fortune will furnish much fun. Cut a large pasteboard disk and paint it to represent a wheel. Fasten with a nail on a large wooden board, to turn easily. Draw a circle outside the wheel and paint numbers around it. An arrow is firmly fixed to the nail so that it does not revolve. Have a witch in costume preside over the wheel. She has a large rustic basket filled with fancy envelopes, each numbered and containing a fortune in verse. The guests in turn give the wheel a turn or spin and receive from the presiding genius an envelope with the number corresponding to the one to which the arrow points when the wheel stops.

Bobbing for apples in a little different way is done by putting an apple on one end of a two-forked stick and a little bag of cheesecloth filled with flour on the other end. Hang the stick by a string midway, in a doorway or from a chandelier. A bite out of the apple wins the trick, but there is many a slip. Prizes may be candy or odd toys.

HALLOWE'EN GOODIES

Sugared Popped Corn.

Put two tablespoons of butter in a saucepan and, when melted, add two cups brown sugar and one-half cup water. Bring to the boiling point and let boil 16 minutes; pour slowly, while stirring constantly, over two quarts of popped corn and continue stirring until every kernel is well coated with sugar.

Cocoa Fudge.

One-half cup milk, three level tablespoons butter, two and one-half cups powdered sugar, six level tablespoons cocoa, pinch of salt, one teaspoon vanilla; mix all ingredients together but vanilla; cook, stirring constantly, until it begins to boil; then cook slowly, stirring occasionally eight or ten minutes, or until it makes a firm ball when dropped in cold water. When cooked enough add the vanilla and beat until it is like very cold molasses in winter. Pour in buttered pans; when firm cut in squares. Great care must be taken not to beat too much, because it cannot be poured into the pan and will not have a gloss on top.

Apple, I pare and swing to know
Who I soon shall marry;
From my hand I now thee throw,
Mystic letter carry.

HOUSEHOLD CONTEST

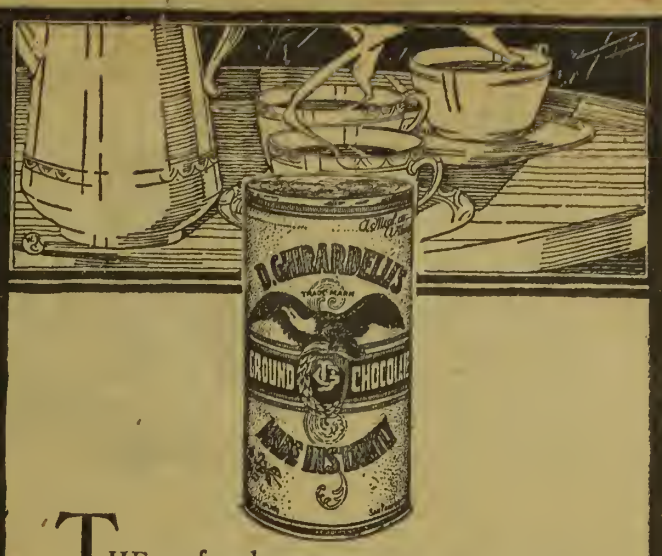
The Cultivator will renew the household contest feature which has brought so many interesting letters into its columns. On November 22 the department will be given to Thanksgiving letters.

How are you planning to observe the day? The dinner, of course, will be the big feature. What is the menu? Tell Cultivator readers how to make at least one of the good things that will appear on your Thanksgiving table. Just a friendly, chatty talk from one neighbor to another is what the Cultivator likes best to print and its readers like best to see.

Four hundred words is the limit for each letter. Please write on one side of paper.

For best letter $2 in cash will be given; for second best, $1; for all others published, one year's subscription to California Cultivator. With your letter please send name and address of one to whom you wish subscription credited.

All contest letters should be in this office by Saturday morning November 8. Address California Cultivator, Los Angeles.



THE refreshment tray can always thank Ghirardelli's Ground Chocolate for its magic aid. Creamy hot chocolate to drink; cakes with possibly a chocolate filling and frosting; waxy squares of chocolate fudge—not to mention countless other "goodies"—appear in a twinkling when the hostess summons the ever-ready can of Ghirardelli's.

Never sold in bulk—but in cans only.
In ½ lb., 1 lb. and 3 lb. sealed cans—
at the store where you do your trading.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.

Since 1852 San Francisco

(F2)

GHIRARDELLI'S Ground Chocolate

Home comfort
convenient, clean and economical

A good heater with Pearl Oil gives comfort and cheer in the home. Home comfort—at the touch of a match. No dust, no dirt, no smoke, no odor. Oil consumed only when heat is needed.

Pearl Oil is refined and re-refined by our own process. Clean burning. Sold in bulk and five-gallon cans. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.

STANDARD OIL COMPANY
(CALIFORNIA)

Better service is assured by the advertiser if when writing you mention the California Cultivator.

Overland

TRADE MARK REG.

The New Overland 4, with Three-[illegible]oint Cantilever Springs, the Greatest Imp[illegible]vement in Riding Comfort Since Pneumatic Tires

THIS handsome new Overland *has a Springbase of 130 inches*—yet a wheelbase of only 100 inches.

It is a new type of car with a new standard of riding comfort.

The springs are Three-Point-Cantilever springs of Chrome Vanadium steel, a new type of spring exclusive with this new Overland.

They give the Overland 4, with its light weight and ease of driving, the road-comfort and road-steadiness formerly confined to heavy, expensive cars of long wheelbase.

They end the ordinary bouncing, vibrating over the bumps. They stop the usual swaying, twisting and jars that fatigue the passengers and rack the car.

The wheels and springs go up and down, following the bumps, but the passengers and car are shielded from road blows. The Three-Point Springs protect the mechanism from road injuries and prolong the life of the car.

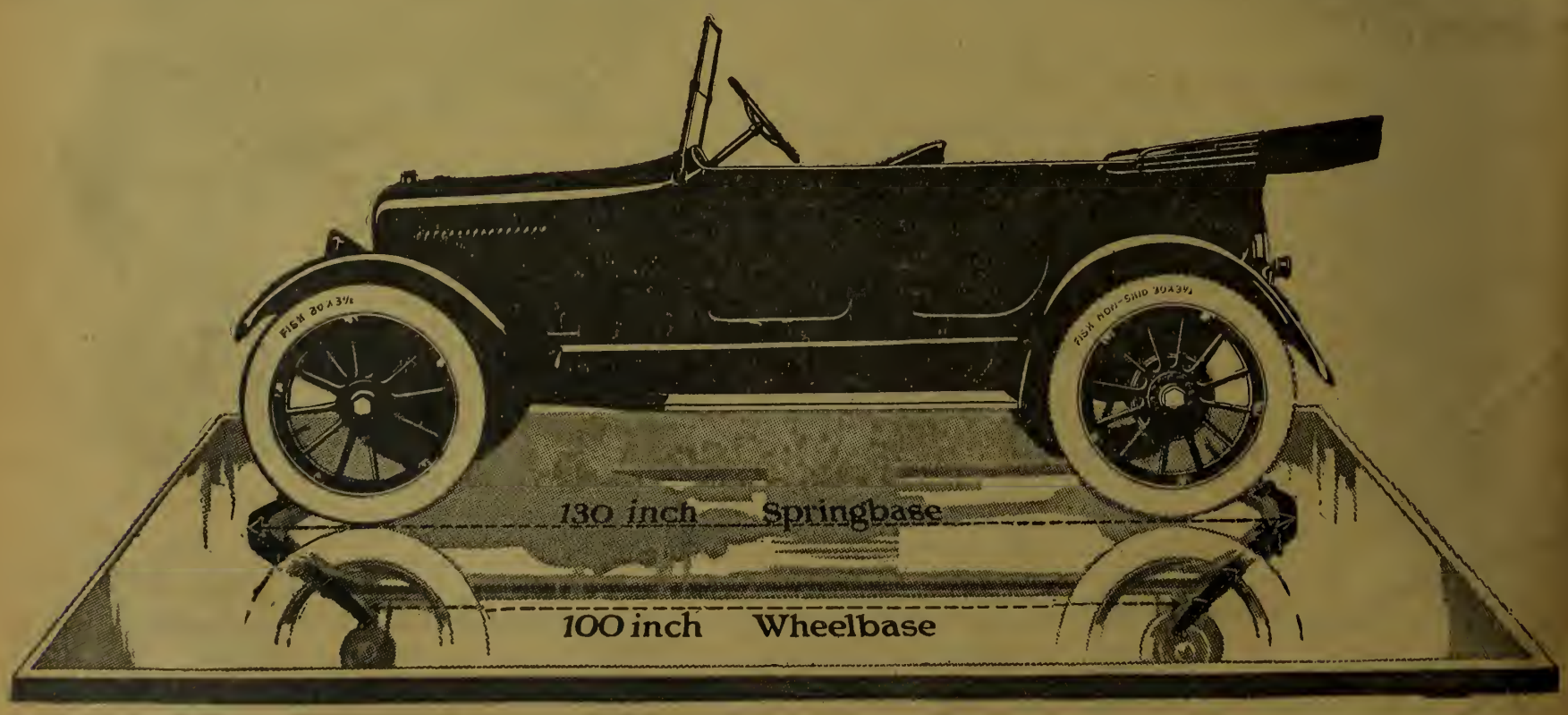
Light weight brings great economy of tires and gasoline.

High quality materials and workmanship are used in Overland 4 throughout. Its [illegible]ipment is high grade, complet[illegible]om Auto-Lite Starting and Lig[illegible]g to Demountable Rims.

Ask the Overla[illegible]ler to show you this new moto[illegible]ich has been tested more th[illegible]000 miles, let him explain to [illegible] exclusive Three-Point Cantil[illegible] springs, then—

Select rough roads that you formerly dreaded to ride over and see what it means to ride in Overland 4.

Overland 4 Touring, $845; Roadster, $845; Coupe, $1325; Sedan, $1375. Prices f. o. b. Toledo.



WILLYS-OVERLAND, INC., TOLEDO, OHIO

Sedan, Coupes, Touring Cars and Roadsters
Willys-Overland, Limited, Toronto, Canada

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — November 1, 1919 — No. 18

Grand Champion Holstein Bull, Los Angeles Show

Merci Lad Korndyke Burke

Owned by Santa Anita Rancho

BIG DOUBLE DISPERSAL SALE

Mr. G. W. Emmons, Proprietor of DIABLO STOCK FARM, Danville, Calif., has instructed us to sell at public auction to the highest bidder his entire herds of registered horned Hereford cattle and registered Duroc-Jersey hogs at

WESTERN HORSE MARKET, 297 Valencia Street

San Francisco

Monday, November 10, 1919

at 9:30 A.M.

We shall begin to sell the Duroc-Jersey hogs promptly at 9:30 A.M. on the above date, and sell the cattle immediately after the hogs are sold.

52 REGISTERED HEREFORDS 52

Mr. Emmons is selling his entire herd of horned Herefords only because he has decided to build the largest herd of quality POLLED HEREFORDS in the West, and wishes therefore to center his efforts upon polled cattle exclusively.

The cattle in this offering are bred in the most substantial and popular lines of the breed, and include many high class individuals.

20 Choicely Bred Breeding Cows

There are twenty breeding cows in the sale, some with calves at foot, and a large number well along with calf to BERTRAM FAIRFAX and WITCHFORD.

15 Desirable Heifers

There are some especially good heifers to be sold, among them a number of daughters of BERTRAM FAIRFAX and MUNIZ. These heifers range from 2 year olds to calves.

17 Bulls

The list of bulls is headed by BERTRAM FAIRFAX, who is by a son of the famous PERFECTION FAIRFAX, whose descendants have won high honors in many show rings and have commanded top prices in the best sales. He was grand champion at the San Francisco Land Show and getting a fine lot of calves.

There are nine bulls in the sale about ready for service, among them some that should command the attention of breeders, while the rangeman will find a good selection for his purposes.

These cattle will be sold in just good thrifty range condition.

Every animal sold as a single lot guaranteed to be a breeder; every animal over six months old tuberculin tested.

100 REGISTERED DUROC-JERSEYS 100

The sale of this herd at this time does not mean the retirement of DIABLO STOCK FARM from the breeding of Duroc-Jerseys. The decision to sell was reached only in view of extensive changes and improvements to be made in the hog department of the farm to accommodate even a larger herd than at present.

60 Sows and Gilts of Breeding Age

This sale is a rarely good opportunity to secure well bred sows and gilts, and there is an unusual uniformity of breeding throughout, as practically all of them are sired by the great show and breeding boar CALIFORNIA'S DEFENDER, Junior Champion boar at Panama-Pacific International Exposition. There are some excellent show prospects among them, and a very large number of most promising brood sows.

California Orion Cherry King

who is by a son of Orion Cherry King and out of a daughter of Joe Orion 2nd, will be sold. Many of the sows and gilts are bred to him and his first litters indicate that he is breeding fully up to the standard of his pedigree and individual merit.

Every animal immunized against cholera by the double treatment

Remember that the sale begins promptly at 9:30 A.M. Some of the best will be sold early.

CATALOG FREE ON REQUEST

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Pres. C. L. Hughes, Sales Manager

211-212 Ochsner Bldg., Sacramento, Cal.

California Cultivator

Vol. LIII, No. 18 Los Angeles, November 1, 1919 One Dollar Yearly

The Los Angeles Livestock Show

By R. P. Royce

ANY doubts that may have been entertained that Los Angeles and Southern California were not ready for a real livestock show were dispelled by the first annual Los Angeles Livestock Show which opened October 18 and continued until October 26. For eight days thousands of visitors thronged the grounds to learn at first hand the real status of the livestock industry in Southern California, and it is certain that no western show has served the purpose for which it was established to better advantage than did the show just closed, and if the initial event is to be taken as a criterion, the permanency of the show should be assured.

After the grief experienced last year, when on account of the influenza the opening was delayed week after week, some doubt was expressed as to whether a success could be registered this year—the question was answered by this year's show.

Manager Thomas, since June 14, the day the show was assured, succeeded in whipping into shape an exceptionally well balanced exhibit of the leading breeds of livestock. As a matter of fact it can be stated that a number of the departments staged shows the equal and in some cases the superior of any seen on the coast.

The arrangement of the grounds and the accommodations were most excellent for so young a show. The entire livestock exhibit, except the light horses, was concentrated in a number of barns that practically joined each other, thus making it possible for visitors to see the whole exhibit without great effort. The facilities for judging were fairly convenient, save for the swine, in which case it was necessary to drive the hogs a considerable distance through the crowd.

The most convincing evidence that a show is filling a real place in a community can be found in the interest manifested around the judging rings, and one of the most noticeable features of the show was the keen crowds that filled the seats about each ring. No one could fail to catch the spirit of the crowds—they were interested in better livestock and were there to learn the most acceptable types. The show furnished the first opportunity many had had to become acquainted with the best of the improved breeds, and the opportunity was improved.

Each afternoon the crowds were entertained with races and an outdoor horse show. The latter event was one of the most delightful affairs of the kind ever held in Southern California and brought out a surprisingly high quality of pleasure horses. The various horse show classes were judged by Charles W. Green of Centralia, Missouri, a judge of national reputation.

Sam H. Greene, secretary of the California Dairy Council, had an extensive exhibit outlining the work and aims of the council. A feature of the exhibit was the "milk bar" where the food value of milk was stressed and made available in a long list of milk drinks.

The state department of agriculture had an educational exhibit based on the work of the newly organized department.

One of the most instructive features of the entire show, from the dairyman's standpoint, was the demonstration conducted by F. H. Scribner of the dairy division of the Los Angeles County farm bureau. This demonstration concerned the work of the cow testing association and included a number of cows selected to make plain the importance of accurate knowledge as told by the scales and the Babcock test. Five cows were used. Those attending the demonstrations were asked to pick the best producers on their individuality. The daily records were given as well as the records for the year. No demonstration could have been more convincing and it is certain that many a dairyman took the lesson to heart.

Another attractive feature of the show was the splendid exhibit made by the Santa Anita Rancho. The exhibit was housed in two specially built barns and included Holsteins, Percheron, Arabian and thoroughbred horses and jacks. Competition was made only in the Holstein classes. The exhibit was arranged by Manager W. H. Taylor.

Beef Breed Champions

Bashan Augusta, grand champion Shorthorn bull, owned by Dibblee Estate, Santa Barbara, California.

Little Sweetheart, grand champion Shorthorn female, owned by T. S. Glide, Davis, California.

Miss Rialto, grand champion Hereford female, and Bonnie Laddie, grand champion Hereford bull, both owned by the Hereford Corporation of Wyoming.

Anxiety Fairfax, second prize two year old Hereford bull, owned by Wm. Henn, Kansas City, Missouri.

The weather man was kind throughout the week save on Friday when a light shower kept down the attendance.

The total attendance was not as large as had been hoped for, but was encouraging. Perhaps the gate receipts would have been larger had the daily papers of Los Angeles been more generous in the amount of space given the show The success of a show depends upon the attendance, and no factor is more important in creating interest than the daily press. It is to be hoped that in the future the Los Angeles papers will realize the importance of such shows to the community.

BEEF CATTLE

With herds from Missouri, Wyoming and Washington competing with some of the best owned in California, the showing of beef cattle was of a quality to bring forth much commendation, and the interest manifested adds to the conviction that no class of livestock is coming in for more attention during the next few years than will be accorded beef cattle.

All the exhibitors from other states exhibited at the 1918 Liberty Fair and the fact that they returned indicates that they consider California a promising field.

Frank Brown of Carlton, Oregon, western fieldman for the American Shorthorn Breeders' Association, placed the Angus and Shorthorn classes, and Wallace Good of Kansas City distributed the Hereford awards.

The Shorthorns

Six herds of Shorthorns had entries in the various classes, but the principal competition was confined to the herds of Glide, Pacheco Cattle Company, and the Estate of Thomas B. Dibblee, all of which had met at the state fair. William Henn of Kansas City had a number of entries in the bull classes. F. L. Hall of Perris showed a few young things, and the University of California, showing in competition for the first time in a number of years, had one entry.

The two aged bulls were headed by Hallwood Flash, the massive roan from the Dibblee herd, that topped his class and was senior champion at Sacramento. Cumberland Goods, shown by Henn, lacked the scale and depth of the winner, but would be hard to stop in many shows.

For the first time the top two two year olds were rated differently. At this show Judge Brown preferred the scale and thickness of the roan Matchless Elite shown by Glide to the smoother covered, white Pacheco Marshall from the Pacheco herd. Henn was third with a red son of Scotch Lord.

The senior yearlings kept the rating given them at Sacramento, the white, Bashan Augusta, topping the Pacheco and Glide entries. He is narrowing the margin of thickness held over him at the state fair and continues to keep his smoothness.

The four senior calves had met before, but at Los Angeles the third prize calf at the state fair was placed at the top. The others stood in the original order. The winner is a very thick, soggy youngster and made a decidedly better showing than his first time out, his top showing much stronger.

A thick, good coated, evenly balanced roan, March junior, shown by the University of California, was sent to the top to be followed by the attractive white, Spicy Count of Glide's and the larger roan, Pacheco Barmpton. Hall was fourth with an attractive calf lacking the condition of those above him. The winner furnished the junior champion and reserve grand champion. The beautiful white, Spicy Lady, was alone in the aged class.

The two year olds conceded top place to Little Sweetheart, the remarkable heifer shown by Glide. Few females have sufficient class to take her measure as she would be a factor in any show. With rare character and sweet femininity, coupled with a conformation that borders on perfection, and fitted to the minute, she was quite the class of the show. Second place fell to Meadow View Village Girl shown by Dibblee. It will be recalled

Continued on Page 594.

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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G. W. Waterbury — E. L. Koethen

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Saturday Nov. 1, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

There were dozens of individual animals at the livestock show that would have graced our cover most acceptably. As the champion bull of the leading dairy breed at Los Angeles, the splendid bull from the famous Santa Anita Rancho was accorded whatever distinction may come from appearing on the cover page.

RAIN

Another rain has visited the southern end of the state with precipitation of from one-half to one inch south of Tehachapi. The storm extended into the San Joaquin Valley and plows are busy preparing for next season's crop.

GIVE HER MORE

We need good roads, for good roads will bring health and better living conditions and will increase our agricultural, industrial and commercial prosperity. Paved highways will give protection, pleasure, profit.

Californians are blessed beyond most other peoples.

ALGAROBA

We note in the Hawaiian Forester and Agriculturist a feed company advertising not only hay and grain, but "algaroba feed, a substitute for oats and rolled barley." We doubt not there are many groves of St. John's Bread scattered over the hillsides of the Hawaiian Islands and the peas and pods reduced to a meal become a valuable feed for the livestock of the islands. The hillsides of California will probably offer suggestion for utilization along this line.

AMERICANIZATION

Monday, October 27, was observed as Americanization Day. It was the birthday of Theodore Roosevelt and it was expected to be the closing day in the campaign for the Roosevelt memorial fund. The campaign, however, has been extended until sufficient funds are volunteered with which to establish a fitting memorial at Washington and a memorial park at Oyster Bay.

THE LARGEST UNIVERSITY

California has not yet arrived at the point where it can lay claim to having the largest university, although according to figures just compiled it now stands second in the list of the great universities of the country. Columbia is first, but California has a long lead over all others for second place. There are now registered in our great state institution 9,427 students. Nearly 9,000 of these are in the departments at Berkeley. Harvard, closest to California in numbers, has total registration of 4,369.

RED CROSS

The third roll call of the "greatest mother in the world" is now in full swing. This is not a campaign for a hundred millions in money, but for millions of members who will support the work of this organization which had such great place in the worlds war and will have equally great place in the world's peace. Almost every week there is call for help from this organization, and the fact that it has such great equipment enables it to accomplish much in the saving of human suffering where other organizations would fail. Let us not be slackers but support the Red Cross in peace.

SHOP EARLY

We recently called attention to the shortage of nursery stock and advised planters who wished to secure variety of fruits to order early. Now comes the information from the state horticultural commission that the total potato crop of the United States is reported extremely short, in fact, so short as to cause apprehension on the part of observers of food conditions. While it is some months before planting time it is none too early to secure supply of known high producing, disease free seed. Selection at harvest time is possible and will give greater satisfaction than taking whatever is offered at the last moment of the planting season.

ANDREW T. GAREY

Andrew T. Garey, horticulturist and son of a pioneer California horticulturist, passed away in Los Angeles, the city of his birth, on October 14, at the age of 65 years. Mr. Garey's father, Thomas A. Garey, whose death preceded that of the son by a few years only, was one of the earliest professional horticulturists and nurserymen in the south end of the state. It was he who recognized the value of a chance seedling lemon in the orchard of C. R. Workman in 1877 and propagated and distributed it under the name of Eureka, the leading lemon of today. Andrew T. Garey was associated with his father's business for nearly 40 years and was considered an authority on all matters pertaining to fruit trees and fruit culture. When still a young man he spent some time in Mexico superintending the budding of oranges and the planting of orchards. For six years, beginning in 1893, he was superintendent of the city parks of Los Angeles. Since that time to the day of his death he was a horticultural inspector in Los Angeles County, serving throughout the term of eight commissions and commissioners.

GROWING

We have received from Manager Erskine of the Fillmore Citrus Fruit Association an annual report for the year ending in August. It is largely taken up with table and other statements regarding gross prices, returns, etc., all of which will have most intense interest for members, for it has been a successful year.

But we turn to a bit of history which is chronicled under "Growth of the Association." The association was incorporated in 1897. In 1900 the manager wrote: "Our association is composed of 40 or 50 orange and lemon growers. We own our own picking house at Fillmore, built last fall at a cost of over $1500. Last year the association handled about 16 cars of fruit." Nearly a score of years has passed and the association still lives and the cooperative spirit has grown every year. Gone is the grader in the "new house," "power for which was furnished by H. M. Walker, director and secretary" who worked the machine with his feet while he sorted fruit and pondered over his duties as director and secretary. The little old building has gone and a far different structure covering about two and a quarter acres, costing over $50,000 and with capacity of ten cars daily, is now required to handle the business of the association. When Chas. Dreher was manager in 1900 he had occasion to call attention of one of the growers to his carelessness in delivering fruit because his team "was driven at a trot" while bringing fruit to the packing house. Not only the packing house, but the roads. have changed, and the motor truck today brings in the fruit "at a trot."

And Fillmore is one of the smaller associations which cooperation has brought together in California.

SHOW WORTH WHILE

November first is an important date. Today there opens in San Francisco the first California International Livestock Show, a show "dedicated to the proposition that the Pacific Coast is America's great breeding ground for improved livestock and the world should know it."

The San Francisco show following closely the Los Angeles Livestock Show and preceding by a week the Pacific International Livestock Exposition at Portland, is the middle link in a chain of shows that are destined to write large the fame of this coast region. That California should sponsor two important shows can be taken as indicative of the important part animal husbandry is coming to play in the development of this state.

The name "California" used in connection with many products has come to have a high significance. That some day the term "California bred" will be associated with the highest type of improved livestock we have greatest confidence.

The San Francisco show has been fortunate in having at its helm a man who believes devoutly in the future of the West, a man who has done as much as any other man to prove the possibilities of California, a man whose faith gave him courage to invade "unheralded and unsung" the greatest livestock show in the world and who brought back the highest honors of that great show, and a man whose untiring efforts made the California International Livestock Show a fact—Gordon H. True of the animal husbandry department, University of California.

In the establishment of the show, True has been accorded the support of the business interests of San Francisco, the breeders and the press. He deserves the further support of the public. The show is planned to inspire, encourage and educate those who have not learned the full importance and economic necessity of a broader agriculture predicated on livestock.

No California farmer should fail to spend a few days at San Francisco.

SCORED A SUCCESS

The first exclusive livestock show ever held in California is now history and is listed under the heading of "Successes."

Whether or not the initial show made money or paid out is a matter of slight importance—there are values not to be measured in dollars and cents, and to attempt to gage the success of the Los Angeles Livestock Show in terms of money would evidence a complete failure to appreciate the motive that brought that show to a fact.

The show was initiated by those interests of vision that realized the stimulating influence such a show would have upon the livestock industry of the South and the part it would play in bringing about a closer interest between the country and the city, the producer and the consumer.

That the show served its purpose well is attested by the large and interested crowds and the fact that the board of directors, the men responsible for the show, voted unanimously that the Los Angeles Livestock Show should become a permanent affair and declared for a greater exhibit in 1920 In the years to come, when the cattle, sheep and hogs of Southern California show the refining influence of better breeding; when the livestock producers have placed their operations on a more profitable basis, when the entire community comes to regard the industry fundamental to a substantial agriculture; when the fertility of the valleys and the hills is increased, then will it be time to check over the results and decide whether or not the show just closed was a success and worth the effort.

There is another angle of the question. Aside from the economic importance to a community of better livestock, nothing is more certain than that contact with well bred animals tends to develop a better citizenship.

Our congratulations to the men responsible for the establishment of the show—the management and the exhibitors—and our sincere and hearty best wishes for the shows of the future.

The New Fumigation

By Ernest Braunton

THERE is nothing mysterious about the new liquid hydrocyanic acid. In the manufacturing plant the gas is generated in the same manner as it always has been, with "cyanide, sulphuric and water." It is then run through condensing pipes bathed with brine from the refrigerator plant and transformed to a liquid. As this contains considerable water it is distilled, the water separated and out comes the acid 96 per cent pure, being really prussic acid, less than three-fourths as heavy as water.

It is a colorless fluid and so innocent of harm that the writer dipped his hand in it as it flowed from the tank into the final container or drum. It is harmless to the flesh if one has no cuts, but the gas arising from the wet hand might easily overcome the handler or a bystander. The danger comes when a considerable surface is exposed so that gas is given off in great volume. For this reason it is forced under the fumigating tents through spray nozzles and is instantaneously gas. The gas is inflammable and fire must be kept away from it. Safety lies in keeping the liquid in a solid body at low temperature, and greatest danger comes from vaporizing with heat.

Now this liquid hydrocyanic acid is not a new thing. It has been known to chemists for many years. It is the practical use of it that is new and it has already revolutionized fumigation practice. The discovery of its present use was as simple as its manufacture. It all came about accidentally and its value was at once recognized by William Dingle of the firm of Dingle Bros., both members being experienced fumigators. William Dingle was fumigating a few orange trees he could not closely approach and was forcing gas through 100 feet of garden hose. When through he dropped the loose end into a barrel of water and "just for devilment" turned on a little gas to see what it would do. As it did nothing he went home, and the next morning on handling the hose noticed some water running out that smelled very strongly of gas. This he ran into a couple of small bottles and took to a chemist for analysis. The chemist told him it was hydrocyanic acid and a dangerous material to handle. That is the simple tale of its discovery as related to the writer by Mr. Dingle while on a visit to Dingle Bros.' plant at Azusa.

At this plant the liquid is manufactured as herein related, cooled after distillation and run away to the reservoir tank, from which it is drawn off into drums of 15 gallons capacity, and you haul it away to your orchard. They handle it just like water. The acid runs through a hose dropped into the bung of the drum, the filler merely keeping his nose away from the fumes and screwing the cap on when the drum is filled. All handling is done in the shade and wet cloths are kept over the reservoir tank to keep the stuff cool, being kept wet by a perforated overhead pipe. All handlers of the drums should aim to keep them cool. To allow for heat expansion these drums lack a half gallon or more of being full. But at 96-97 per cent pure it is entirely safe to handle. At 99 per cent pure it would be too dangerous to handle. As it is railroads cannot ship the acid, for if a wreck should occur and the drums be broken the gas would spread even into adjacent buildings and kill all who inhaled it. Yet in the three years of manufacture there have been but two fatalities, both at generating plants. All transportation is by auto trucks, though nearby orchardists haul their own supply, sometimes a single tank, in the family runabout.

Other uses than in orchards are found for it, but in orchard use it is far more effective and economical than the former gas method. The saving in tents alone is an important factor, for the liquid gas will not harm the finest fabric. To the orchardist it is a source of satisfaction in that he is not burdened with the disposal of residue from generation as under the old gas method. Used for dwelling house fumigation it will not corrode or tarnish nickel and brass. For greenhouse fumigation it is ideal. It is thought that in a diluted form it might be used for sterilization of soils. But it is for orchard fumigation that it is most important, providing a more effective fumigation at lower cost, for much labor is saved under the liquid generating process.

National Federation of Farm Bureaus

California Organizes and Elects Delegates

TWENTY-FIVE of California's 30 farm bureaus have become charter members of the state federation. Some months ago at a conference held in Berkeley, which was followed by a trip almost the length of the state, participated in by farm bureau presidents and farm advisers, together with other delegates, there was begun the organization of a state bureau. This was done by appointing committeemen who have reported a form of constitution and by-laws which was accepted by the recent Berkeley meeting. Officers chosen to conduct the affairs of the new organization are: President, Dr. J. H. Walker, Willows; vice president, J. K. Macomber, Tulare County; delegates to the Chicago conference, at which it is expected a national organization will be perfected, are: Dr. J. H. Walker, Volney H. Craig, Los Angeles County; G. H. Sawyer, Stanislaus County.

The home demonstration work delegates, of which there were an even dozen with one specialist in attendance, held sessions at the same time as the general conference. Reports were made of the work in the various counties.

American Federation

The best statement regarding the national federation is given by its constitution, the first four articles of which are:

Article I—Name

The name of this organization shall be the American Farm Bureau Federation.

Article II—Objects

The objects of this organization shall be to correlate and strengthen the work of the state federation of farm bureaus, to represent and protect the business and economic interests of agriculture and to represent the farmers of the whole nation.

Article III—Membership

Sec. 1. The membership of this organization shall consist of state farm bureau federations and state agricultural associations based on the farm bureau plan when approved by the executive committee of this organization.

Sec. 2. All applicants for membership shall submit to the executive committee a copy of their constitution and by-laws.

Sec. 3. Any member may withdraw in good order from the American Farm Bureau Federation by presenting to the secretary a written resignation, provided that all dues are paid to date of withdrawal.

Article IV—Membership

The governing body of the organization shall be composed of a board of directors selected by each of their respective state federations which shall meet once a year. Each state organization qualifying for membership shall be entitled to one director and an additional director for every ten thousand or major portion thereof, of paid-up members in the county farm bureaus affiliated with the state organization.

The office of the federal organization, or rather the organization to be, sends out a statement from which we quote:

"This new farmers association, which is planned to cover the entire United States and represent agriculture in a more comprehensive way than ever before, will be financed and controlled entirely by the farmers themselves. It will be a federation of the various state associations which are in turn based on the county farm bureaus.

"There are at this time 23 such state federations organized. It is thought that nearly all these state associations, representing at least 225,000 of the 450,000 of the farm bureau members in the United States, will come in as charter members. An active campaign will be planned at the November meeting to organize the other states of the Union.

"The national federation will be financed, according to the tentative constitution, by a membership fee of ten cents from each individual farm bureau member for the first year, 25 cents the second and 50 cents the third. The suggested membership fee for the first year was purposely kept low in order that the newly organized states, many of which are as yet poorly financed, may not be kept out.

"The federation will not lack for funds the first year, however, if the plans of the organization committee are carried out. These plans call for a guarantee fund of close to $200,000 a year. As much of this amount as may be needed will be used to carry on the work on a big scale from the start, until the amount of money coming in from dues becomes sufficient for that purpose.

"Each state will be asked to secure pledges to the guarantee fund to the amount of $300 a year for three years for each county farm bureau affiliated with the state federation.

"Keynote addresses at the Chicago meeting, November 12 and 13, outlining the objects and purposes of the new national association, will be made the morning of November 12 by Harvey J. Sconce, of Illinois; S. L. Strivings, of New York and J. R. Howard, of Iowa. This will be followed by a report of the organization committee, adoption of a constitution, a general discussion of the work of the national federation and election of officers. Each state will have one vote at this organization meeting, but may send as many delegates as desired."

"I have great faith in the future of this new association," said Chairman O. E. Bradfute. "The fact that it is based on the county farm bureau means that it will be a solid, substantial, representative organization composed of the best farmers in the United States. The launching of this association at Chicago in November will be a great day for American agriculture."

POTATO GROWERS' TRIP

On next Monday, November 3, potato growers of Southern California are invited to join the trip planned by the Los Angeles County farm bureau. Start will be made from the McSweeney ranch on the road from Los Angeles to El Monte. Stanley S. Rogers of the state university; H. A. Hyde, potato seed specialist of Santa Cruz County; H. J. Ryan of the Los Angeles County horticultural commission; D. B. Mackie of the state department; D. G. Milbrath, plant disease specialist; Geo. Peters, and others will join in the program which will be held at various points during the all day trip. After an informal meeting on the McSweeney ranch and trips to near by potato sections, lunch will be served at El Monte, after which the entire conference will take a trip to San Fernando Valley, where on the Radcliff place near Burbank a short program will be held at 1:30. Other potato growing sections of the San Fernando Valley will be visited.

FARM BUREAU ANNUAL

The annual meeting and conference of the Los Angeles County farm bureau will be held in one of the groves of the Santa Anita ranch east of Pasadena, Wednesday, November 5. A short morning session will be held about 11 o'clock. At noon there will be basket lunch with hot coffee and doughnuts furnished by the home demonstration division, after which there will be stock judging, general talks and addresses. Addresses will be made by the state leader, B. H. Crocheron, and President Volney Craig, who will give report of the work of organization of the state farm bureau, also the work hoped to be accomplished by the organization of the national association. Other addresses will be made by Senator Cogswell, Carlyle Thorpe, G. Harold Powell and others.

Agricultural News Notes of the Pacific Coast

Northern California

Tehama County has a cucumber farm.

Next year Chico will have one hop ranch of 992 acres.

Cloverdale has shipped 30 cars of wine grapes to date.

Sacramento Valley hops have been sold for 77 cents a pound.

Sonoma County will have a total of 19,000 tons of dried prunes.

Yuba and Sutter Counties have shipped 5,000 tons of raisins.

Lodi Tokay grapes sold last week for the high price of $2,918 a car.

Japanese ranchers near Marysville grew 45 sacks of rice to the acre.

A 356 acre alfalfa ranch near Redding, Shasta County, sold for $140,000.

The 992 acre Fraser hop ranch in Butte County sold recently for $300,000.

Vacaville has shipped 100 more cars of fruit than up to same date last year.

Winesap apple trees at Sonora now 50 years old bore 25 boxes each this year.

Milk in San Francisco has been raised to 15 cents a quart or ten cents a pint.

A large walnut crop is being harvested near Sycamore in Colusa County.

Three new townsites are to be laid out in Sutter County this coming spring.

The big new rice mill at Colusa started on October 25. Capacity 6,000 bags daily.

A new rice thresher operating near Chico turned out 220 sacks of rice in 40 minutes.

The Spreckels Sugar Company has leased 2,000 acres near Yuba City for sugar beets.

A large acreage of broom corn is being harvested around Biggs, in Butte County.

E. C. Horst, Sacramento Valley hop grower, has several thousand acres in the bloomin' 'ops.

In the Haywards district 150 tons of apricots were dried and brought 30 cents a pound.

From 49 acres on the Adams ranch near Woodland, Yolo County, $60,000 worth of tobacco was taken.

The warehouse of the Oakdale, Sacramento County, Almond Growers Association was destroyed by fire October 14.

Because of shortage of cars the Earl Fruit Company has brought suit at Sacramento against the railroads for $123,921.

The San Francisco District Federation of Women's Clubs has endorsed a move to secure a national park in the redwood district of Mendocino County.

Two hundred acres of wild land near Yuba City sold last week for $100,000, the highest price for uncultivated land ever reached in Sutter County.

Ukiah business men state the Indians in that part of the state have been deprived of their best lands, have no tools or equipment and are on the verge of starvation.

Central California

A milk powder factory to cost $100,000 is to be erected at Modesto.

The citrus growers of Tulare County are forming a protective league.

There are six grape syrup factories now in operation in Central California.

The granite quarries at Madera, closed by a strike, are once more in full swing.

In December Modesto will vote on a $400,000 bond issue for civic improvements.

At a recent sale of a livery stable at Lodi 15 horses sold at an average price of $15.

A successful grape syrup factory is in operation at Woodbridge, San Joaquin County.

The Pacific Rice Growers Association has refused $5.36 a hundred for the 1919 crop.

The grain elevator at Chowchilla, Madera County, was destroyed by fire on October 12.

Fresno estimates its loss from car shortage to be $3,000,000, and for the state $8,000,000.

F. C. Ensign of Terra Bella, Tulare County, sold his Manzanillo olives for $200 orchard run.

There is a marked shortage of grape cuttings at Bakersfield, and none of Thompson Seedless.

Eight creameries of Kings County paid their patrons over $355,000 for butter fat in September.

An apple grower at Three Rivers, Tulare County, sold his crop from seven acres for $1960, or $280 an acre.

A. P. Stone of Denair, near Turlock, has a pumpkin weighing 180 pounds, and seven feet in circumference.

A jury of 12 women at Hanford tried a Chinaman for conducting a gambling house. Of course he was guilty.

M. A. Boulware of Terra Bella, Tulare County, picked eight boxes a tree from his eight year old Valencia orchard.

Kelseyville reports a garden growth of nutmeg trees, but these trees are strictly tropical in their requirements.

Pleyto in Monterey County has a sunflower more than 12 feet high with a flower four feet in circumference.

At the Poland China sale at the Marsh ranch near Modesto, 60 head brought about $10,000, averaging over $160 each.

The owners of the new eucalyptus mill at Pixley have bought an 800 acre grove of eucalyptus trees from J. J. Kelly.

A grape grower at Stockton was fined $75 for shipping grapes of which more than 10 per cent was infested with insects.

The California Packing Corporation will erect at Isleton, on the Sacramento River, what will be the biggest asparagus cannery in the world.

Farm bureau auction sales will be held in Kern County as follows: Wasco, November 1; McFarland, 8; Bakersfield, 15; Wasco, December 6; McFarland, 13; Bakersfield, 20.

Southern California

Brawley has a strike of cotton pickers.

Santa Ana, Orange and Tustin are talking of consolidation.

The ridge route through the Tehachapi will be open November 10.

Navels at Pomona will be ready for picking the first week in December.

Imperial County is paying a bounty of ten cents each for gopher scalps.

Ontario claims the largest quince ranch, with 25 acres of bearing trees.

The big sugar factory at Oxnard closed on October 25, after a 78 day run.

W. T. Thompson of Riverside has grown 10,500 cases of sweet Spanish onions.

B. F. Thorpe of Covina purchased a 20 acre addition to his home orchard for $50,000.

A new artesian well in the Camarillo section of Ventura County has an 80 inch flow.

Short staple cotton is bringing 38-39 cents in Brawley; Durango cotton brings 42-43 cents.

The 80 acre tract in West Highlands, known as the Army tract, sold last week for $80,000.

Corona reports that a much larger acreage about there will be planted to sugar beets next year.

An electric evaporating machine has been installed in a raisin packing house at Cucamonga.

One car of walnuts shipped from Pomona last week was valued at $10,000 and another at $9,200.

Ten acres of 11 year old Valencias and lemons sold at Whittier for $60,000, said to be a record price.

Fifty acres of rice near Buttonwillow, Kern County, is being harvested, the first grown in that district.

The Hemet-San Jacinto Growers' cannery handled 2,737 tons of apricots as against 1,604 last year.

The Cucamonga Fruit Growers' Association shipped 32,330 boxes of citrus fruits during the past year.

Arlington, Riverside County, has a sugar cane field of 35 acres from which 7,000 gallons of molasses is expected.

The new Calvada date packing house at Coachella, with a season capacity of 50,000 pounds, is now in operation.

Thirty head of pure bred dairy stock from Wisconsin arrived at Bishop last week. The majority were registered Holsteins.

The Riverside Beekeepers' Club offers a reward of $25 for the arrest and conviction of anyone setting fire to a bee range.

The 30 acre Dungan orchard at Garden Grove sold for $75,000. Fourteen acres were in Valencias and 14 in walnuts.

On the Patterson ranch near Oxnard, Ventura County, some sugar beets run as high as 16 tons to the acre and up to 22 per cent of sugar.

Sorghum mills are now operating at Buena Park, Riverside, Bakersfield, Pomona and in various other parts of the state. Manager H. W. Hall of the Pomona plant informs us that that mill has a capacity of about 10,000 gallons this season.

The Coast and General

The apple crop of Idaho will total 4000 cars.

The Yakima Valley, Washington, will ship a total of 8,500 cars of apples.

Joseph Morrier, of the Yakima Valley, sold ten tons of hops for 60 cents, a total of $12,000.

Rainfall over the stock range section of Arizona in September was the heaviest in 22 years.

Forty-five carloads of grapes were shipped this year from the Yakima Valley, Washington.

George Watt of Klamath Falls, Oregon, recently purchased the 1,480 acre Cox ranch for $100,000.

The Dalles, Oregon, authorities have a heavy battle on with the destructive elm tree beetle.

Fruit product plants in Oregon are paying $15 a ton for apples which do not grade for commercial packing.

Knud Knudson, Chandler, Arizona, bought 45 acres for $500 an acre. Four years ago it sold for $100 an acre.

Five land purchasers at Hood River, Oregon, will put in 90 acres of strawberries this coming spring.

T. L. McCutcheon sold cotton to the Globe Oil Co., Yuma, Arizona for 44 cents, a record price for this season.

There are more than 50 schools in each of several counties in Washington without teachers and no applications filed.

The Walla Walla, Washington, Commercial Club seeks to place a farm name over the gate of every farm in the county.

The cannery of the Eugene Growers Association at Eugene, Oregon, is canning apple cider to the extent of 10,000 gallons.

The total value of the prune crop in Clarke County, Washington, for the present season is estimated at more than $2,000,000.

The Washington Cooperative Egg and Poultry Association, recently organized, has 511 members. Headquarters at Seattle.

A crop of 55 pounds of honey was the average from 1100 hives near Yakima, Washington. It sold for 20 cents, or $12,000.

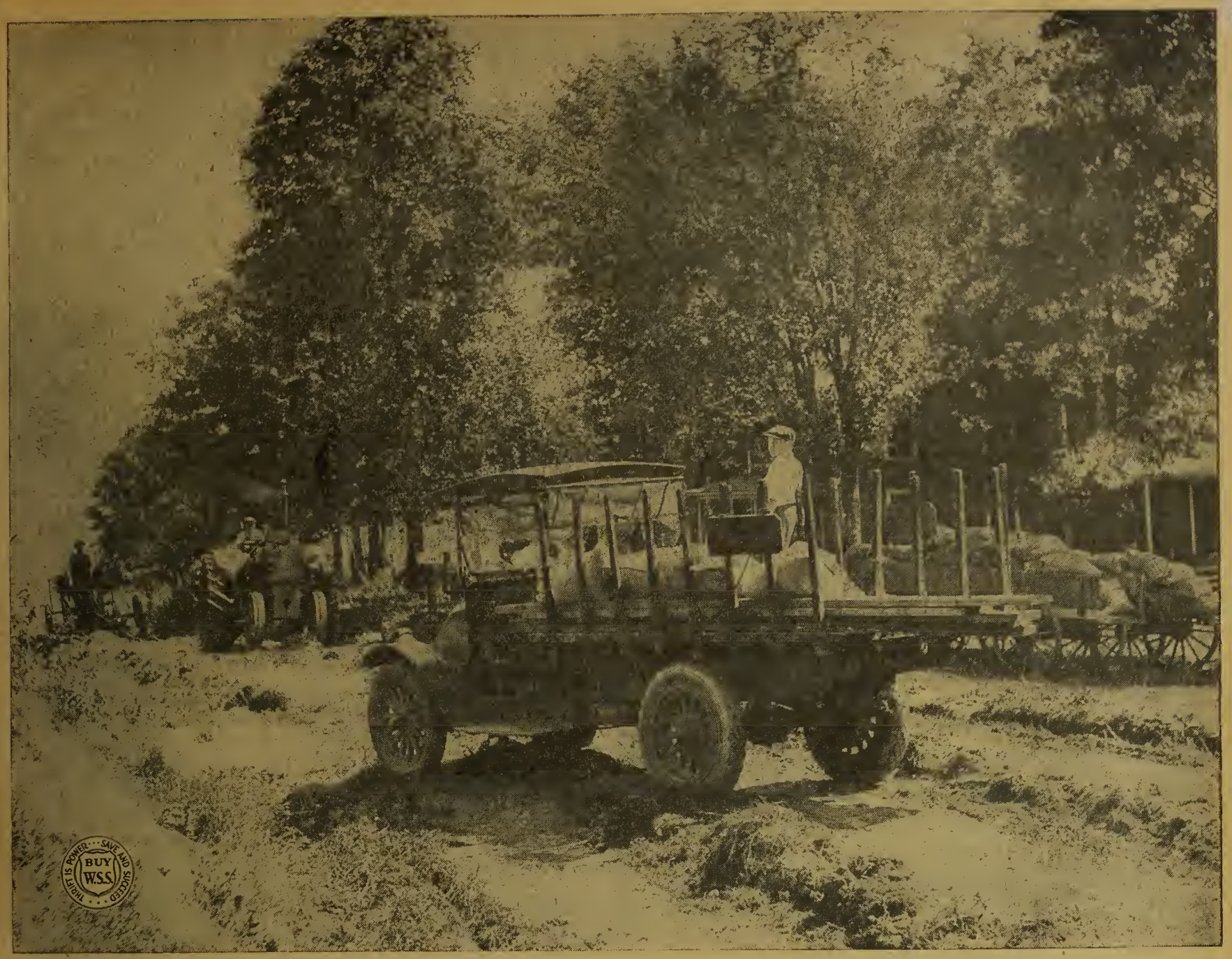
The Buster Brown orchard in the Wenatchee Valley, Washington, has installed a moving picture theater for its 210 employes.

The Oregon hop crop this year is only one-third as large as it was before the war, or 40,000 bales. Present price is 53 cents a pound.

P. T. Briggs, Nehalem, Oregon, has a Durco-Jersey sow that bore three litters of pigs last year and three this year, a total of 76, and not one was lost.

The Spanish Valencia orange crop is but two-thirds of normal, said to be due to lack of fertilizer supplies on account of the war. No oranges were shipped to the United States.

In spite of the fact that the number of dairy cows in the Salt River Valley of Arizona is considerably less than a year ago, owing to the large acreage in long staple cotton, a new creamery is being established in Phoenix.



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Mr. Emmerton's experience, however, equally emphasizes the advantage of the Goodyear Cords over solid tires on the local clay roads, noting that the pneumatic-shod truck overcomes conditions impassable to solid-tired trucks.

Still another important significance attaches to his statement that the pneumatics are regarded with growing favor in the surrounding community because their cushioning action saves roads.

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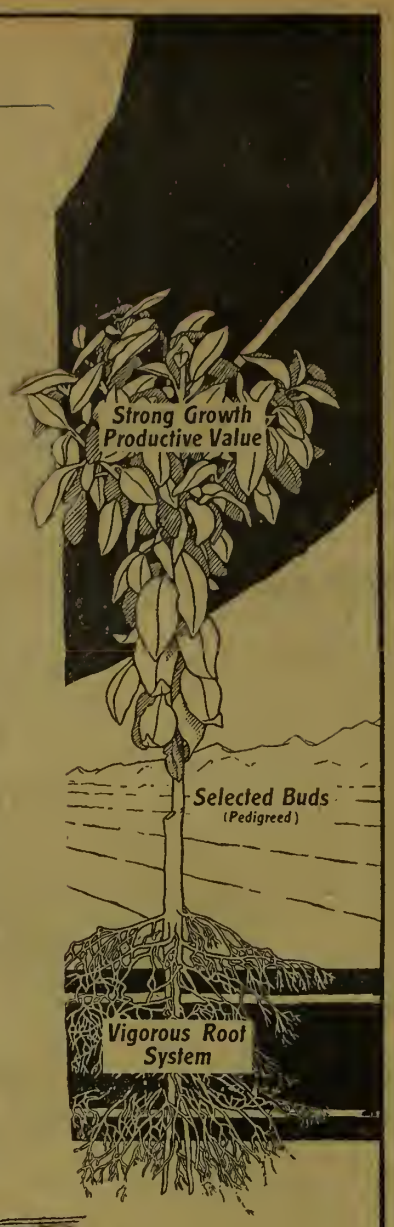

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Tropical Fruits in California

By Ernest Braunton

THE term "tropical fruits," is often a misnomer so far as the hardiness of plants is concerned, for we grow plants from well within the tropics that are yearly visited by frosts on their native heath. Even at the equator frost forms at an elevation of 18,000 feet, while in some of the Hawaiian group, frost is found at a little more than 4,000 feet. So that it is possible to obtain plants from the tropic zone that are subject at all seasons to a lower temperature than prevails throughout California.

Many of our so-called tropical fruits grow on mountainsides or in mountain valleys, and in tropic lands the temperature drops four degrees with every 1,000 feet of elevation. Bogota, Colombia, has the most uniform climate of any city in the world, the average daily temperature being 60 degrees Fahrenheit throughout the year. The Feijoa Sellowiana was sent to us as a tropical fruit, yet it is hardy in Oregon. The best Guatemalan avocados occur at 6,000 feet, and that is the reason these fruits thrive so well in California. The strawberry guava is perfectly hardy here, though native to Brazil, and the Mexican white sapote is another example of a hardy tropical fruit.

So let us lay aside our fears and suspicions when the term tropical fruits is used, for many of them are as hardy as our native live oak. Even the olive is considered a tropical fruit. In California we have at all times some tropical fruit that is high in popular favor until it becomes well established, after which the public becomes eager for a new fad. Just at present the avocado is most in popular favor, and the writer believes it will be followed by the mango. The avocado is now firmly established as a commercial fruit, and hundreds of acres are just coming into bearing in the south end of the state. No one has yet planted a mango orchard, but when we find what are the hardiest varieties, a large acreage will be planted to them. Many regard the mango as next in importance after the banana and pineapple. Others consider the mango the finest of all tropical fruits, but there is a great range in flavor and texture. Some are tough and fibrous with a flavor strongly turpentine, while others are delicately tender and of a flavor unexcelled. More than 500 varieties have been listed in India alone.

Coconuts, pineapples and bananas are crops that will never be grown in commercial quantities in California. The two latter have fruited freely in many sections, but none of the fruits were of market value. It is possible that papayas may be grown in favored spots, but it is quite doubtful if they would prove good enough for market. It is certain we shall eventually have more guavas, even if we have to produce hybrids with the more common one. The custard apple or cherimoya has been sparingly grown in California for a half century, but is still rare for the reason that the best varieties have not been propagated by budding and many of the seedlings are very poor in flavor. The best are nothing short of luscious. A great future is in store for the eugenias, of which we grow many edible species, and some of these are much prized by their owners. Two passion fruits are grown here, of which many people are fond. The writer has eaten a half dozen large fruits at one time and relished them very much. The carissas in two or three species are sure to be extensively planted when once their excellence becomes a matter of common knowledge. The jujubes are firmly established in all parts of the state though as yet little known. The pistachio and Queensland nuts are two whose popularity steadily advances, and these are but a few of a great number of so-called tropical fruits that will one day become common in California.

Other Things Tropical

Matay or Paraguay tea is a common beverage in South America, Brazil alone exporting 150,000,000 pounds annually to Argentina. The writer has bought it in Los Angeles and likes is very well. The leaves are from a holly which is hardy in the warmer parts of California. The chayote is becoming widely known and extensively planted and may now be found in all vegetable markets. The udo, dasheen and taro have not yet been recognized commercially though somewhat planted for private use.

For a score of years the writer has advised planting the New Zealand flax for fiber, and it is gratifying to learn that a small acreage has been planted in California. In its native county it grows right down to the ocean spray, though extending far inland. A few years ago fine mature plants of the sisal hemp, a species of century plant, were growing in Elysian Park, Los Angeles, proving beyond a doubt that this valuable fiber plant will thrive in the warmer parts of the state. They were as large and robust as those pictured on tropical plantations. Roselle, a species of hibiscus, the calyces of which are used for jelly, has been planted in California for a score of years, but is only now becoming common. In Egypt the well known historic papyrus is being harvested for paper making and it may yet be planted in local swamp lands now valueless or we many even grow the favored Chinese rice paper plant commercially, for it makes the finest of paper. Nothing is more certain than that bamboo will be grown in large plantations in a few years. In a few spots in the state there are already plantations that cover a few acres. No plant may be put to a greater variety of uses, and of late years the tender tips, imported in cans from China and Japan, have been served in our best hotels, being preferred by many to asparagus. More than a score of species are grown throughout the state and all have proven vigorous. The bamboo has a bright future in California.

THE COMMERCIAL PEAR CROP OF THE UNITED STATES

The October estimate of the commercial pear crop for the United States, made by the bureau of crop estimates through its fruit crop specialists, indicates an increase of about 175,000 bushels over the September 1 estimate. The crop in California remains the same as last month, but the crops in Illinois and New York have shown an increase of about 20 per cent. Delaware on the other hand has declined about ten points. The crop of Bartletts in most of the important Bartlett producing sections turned out to be nearly a full crop. Kieffers are very short, particularly in Delaware, New Jersey, Michigan, Illinois and the upper Hudson Valley.

The crop for the United States is estimated at 8,601,000 bushels, or more than 1,000,000 bushels over the crop of last year. California produces practically one-half the entire output of the country, or, to be more exact, her output this year will be 4,272,000 bushels. The only other large pear producing state is Washington with 1,600,000 bushels.

ARGENTINE SUGAR

Word comes through the United States consul at Buenos Aires that the absence of frosts has brought the present sugar crop up to a high figure and that there will be a surplus over what is necessary for home consumption until the next crop is available, of 80,000 to 90,000 tons. This outlook led to a decided drop in sugar prices in all classes at Buenos Aires. Refined sugar in bags dropped from $3.18 to $2.75 in a few days and other grades dropped as suddenly. This drop was really caused by the government prohibition of exportation, though all the world is short of sugar. No relief is in sight until Cuban sugar comes on the market in December.

GOOD FOR NEB

Old Nebuchadnezzar, they tell,
Ate grass like a dumb anlmell;
When he struck a thistle
It made the king whistle;
But he beat out the h. c. of l.
—Houston Chronicle.

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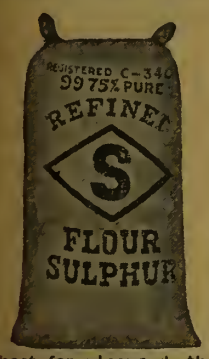

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THIS MONTH IN ORNAMENTAL GARDEN IN NORTHERN CALIFORNIA

By A. R. Gould

THE rainfall last month, although slight, has helped the lawns wonderfully. They are showing new life and the wonderful green color is returning. Arrange all planting schemes according to carefully studied plans and start in at once to prepare the ground. It will soon be time to fill vacancies in the groups of shrubbery or add to the collections already on hand. Some contrive to make their collections of flowering shrubs, roses etc. as complete as possible with those most suited to the locality, and with that end in view it will soon be time to survey the lists from the nurseryman. We hope next month to give a few selections which might prove helpful to those desiring to make more extensive plantings. The leaf soil heap can this month also be added to with considerable advantage. Leaves and all such refuse from the garden should be collected and stacked in a heap to rot into the finest and richest soil of its kind, and which will be worth money to the grower. We may expect severe weather during the coming weeks, hence it will not be possible, except under glass with heat, to raise any tender plants. However, there are many hardy subjects we can give our attention to which will brighten our gardens through winter and spring.

All tender water lilies should be removed from the pools and stored in a protected place for the winter, and dahlia tubers, begonias (tuberoses), etc., should also be dug up and stored in sand for the winter, care being taken to label them for color and type. Keep them in a dark dry place. Seed of annuals and perennials should be collected, and among these we might mention linnias, gaillardia, delphinium, hollyhocks, marigolds, cosmos. asters, stocks, etc. Seed of dahlias and gladiolus may also be secured now. Propagation by cuttings of roses, hydrangeas, etc., may be carried on and most perennials increased by root division.

Gladiolus

The summer flowering types being past, only the dry flower stalk remains, and after the seed has been taken out the stalk can be cut down and the bulbs may either remain in for another season or be dug up and stored. Seed of those types recently mentioned may be sown now in shallow boxes of rich soil, and they will in a year or two produce fine flowers. Now is the time to plant the early flowering types which bloom in May, and among the best are the Bride, pure white; Peach Blossom, pale rose, and Ne Plus Ultra, large rosy red. These look effective planted in groups. Plant one and one-half inches deep and two to three inches apart.

Iris

These popular hardy flowers are to be had in many shades, ranging from yellow and white to deep purple and lavender, and they may be planted three inches deep and nine inches apart in groups of solid colors or they may be planted in the wild garden under the trees or as an edging to the garden paths under the pergola. The following are some of the varieties we can recommend: Isolene, Caterina, Black Prince, Blue Jay, Fairy, Honorabilis, Darlus, Lohengrin, Madame Chereau, Queen of May, Pallida Dalmatica. These range in height from 18 inches to two feet. Iris gigantea, producing creamy white and orange yellow flowers, grows four feet high and flowers in May. This should be in every garden; also Iris Foetidissima, the open seed pods of which are very attractive, having bright red berries.

Liliums

These are wonderful in form and color, and most of the species are from Japan, hence they are popularly called Japanese lilies. However, we can boast of one or two, as they are natives of California. Lilium tigrinum is an example. The following is a good selection and should be ordered at once for early delivery: L. Krameri, pink, very fragrant; L. auratum, golden rayed lily; L. rubrum magnificum; L. speciosum album; L. candidum, Madonna lily; L. giganteum, Easter lily. These may be planted in five inch pots of rich soil or in the garden eight inches apart and four inches deep. They may be planted between shrubbery such as rhododendrons.

Ranunculus

These charming flowers grow about ten inches high and are grown from small tubers which should be planted one inch deep and six inches apart. They may also be raised from seed sown in boxes of light soil. The best varieties are Merveilleuse, Romano and Seraphique, in colors of yellow and scarlet.

Spring Flowering Subjects

Plant out alyssum saxatile, aubretia, pansy, viola, myosotis, bellis perennis, violet, wallflower, primula.

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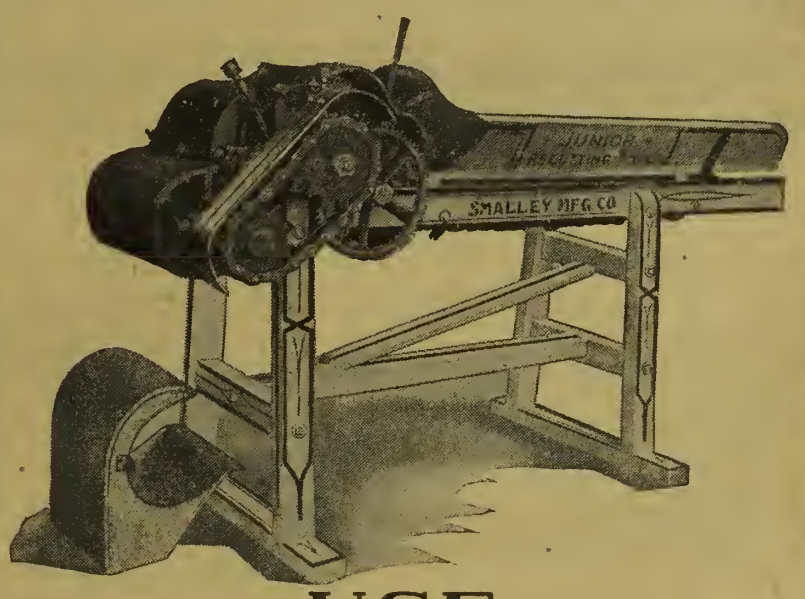

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Winter Rhubarb

By Ernest Braunton

DURING the great world war the rhubarb industry enjoyed a slumber, for what good is 'barb without sugar? And sugar could not, at times, be obtained for any price. But now that war "has smoothed his ruffled front," a large new acreage is being planted.

In the meantime the method of planting has been changed by the best growers. Formerly rows were set five feet apart and the plants one and a half feet apart in the rows. This allowed of cultivation but one way and required much hand work in the rows. It also left much soil unstirred. The practice now is to plant rows four feet apart and the plants three feet apart in the row, but also kept in rows crosswise. This allows cross-cultivation in the spring, and the soil is deeply stirred on all sides of the hills. The hand weeding is thereby reduced to a minimum.

While rhubarb may be planted at any time and much of it is being now put out, April and May are the best months. If soil is light and warm rhubarb set out now will give a spring crop. And really heavy soil is not good for rhubarb anyway. J. B. Wagner, one of the heaviest and most successful growers, planted out five acres during the middle of October so no one need be timorous about autumn planting.

If the soil is somewhat dry the field should be irrigated within a week after planting, but if the soil is damp it may be left for two weeks. During the summer irrigation should be given every three weeks, as a rule, but soil and weather may both modify the procedure. While commercial fertilizers and nitrate of soda are much used, there is no material so good as horse manure, and if sufficient of this may be given no other fertilization will be necessary. On the Wagner fields 300 pounds of nitrate of soda has been used to the acre. This is dropped by hand into furrows plowed close to the rows.

While rhubarb is picked over a long season in California, the big crops and the big prices are obtained from February to June. Of course canning of rhubarb, which is a rapidly growing industry, can only take place during the season of heavy production. From spring planting, if weather conditions are favorable and good care is given, a fine crop may be harvested at four months from time of setting the roots. The major production is reached the third year after planting and the period of decadence is not known for rhubarb has no old age. When the roots get so large as to prevent proper cultivation it is doubtless better to reset, though the oldest fields are producing the biggest crops.

Summer rhubarb is not much considered though a small acreage is grown for commercial purposes. The winter rhubarb industry in Southern California is confined almost entirely to Los Angeles and Orange Counties, in which the total is about 150 acres. Nearly all of this acreage is owned by members of the Southern California Rhubarb Growers Association with headquarters at the Los Angeles public market, and in season an office at the Arcade Station. This organization ships the product under the name of Giant Strawberry Rhubarb, in boxes the net weight of which is "30 pounds or over." The recovery from the lull of war times was so rapid that last season was the best ever enjoyed by the association, and the members are looking forward with enthusiasm to the coming one, believing it will also prove "the best ever."

VAST SUMS FOR ROADS

A survey of the highway bond issues and movements looking toward improvement in highways during the next year indicates that America has fully awakened to the need for more and better transportation facilities. Notwithstanding California's activity along this line during the past few years, she is still well toward the front in the matter of bond issues as compared with other states. Texas, the biggest state of all takes the lead in this good roads movement, as indicated by the extent of her bond issues. That state now proposes to issue $75,000,000 worth of bonds for good roads, or rather, on November 4, next Tuesday, will vote upon such issues. The various counties of the state have already authorized an issue of $73,532,000 and other counties propose soon to vote upon issues aggregating a total of $22,790,000.

Another state which surpasses California is Illinois, which has the greater proportion of her $60,000,000 bond issue yet to spend. This $60,000,000, with appropriations made by the various counties, amounts to $62,615,000, while proposed issues to be voted upon between now and April, 1920, will aggregate another $11,398,000.

Kansas is taking steps to vote upon a $60,000,000 bond issue, but this will not be until 1920. Wisconsin will soon vote upon a $50,000,000 bond proposition, while various counties contemplate $24,000,000 additional. Counties in that state have already authorized issues to the total of $12,920,000.

Arizona does not contemplate immediate state issue, but various counties will soon vote upon issues to the extent of $10,750,000, and Maricopa County has already authorized, in May of this year, an issue of $4,000,000. Oregon recently authorized a state issue of $10,000,000 and county issues of nearly an equal amount. The state of Washington will vote during the present month on an issue of $30,000,000; county issues already authorized during this year aggregate $7,875,000.

California's $40,000,000 issue was almost unanimously voted on July 1 of the present year, and counties of this state have authorized during the past 12 months $17,530,000 in bonds, while other counties propose soon to issue nearly $6,000,000 more for good roads. The issues of the various counties in the state within the past 12 months are as follows: Contra Costa, $2,600,000; Fresno, $4,800,000; Imperial, $1,500,000; Merced, $1,250,000; Modoc, $400,000; Napa, $500,000; San Francisco, $924,000; Santa Cruz, $824,000; Sonoma, $1,640,000; Sutter, $810,000; Tehama, $607,000; Ventura, $580,000; Yolo, $1,000,000.

SOIL SURVEY MADE IN LOS ANGELES DISTRICT

A survey of the soils in the Los Angeles area has been made and report is now published by the federal department of agriculture, with colored map of the area showing approximate location of farms and extent and distribution of the various soil types. The report contains 78 pages of text describing the various soils and discussing their capabilities. It also includes a brief historical and geographical sketch of the region, together with statistics relating to climate and farm practices. Copies of the report may be had free on application to United States Department of Agriculture, Washington, D. C.

CALIFORNIA ONION CROP

The total acreage of late onions in the state is estimated to be 6,570, but 300 acres less than that of 1918. In addition there are about 1,700 acres in the delta district that are grown under contract with seedsmen. The average yield per acre is about 363 bushels.

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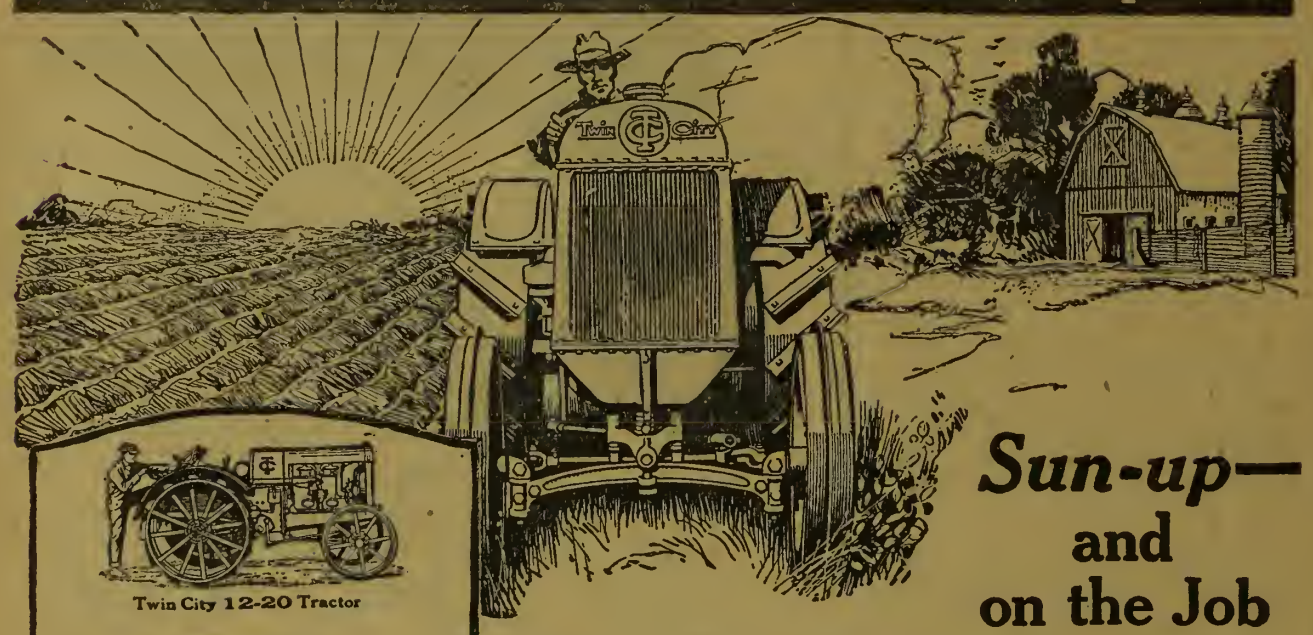
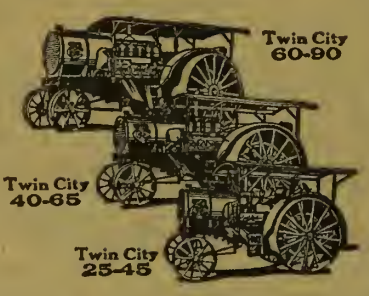


Twin City 12-20 Tractor



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12-20 Kerosene Tractor with 16-valve engine

Solving the Hauling Problem

By James De Camp

IN these days of conservation and economy many agriculturists who feel the need of motor truck equipment are struggling along with horses, trailers attached to the family touring car, and other makeshifts.

With the bank balance and expense account running a dead heat that precludes the purchase of a brand new truck the situation may look discouraging. But there yet remains an inexpensive solution of the hauling problem through the remodeling of suitable cars to be found in the second-hand markets.

Despite the weary adage which tells us that "beauty is only skin deep" the public continues to buy used cars almost solely on the basis of external appearance. Take a salesman of second-hand cars out to lunch, regale him with a succulent T-bone, plant a fat black cigar in his map and delicately pilot the conversation toward the secrets of the trade. You will learn that a slick top and slippery finish predominate in determining the valuation of a car, that a shiny coat of paint is more desirable than mechanical perfection, that the public buys with hardly a glance under the hood.

There are for sale hundreds of cars capable of rendering the best of service which, because of obsolete body design, lack of a self-starter, poor finish, or some such minor handicap can be bought at most reasonable prices. Almost invariably these creations of more remote years possess the qualities of sturdiness and power needed to cope with the hauling and marketing problems of the farm.

The work of remodeling can be accomplished by the rancher himself or with the aid of a practical carpenter. Usually the driver's compartment may be left intact. With a little ingenuity the old top and side curtains may be trimmed to measure and with the rear bows and back curtain will serve as a satisfactory cover for the operator's seat. Remove the remainder of the top and keep it for a hood cover in wet weather.

The tonneau is easily detached, the back seat often proving useful as a porch seat or to lounge upon in the arbor or some shady nook. Should the gas tank be mounted in the rear time and bother will be saved by transferring it to the compartment under the front seat, since it is highly probable that the finished truck body will project so far over the back axle as to make the tank inaccessible.

Selection of the type of body depends, of course, upon the character of the work to be done. Light hauling, such as the handling of dairy products, can be accommodated by a light express body without extension or bracing. If heavier duty is contemplated or greater capacity desired the nearest blacksmith will usually prove competent to lengthen the frame and install auxiliary braces.

In the larger cities there are many plants devoted exclusively to body building, while hundreds of second-hand bodies of every conceivable kind may be picked up at ridiculously small sums. The agriculturist who understands the elements of carpentry should be able to do the work for himself with a small investment in lumber, bracings and stout bolts. Numbers of truck attachments are on the market for the homely flivver and some are even adaptable to larger cars.

In operating the homemade motor truck the main pitfalls to avoid are overloading and unreasonable speed. Strain on the transmission and chassis will be avoided by using the low and intermediate gears on grades instead of calling upon the reserve power of the motor to carry the load over on high. In descending hills shift to intermediate or low and force the compression to shoulder part of the strain of holding back. Remember that you will usually be carrying a load heavier than that for which the brakes are intended and accustom yourself to a wider margin for stopping or slowing down.

If overhauled with reasonable thoroughness the power plant should stay on the job with nominal upkeep expense. Older cars demand plenty of oil; not the thin, green tea variety, but heavy motor oil with body enough to afford real protection for bearings and wearing surfaces. This variety of oil is commonly designated as "Eastern" although several California refineries put out a product with similar qualities. Lighter oils can be bought for about half the price but will inevitably cause disaster.

The starting systems on cars built several years ago are usually a source of annoyance. If the ignition system includes a good magneto you will avoid much expense and exasperation by sidetracking the starting equipment with its storage battery and generator. "Winding her up" is good exercise, especially on a frosty morning, but the process is positive and does not rely on the expensive peculiarities of starters and batteries manufactured in the experimental days of the self-starting regime.

Tires should never be allowed to deviate from the maximum pressure allowed for their size. If heavy loads are carried regularly oversize casings should be used. In some instances it has been found profitable to equip the rear with solid tires, although this change usually entails the purchase of another pair of wheels.

The man of moderate means and average ingenuity can provide himself with a dependable light truck for from five to seven hundred dollars by the remodeling method. If care is used in handling the vehicle and abuse avoided it should render several years of service. A weekly inspection for loose nuts, empty grease cups, worn insulation on the wiring and such minor matters will frequently prevent hours of delay on the road.

A man's house is his castle. One is frequently judged by the character and appearance of his home and its surrounding grounds. But in the case of farms and ranches the public often forms its ideas from the neatness of the motor equipment which the establishment sends to cities and markets. Paint and psychology have become indispensable factors in modern business. Several dollars invested in good quality paint of appropriate color will make your remodeled truck a credit to yourself and the community. A tidy professional job of lettering on the body, calling attention to the name, location and nature of your place, will yield heavy dividends in publicity and prestige.

CANADIAN SOLDIERS

The general secretary of the British Columbia Returned Soldier Commission writes the Cultivator that inasmuch as many Canadian soldiers have scattered and many are in the United States, that we cooperate in informing these men that they are entitled to a war service gratuity which may be secured by making application to the B. C. Returned Soldier Commission, Parliament Bldg., Victoria, B. C. The secretary writes:

"Under the original order in council dealing with the payment of war service gratuities, men who did not see service in France and men who were discharged previous to the signing of the armistice on November 11, 1918, were not entitled to participate in same. Under a recent order in council this ruling has been changed and men who come under the above classification are now entitled to payment of gratuity."

PHILIPPINE OPPORTUNITIES

The bureau of foreign and domestic commerce reports that the excellent opportunities in cocoanut farming are attracting increased capital to Mindanao Province. It is said that it is possible, after the first six months of cultivation, to make the return from corn grown between the rows of cocoanuts sufficient to cover all expenses of opening a plantation. It is further stated that a profitable fish canning industry might be established in Abra Province.

INCREASED CELERY ACREAGE

The acreage to be planted to celery in this state for the 1919-20 season promises to be nearly 1,000 more than last season. This year's estimate is 3,800 acres, while that of last season was but 2900, though in 1917-18 it was 5500 acres.

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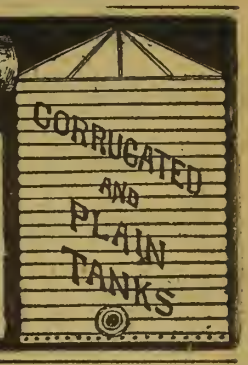

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November in the Vegetable Garden in Northern California

By A. R. Gould

NOW that the winter months are here and the days shorter working hours in the garden will be limited, but our planting will also be much shorter and we now have to get busy clearing the plots for early spring use. Therefore soil preparation will be in order and most of the plots recently cleared off, such as those occupied by tomatoes, melons, cucumbers, beans, etc., will greatly benefit by the application of lime (air slaked). The effect of lime on soils is very interesting and it has now come into more general use in this country although in Europe it has been in common use for many years. Lime acts on vegetable matter, setting free ammonia, water, nitric acid and carbon dioxide; it neutralizes organic acids, thus sweetening the soil; it opens up heavy clay soils, while on light or sandy soils it binds the particles together and makes them more retentive. Lime has a tendency to sink in the soil and Darwin has shown that the action of earthworms buries it and it is best to apply small doses of lime at short intervals rather than large doses at long intervals. The quantity to apply will of course depend upon the actual condition of the soil, but generally speaking eight to ten hundredweight per acre applied yearly will give good results. Slaked lime has been found effective in checking some fungoid diseases the spores of which usually winter in the soil. As to methods of applying it may be spread evenly on the surface of the soil and thoroughly mixed in the plot being prepared. It should be noted that while lime is a plant food in itself it will not supply every need but it acts on the humus and makes it available also for plant food. Dig in all vegetable matter but remove all diseased fruits of tomatoes to prevent further trouble as these spores quickly spread.

Peas

This is one of the hardiest crops we have and we can sow almost any time now the following varieties: Extra Early Blue Bantam, very productive, tender and sweet, dwarf vine; Alaska, an extra early, used largely for canning, will stand lots of water. Little Marvel, dwarf and very prolific. Thomas Laxton, an early tall variety, requires staking. Have the ground well cultivated before sowing in shallow trenches. The soil should be kept fairly moist and only the best seed used. The dwarf varieties can be planted in rows one and one-half to two feet apart and the tall varieties two and one-half to three feet. The birds are usually very troublesome to the young sprouting peas, but arsenate of lead sprayed on the young shoots or dusted in dry form will usually prevent any damage.

Lettuce

Sow for succession in well manured ground Los Angeles, Big Boston and May King, all desirable. These may be sown in rows or broadcasted very thinly.

Onions

Continue to sow early varieties: California Early Red, which will not readily go to seed as is the case with some varieties. Extra Early Pearl, a very mild variety. White Bermuda. It pays to use plenty of manure on the onion seed bed which should have been trenched in thoroughly some few weeks before the seed is sown. Plots used last season for beans will be very suitable for onions. Those who wish to have early onions may also plant onion sets. These sets should be planted in rows 12 inches or so apart. This month the plots for the main crop variety should be well prepared and sheep, horse or cow manure well trenched into the soil. Soot or wood ashes raked into the surface will also prove of value.

Broad Beans

These beans, commonly known as Horse beans, are the hardiest we have and are excellent for table use. They grow from one and one-half to two feet high and should be planted one inch apart in rows two to two and one-half feet apart. The variety Broad Windsor is the best and should be planted this month.

Asparagus and Rhubarb

These are profitable crops and ground may be prepared now for planting next month. Plenty of farmyard manure is essential and it must be trenched in at least two feet deep. We shall deal more fully with this subject in our next month's notes when varieties and planting hints will be given. Existing beds should be forked over.

Carrots

Sow for succession French Shorthorn, Danver's Half Long or Chantenay in rows 18 inches apart. The soil should be well manured and in a moist condition. Keep the hoe busy between those earlier sown.

Cabbage

Plants may still be secured and planted for winter use. Sturdy plants of Savoy variety should be put out 18 to 20 inches apart in rows.

Celery

This will need tying up and the stems should be covered with brown paper to blanch or whiten them. A frequent watering with liquid manure will be very helpful as it will stimulate growth.

Strawberries

Plant out well rooted young plants of Oregon Improved, Malinda and Brandywine. They need rich soil which has been well prepared. Plant in rows two feet apart and plant firmly.

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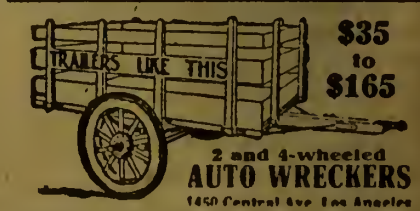

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Bounties

I would like to have a list of all the fowls and animals (such as hawks, other birds, coyotes, etc.), that you can get a bounty on, also the bounty price on each. I hear there is a bounty on buzzards, jack rabbits, squirrels, etc. Is there? Where can you get the bounty money, and what do you have to do to get it? What are the most valuable animals to trap for valuable furs? Do you know of any good trapping places in Los Angeles County?—Subscriber, Porterville.

The state fish and game commission pays bounty of $20 on male mountain lions and $30 on females. No other bounties are paid excepting in indivi-ual counties. In Los Angeles County at the present time no bounties are paid. There are, however, rigid ordinances on keeping pests cleaned up and penalty is prescribed for the farmer whose place harbors them to the detriment of neighboring ranches. Some counties have paid as high as $10 for coyotes. The only way to secure information as to the various counties would be to write to the clerk of the board of supervisors at the county seat, who will also give information as to how to collect bounties. There is no state bounty on hawks or other birds, but there is likewise no protection and their killing is permitted, except that there is a fine of $25 for killing buzzards. We may add, however, that since the prevalence of hog cholera it has been suggested by swine breeders that protection on them should be removed because it has been shown that they are serious factors in the distribution of hog cholera germs. As to trapping in the mountains of Los Angeles County there is but little opportunity. Trappers occasionally secure a red fox, but we question as to their being plentiful enough to make their trapping as a business remunerative.

Gypsum

Is calcium sulphate the same as gypsum? In what way is it valuable as a content of a commercial fertilizer? Will it aid in lightening heavy soils as lime does? Can it have any injurious effects on certain soils?—Subscriber, Porterville.

This question was referred to the U. S. Gypsum Co., and it answers; "Calcium sulphate is gypsum. It releases valuable plant foods which are contained in soils but which are insoluble and consequently not available as plant food until treated with gypsum. Gypsum in itself furnishes sulphur and lime, both of which are essential as plant foods. It lightens heavy soil, preventing it from packing or baking during the hot, dry season. It contains absolutely nothing that would be in any manner injurious to soil or growing vegetation of any kind. It is also sown on land to attract ammonia from the atmosphere.

Trees Not True to Name

Four years ago I set out an almond orchard which came into bearing this year. While there are some of the varieties I ordered there are many that I did not order, in fact they are mixed up with everything, bitter, hard shells, Lefranc and other kinds, I don't know the name of. In my old orchard are two rows of Lefranc which have a flavor something like a peach seed. I have sold these Lefranc almonds a number of times to this nurseryman for nursery stock, and I find a great many of this kind in the young orchard. Those trees have never been budded at all. Here is four years loss of land, taxes on same, interest on money. What can be done in a case of this kind?—Subscriber, Ripon.

It appears from this statement that even seedlings were sold for budded trees. Presumably, if such is the case, there would be no question but that the nurseryman is responsible for serious loss. However, is our inquirer positive that the trees had the best of care and that the bud did not die at replanting time and the seedling shoots come up from the old rootstock? It sometimes happens that after planting time the top or budded tree is crowded out by a more vigorous shoot from the seedling root and the growth from the bud may even by mistake be removed to give this more vigorous growth precedence. It goes without saying that the nurserymen should observe greatest care in giving out only trees true to name, and we believe they make reservation on their billheads that they are not responsible for other than the price charged for the tree if it does not prove tree to name. But if a nurseryman has sold seedlings in place of true budded trees, then his reservation would hardly hold in the eyes of the law.

Growing Guavas

Should guavas be watered and cultivated a great deal? Heretofore we have been away from our ranch and our trees have had wonderfully large guavas on them. This year I watered and cultivated them profusely and the guavas are very small and drop off before they are colored.—Subscriber.

Guavas should be irrigated once a month through the hot weather, but it is not believed much cultivation is necessary as uncultivated plants have been known to yield large crops of large fruits. They need a fair amount of fertilizer. It is possible you watered your plants too heavily in cool weather and this would cause the fruits to drop heavily. Copious and frequent irrigations should be given only in the hottest part of summer.

Budding Stock

What root would you advise for almonds, peach or almond? My soil is loose and sandy. Is almond root more subject to root knot than peach?—Subscriber, Porterville.

Almonds are budded on both stocks but almond stock is preferred by those most experienced. Your soil is ideal for almonds. Root knot attacks both peach and almond and we have no authentic date as to which is more resistant.

GETTING READY FOR ORANGE SHOW

Citrus growers of the state are now beginning to prepare for the National Orange Show, the tenth annual exposition of which will occur in San Bernardino, February 13-23, 1920.

STATE EGG LAYING CONTEST

The management of the state egg laying contest to be conducted at Santa Cruz finds it necessary to postpone the final date on which entries may be made in this annual contest to November 15 instead of November 1 as first announced.

Several hundred acres of fine cotton is being picked in the Dos Palos section of Madera County.

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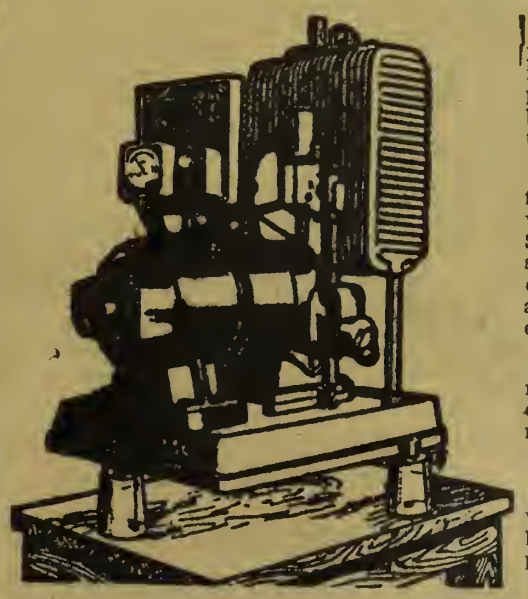

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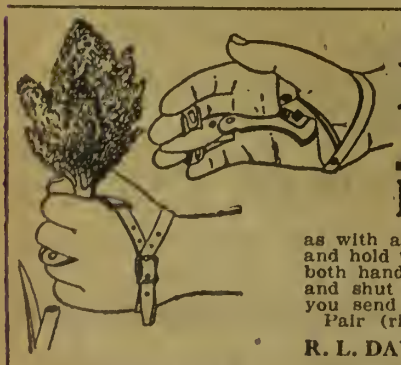

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R. L. DAVID, Dept. D, San Jose, Cal.

The Vegetable Garden for November in Southern California

By D. F. Reichard

THE rains of last month loosened up the ground and cleared out the air, giving us a "call to the garden" such as we get with our spring rains. The impulse is to clean up all matured stuff and work up the ground and put in new crops.

The important thing this month is to clean up. Gather all old cornstalks, dead vines and trash in piles and hurn or put in compost pile for fertilizer.

Dig the sweet potatoes, take in pumpkins, squash and casaba. Put them away in cool dry places where they will not get scratched or bruised. Prune deciduous fruit trees and berry bushes. Spray them with Bordeaux mixture to control fungus. The spores of fungus hold over the winter in crevices in the bark and on litter. By spraying the trees and bushes and letting considerable of the mixture fall on the ground and litter under them, most of the spores are destroyed.

On all ground that is not to be utilized for winter crops put a generous quantity of coarse barnyard manure and turn it under. Leave the ground in this loose condition to absorb the winter rains. Break up the surface after each heavy storm to prevent a crust from forming. For ground that is to be used at once apply either well rotted manure or commercial fertilizers. These give quick action and do not leave the soil porous as do coarse manures. On account of the shorter days and cooler nights plants do not grow and develop as rapidly during the winter months as in the spring and summer. By the use of fertilizers the growth is boosted along to a considerable degree and the planting of a winter garden is made worth while.

Set out plants of cabbage, cauliflower, kale and Swiss chard. These all grow through the cooler months and do well.

Egyptian beets, oxheart carrots, purpletop Globe turnips. early and winter radishes. Wonderful lettuce, Amsterdam Giant spinach and onion sets, these may all he planted now for use next February and March.

Asparagus and rhubarb roots, Jerusalem artichokes and horseradish are set out from now until spring. In frostless sections potatoes may be planted during this month for early spring crop. Sow seed of eggplant, peppers and tomatoes in hotbeds for plants to make early plantings in the spring.

Watch the growing stuff. As long as the rains hold off it will be necessary to irrigate and cultivate. Do not neglect to supply fertilizer where the plants are not growing as fast as you think they should.

Ornamental Gardening in November in Southern California

By Ernest Braunton

ALL THE work, sowing and planting recommended for October may be done in November. We start gardening for the winter season during the first month simply because we want to begin, not because it is the best time. For bulb planting the last of October or the first part of November is far better than earlier. So plant bulbs now and plant them freely—any kind of bulbs.

This is also a cleaning up time. It seems that hardly anyone will clean his garden, his street or road front, or make any other improvement in general appearances until November. Early and copious rains alone stimulate earlier work. This is the time when neighborhood or district improvement societies awaken from their summer lethargy and cast about for the best means of cleaning and making bright that small part of the world falling under their jurisdiction. Roadside planting with trees and wild flowers constitutes the whole of highway gardening. It is getting to be quite a fad, and a most commendable one, to plant California native wild flowers along the farm frontage. This should be done by all so that our highways may be bright with our own floral beauties. Many of these are self seeding, so that one sowing is for all time.

We hardly know what to advise on seed sowing except to say sow almost any and all seeds. It is the best of times for sowing wild flowers, and more California poppy seed is sown in November than in the other 11 months. But all poppies may be sown now, and candytuft, snapdragon, stocks, larkspurs, columbines, centaureas, calendulas and marigolds, gypsophila, and, best of all, sweet peas. Poor luck with sweet peas is usually due to lack of soil preparation. You must enrich the soil, mix the fertilizer thoroughly and dig deeply. Sweet peas must have a deep soil well pulverized.

Many garden plants that have bloomed out may now be headed back or severely pruned to stimulate new growth. Some of this class, liko fuchsias, should be left unpruned until February or frosts will catch the tender growth, but penstemons and hardy herbaceous tops may fairly be slaughtered and good results will follow. Many cuttings from this class of plants will now root readily in boxes of sand, begonias, fuchsias, marigolds, etc., and it is the best time of all for rose cuttings. The writer put in rose cuttings early in October, for he wished to start the bushes into growth and the cuttings are best taken when the wood is dormant. Now is also the best time to fertilize rose bushes, and stable manure is the best material, but failing in that any good commercial will do. It seems roses are made better by anything in food that other plants need. The best practice, after light spading of the soil, is to cover the whole bed with not less than four inches of strawy stable manure and leave it so until spring. The rains will wash it clean and you will have a nice straw mat on which to walk while picking flowers.

AN IMPROVEMENT IN THE SETTING OF WAYSIDE TREES

Because trees have been set in stiff, exact rows along the waysides for ages, the possibility of there being any different and better way is apparently never even thought of.

Consider nature's way of grouping her trees and plants: there are no straight lines and no uniform and exact spaces between growing things of her setting, and she attains far better and more artistic results in her work than the man with the straightedge and measuring line, and there is no end to her ever-changing combinations and artistic effects. The "English garden", with its stiff straight lines, is an abomination. The best to be secured is to follow along nature's lines, but adapting them to the varying conditions of the waysides.

In place of rows set the trees in clumps, as a rule of but a single variety in a clump. Let the clumps vary in size and natural groupings to fit the place, from three to 30 in a bunch, the distance apart of the trees and the number in a clump to depend upon the size, growth and habit of the tree, and the distance between the clumps to depend upon tho lay of the land, the soil, moisture, exposure, and other conditions.

Tho grouping of the trees should be the work of landscape artists, the best available. Their work would add much

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to the beauties of the landscape that took in such roads. Some clumps might extend two or three trees deep into the roadway, and, with the consent and cooperation of the landowner, some might also project back into the fields. Others, like the tall straight Lombardy poplar and eucalyptus globulus, would be effective in straight strings of about five in a line. The setting of the stakes for the clumps and for each tree in the clump should be the result of intelligent, artistic consideration given to each particular group. The spaces between clumps should be, probably, from 50 to 200 feet. This treatment of the roadsides would make them vastly more attractive from a distance, and the view from the roads would be much more enjoyable than if cut off every second or two by regularly spaced trees; the sun would have a chance to dry off the roads after the summer as well as the winter rains, which would be an economic feature of importance enough to be taken into account, and yet there would be numerous shady places under which to alight and enjoy the vistas.

THE WHEAT INDUSTRY

In an address at the National Wheat Show in Wichita, Kansas, Dr. R. J. H. De Loach said:

The largest yield of wheat on record in the United States department of agriculture is 117 bushels per acre on 18 acrees in the state of Washington. The next largest is 108 bushels on ten acres in the state of Idaho. These high records would have little significance except for the importance of the wheat crop and the gradually decreasing surplus wheat lands of the United States; also the increasing popularity and the growing needs of larger and larger crops of wheat and other grains. This great country of ours can never grow maximum crops on all the lands, but plans can be laid for larger yields per acre.

Cost of Production

The Minnesota experiment station found that it required 12 1-3 hours of human labor and 30 hours of horse labor to produce an acre of wheat. Since the cost was based on hours of labor rather than dollars and cents it holds good today, and to translate it into dollars and cents one needs only to multiply the hours by the price of labor at a given time.

If the yield was 12 1-3 bushels per acre, each bushel would require one hour of human labor and two and a half hours of horse labor. If the yield had been 24 2-3 bushels the cost would have been reduced half per bushel except the very small additional time required for harvest and threshing.

Select Seed

One way to reduce cost of wheat production is to select seed wheat successfully, and gradually eliminate all poor and low yielding plants. My own observations prove to me that at least one-third of the plants in any field are failures; that is, they are not paying the expense of tilling the soil in which they grow. They get the plant food elements from the soil and fail to give the proper return. Science is helping to eliminate this terrible loss by making more of the plants pay—by making more of them yield full plump heads—and there is sufficient proof that this can be done.

Rotate Crops

A second principle to observe in the successful growing of wheat and reducing the cost of production is the proper rotation of crops, whereby cover crops can be plowed under one year in two or two years in three. Each section of the country has its own crop rotation system, but the plan must always provide for a substantial production of organic matter to be returned to the soil. Rotation helps also to keep the land free from disease, and doubly insures higher yields.

A third point for consideration is the proper balancing of plant foods in the soil so that the plants may draw upon this source for a constant diet. Belgium has perhaps been most successful along this line, and just prior to the war reported the highest yield per acre of wheat of any country in the world, also the lowest cost per bushel to produce. With a wonderful system of tillage, Belgium applies more plant food per acre to her wheat lands than any other country on the globe.

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"Some folks think that when you blast for tree planting you've got to shoot the earth up to the sky—that's *wrong*. A good shot for tree planting just raises the surface earth two or three feet—then the force of the dynamite is properly used—it breaks up the earth all around the hole and gives the young tree's roots a chance to spread.

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The offering includes an unusual number of fresh cows and cows heavy with calf to 35 and 36 pound bulls, and to a number of bulls out of dams with 1000 to over 1100 pounds butter in one year, including SEGIS PONTIAC ABBEKERK, KING KORNDYKE PONTIAC 20TH, PRINCE RIVERSIDE WALKER, and SIR AAGGIE DE KOL ACME 2ND.

High Record Cows and Daughters of High Record Sires and Dams

There will be splendidly bred A. R. O. cows with records up to over 26 lbs. butter in 7 days, and daughters of high record dams and sires from dams up to over 1300 lbs. butter in one year.

Watch Later Issues for Detailed Announcements

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At seven years—
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She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.
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King Segis Pontiac Jannek 161758 in Service

35 daughters of this great sire in herd

Showing eleven head of the get of King Segis Pontiac Jannek at Los Angeles Livestock Show we won the following prizes: 1st and 3rd get of sire; 1st young herd; 1st calf herd; 1st junior bull calf; 1st and 4th junior heifer calf; 2nd senior bull calf; 2nd junior yearling heifer; 3rd, 4th and 5th junior heifer calf. Young bulls sired by King Segis Pontiac Jannek for sale at right prices.

Jas. J. Jeffries, Owner, Burbank

H. A. Koch, Supt.

Young Holstein Bulls

Just a few by Sir Veeman Korndyke Pontiac. One of these young bulls will increase your profits. Better get yours before they are all gone. We will be pleased to write you full particulars.

R. F. GUERIN **Visalia, Calif.**

Breeder of Holsteins and Poland-Chinas

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ARNOTT & CO., Inc., 112-18 S. Los Angeles St., Los Angeles

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

SALES A FEATURE OF SAN FRANCISCO SHOW

Not the least important feature of the California International Livestock Show, to he held November 1-8, will be the series of sales scheduled for that week.

The show management has provided a splendid sales pavilion and has offered every encouragement to the various breed associations to utilize the show as a place for sales.

This California Shorthorn Breeders' Association will conduct a sale of 30 carefully selected females and ten head of high class hulls. The consignments have come from such representative herds as: Caledonia Farms, West Sacramento; T. T. Miller and Pacheco Cattle Co., Hollister; Estate of T. B. Dihblee, Santa Barbara; Ormondale Co., Redwood City and H. L. & E. H. Murphy, Perkins. A numher of the lots represent the more popular Scotch families as well as the best American families.

Following the Shorthorn sale the Pacific Coast Hereford Breeders' Association will hold a sale of ahout 35 head of bulls and females. This sale offering was selected by Alec McDonald under instructions to pick only superior cattle. How well the commission was carried out can be guessed. The sale is notable for the unusually large number of outstanding individuals that have been consigned. As a matter of fact, 24 head listed for sale are also entered in the show. Seventeen cows with calves at foot offer a splendid buying opportunity.

On November 8, H. M. Barngrover of San Jose will offer at auction 90 head unregistered pure bred Herefords. This offering is expected to prove attractive to cattlemen desirous of installing a better class of cattle. Much of the offering has been sired hy Patrician 5th, the splendid breeding bull owned by Mr. Barngrover.

The first two sales will he held at the show headquarters, the latter sale at the yards of the Western Meat Co., South San Francisco.

The Hereford sales will be managed by C. L. Hughes of the California Breeders' Sales and Pedigree Co., Sacramento. Col. Earl Gartin of Indiana will be the auctioneer.

CALEDONIA SHORTHORNS IN SAN FRANCISCO SHOW

A feature of the Shorthorn sale to be held at San Francisco November 6 will he the consignment of females from the Caledonia herd owned by Edward Cehrian.

Mr. Cebrian will consign 14 head of cows and heifers. Several of the cows will sell with calves at foot and rebred and all the heifers sell bred.. The sale will afford the first opportunity for Western breeders to secure the hiood of the two great bulls recently added to the Caledonia herd, namely, Caledonia, considered by many authorities as the best bull imported in years, and Gainford Matchless, a son of Gainford Marquis. Gainford Matchless will be seen in the show ring and his initial public appearance is heing watched with the greatest interest.

The Caledonia Farms herd is recognized as one of the most notable collections of the breed owned in America and is expected to play a commanding part in the progress of the breed.

CALIFORNIA WOOL GROWERS

A special meeting of the California Wool Growers' Association will be held at San Francisco in the California Building on Friday, November 7 at 2 p. m. for the purpose of discussing and taking action on the Kenyon bill and other legislative matters.

The California International Livestock Show will be on at this time and you are urged to attend both the show and this special meeting.

THE HORSE SHOW

The exhibit of draft horses was neither so extensive as at the show held at Sacramento nor did it register such high quaiity throughout.

Merritt-Bowers Co., exhibited Percherons, Belgians, Shires, Clydesdales and light horses.

This firm had the champion Percheron stallion with Patre of Paicines. James Marwick's Luna was champion mare. Fred H. Bixby showed Montezuma Chief to the Shire championship. Merritt-Bowers Co. had the champion Shire mare, Wrydeland's Model.

The Dibblee Estate, Santa Barbara, had hoth the Clydesdale champions.

Professor F. W. Wilson, of the University of Nevada, passed on the heavy horse classes.

DAIRY COUNCIL DAY

A special meeting of California Dairy Councii will be held in the convention hali of the California Buiiding, Exposition Grounds, San Francisco, Thursday, November 6.

The management of the California International Livestock Show has generously set aside November 6 as California Dairy Councii Day, and the whole day will be given over to practical discussions and the viewing of the many enlightening exhibits which no member of California's dairy industry can afford to miss. The program opens at 9:30.

Program

Stock judging demonstration in arena. The place of cow testing in the dairy business, N. A. Negley, dairy division, U. S. Department of Agriculture; How cow testing will help to make money for the dairyman, A. J. Gallagher, Bodega; The dairyman's obligation to the public and his opportunity, Prof. C. W. Rubel, College of Agriculture, Berkeley. Afternoon: The state dairy council idea, Sam H. Greene; Why every commerciai dairy herd should have a pure bred sire, M. H. Tichenor, Palo Aito; Illustrated lecture, Ten years of cow testing in Humhoidt County.

During Livestock Show week, November 1-8, it is planned to hold a typical dairy luncheon at the Commerciai Club, at which oniy dairy products will be served. Dr. Thomas F. Hunt, Dr. Wm. C. Hassler, and Sam H. Greene will acquaint club members with the importance of dairying to the state of California and will present facts and figures showing the true patriotism and practical business wisdom of encouraging the use of milk and its products.

Charles R. Thomas

The manager of the Los Angeles Livestock Show.

LIVESTOCK SALE CALENDAR

Holstein Cattle

November 25. Registered Holsteins, California Breeders Sales and Pedigree Company, Tulare.

Hereford Cattle

November 7. Third annual sale Pacific Coast Hereford Breeders' Association, San Francisco.

November 8. Unregistered pure bred Herefords. H. M. Barngrover, San Francisco.

November 10. Diablo Stock Farm, dispersal, San Francisco.

Shorthorn Cattle

November 6. California Shorthorn Breeders' Association Sale, San Francisco.

Duroc-Jersey Swine

November 11. W. D. Hollingshead & Son, Oriand.

Poland China Swine

November 19. Fresno County Poland China Breeders' Association, Fresno.

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The first principle of the successful breeder—the top-notcher—the one that breeds the "killer" kind—is a thorough knowledge of blood and blood lines, feeds and feeding, and a practical application of that knowledge.

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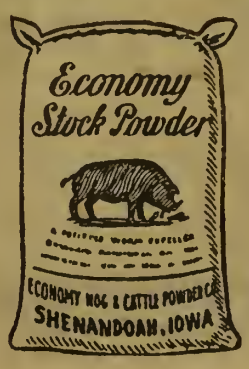
These ingredients are so blended and so proportioned as to do the work intended for them.



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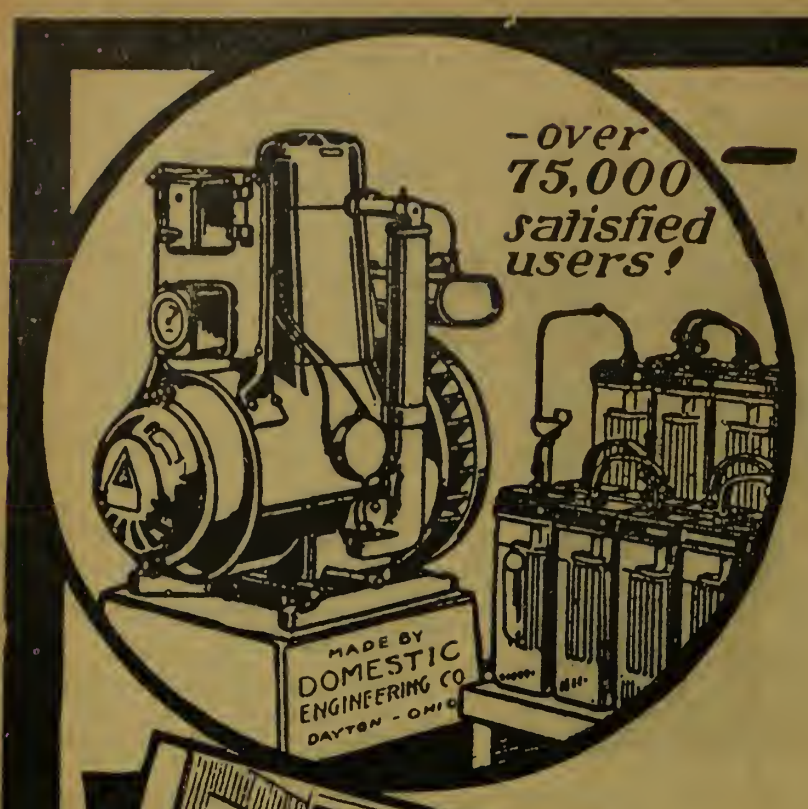

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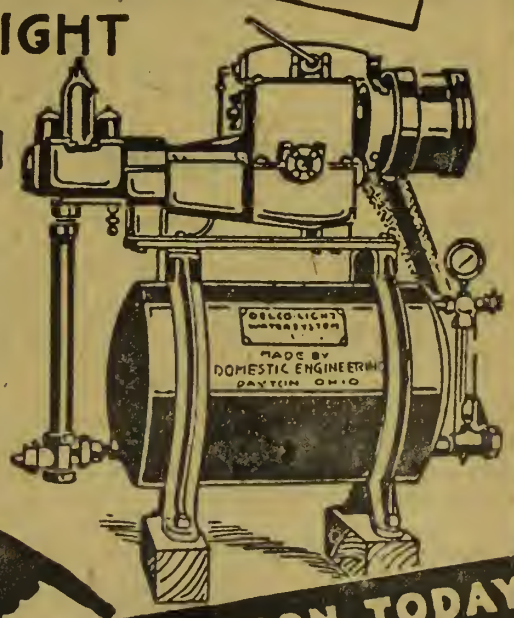

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90 Purebred Unregistered HEREFORDS

at Public Auction

Western Meat Company's Yards

South San Francisco

Saturday, November 8, at 1 p.m.

This is an extra choice lot of Hereford cows, heifers, and bulls, and is a complete dispersal of the unregistered Herefords owned by Mr. H. M. BARNGROVER, Proprietor of VERAMONT STOCK FARM, Taylorsville and Santa Clara, Calif. Mr. Barngrover is selling these cattle to make room for the expansion of his herd of registered Herefords.

There are about 40 splendid breeding cows in the offering, and most of their offspring are by Mr. Barngrover's high class herd sire PATRICIAN 5TH.

This is a rare opportunity for the buyer who wants to put some exceptionally high bred, profitable cattle on his range, and the offering will be made in such a way that the buyer of only a few head will have a chance to buy.

NOTE—There is frequent street car and Southern Pacific train service between San Francisco and South San Francisco, and good roads all the way for parties traveling by auto. Mr. Barngrover may be seen personally at the San Francisco Livestock Show where he will exhibit Herefords.

For further information communicate with owner or sales manager.

Auctioneer
Col. Ben A. Rhoades,
Los Angeles

Owner
H. M. BARNGROVER
Santa Clara, Calif.

Sales Manager
C. L. Hughes
Sacramento, Calif.

Pork Producers' Opportunity

Fresno Fair Grounds

Wednesday, November 19th, 1919

60 Poland China Bred Sows, Gilts, Open Gilts and Boars

This will be our second public sale. Our first sale in August proved conclusively that we sell in these sales the right kind. It's our aim to make this sale a better one in every way. Every animal to be sold will be specially selected for this sale.

Lunch at 11 A.M. *Sale at 12 M.*

Geo. W. Bell, Tulare, Auctioneer

It will pay you to attend this sale. Write the secretary for a copy of the catalogue.

Alfred Buckland, President
Walter C. Ficklin, R.A. Box 189, Fresno, Secretary

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The Grand Champion Boar HARVEY'S CHOICE 53147 at head of our great herd of brood sows.

HARVEY'S CHOICE---Grand Champion Boar at Los Angeles 1919
LOOKOUT CHEROKEE---Grand Champion at Liberty Fair
SIOUX QUEEN---Grand Champion at P.P. I.E.

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager Redlands, Cal.

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CACTUS FOR HOGS

A representative of the Cultivator recently came upon a field of spineless cactus in which hogs are allowed to run throughout the year. Parts of the field had stalwart plants six or more feet high, but there were favored forage spots where scores of plants were kept down to stubs less than a foot high. At the time of visit tiny suckling pigs were eating away at every point where the tender pulp was exposed, but they did not bite into any unbroken leaves as did the larger pigs. One red hog of 200 pounds was observed looking up at a gigantic slab two feet long and nearly as wide, but only for a moment, when he reared up on his hind legs, struck down the leaf with his forefeet and began eating it greedily. All this drove of hogs were in splendid condition and the owner was enthusiastic over cactus as a stock food. While it is low in nutriment it stands high as a roughage to properly carry along more concentrated rations.

Sergeant J. R. Young of Madera, writing about rain in the Philippines, states 11.56 inches fell on July 29.

Dairy Champions at Los Angeles
Highland Ithan, grand champion Ayrshire female, owned by J. Henry Meyer.
Elkhorn Public Opinion, grand champion Ayrshire bull, owned by J. Henry Meyer.
Bessie Segis Pontiac 2d, grand champion Holstein female, owned by Burr Farm.
Jolly Senator Raleigh, grand champion Jersey bull, owned by J. E. Thorp.
Shy Lady Viola, grand champion Jersey female, owned by Grant A. Brown.

SOUTHERN HOLSTEIN BREEDERS TO ORGANIZE

During the Los Angeles Livestock Show Holstein breeders of Southern California were entertained at a dinner at the Los Angeles Athletic Club as guests of James J. Jeffries. The occasion was one for mutual congratulation over the splendid exhibit made at the show and resulted in preliminary steps being taken to effect some sort of an organization to look after the promotion and welfare of the breed south of Tehachapi. It is not the intention of the breeders that the new organization shall in any way conflict with the state association, but rather that it shall function as an auxiliary to the parent organization.

Southern California breeders feel that there are many questions and problems that are essentially local in character, and it is proposed that the new association will concern itself in the proper handling of these local matters.

The preliminary work is in charge of Geo. M. Brown and R. A. Condee. A meeting of all interested will be called in the near future.

PROMINENT POLAND MEN VISITING CALIFORNIA HERDS

C. H. Walker, publisher of the Poland China Journal, Kansas City, Missouri, and Hugh Bridges, one of the owners of the famous Wilverdell herd of Poland Chinas, St. Joseph, Missouri, are spending a few weeks in California. It is their plan to visit as many of the Poland China breeders as possible and to learn at first hand the needs and possibilities of California.

The Poland China Journal has accomplished much constructive breed work and Walker says that the future program contemplates a broader policy.

Messrs. Walker and Bridges have been impressed with the opportunities in California and say that Eastern breeders are watching this state with interest. According to Walker, it is expected that the coming winter will see the greatest activity the breed has known.

A CALIFORNIA SALE OF REGISTERED HOLSTEIN COWS

A sale of 100 registered Holstein-Friesian cows to be held by Geo. A. Smith & Son on their ranch at Corcoran on Wednesday and Thursday, November 5 and 6, offers opportunity to all who want Holsteins.

Another remarkable fact is that not one is over three years old. These cows will improve for the next three years and without doubt will be heard from in the future. Being firm believers in the year's semi official test their owners have adopted the policy of placing every cow on a year's test. A number have already finished a year's work and 68 are at present doing yearly record work. This yearly record work is of especial value in the case of heifers with first calf, as it develops and establishes a long lactation period, making persistent milkers with nearly uniform production for the entire period and greatly influencing their production and adding materially to their value and future usefulness for life.

The animals have been tested five times during the last two and a half years.

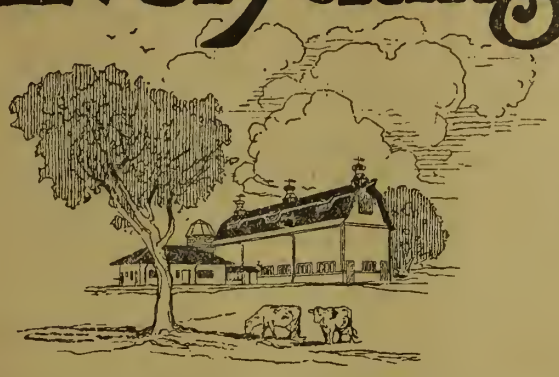
It is not often that buyers have an opportunity to secure cows bred to a bull whose dam and sire's two nearest dams were all world's record cows.

TO CLOSE OUT HEREFORDS AND DUROCS

G. W. Emmons, proprietor of the Diablo Stock Farm, Danville, who has the distinction of establishing the first herd of Polled Herefords in California, has decided to close out all of his horned Herefords and has instructed Chas. L. Hughes of Sacramento to disperse his herd of 52 head on November 10 in San Francisco. The herd is headed by Bertram Fairfax, a grandson of Perfection Fairfax.

On the same day the entire herd, consisting of 100 head of Duroc-Jerseys owned by Mr. Emmons will be dispersed. Col. Ben A. Rhoades of Los Angeles will be the auctioneer.

Everything for the Dairy



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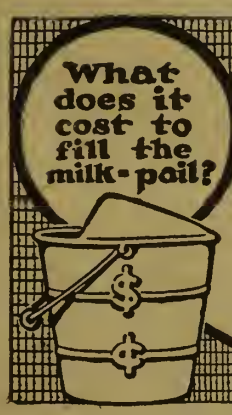

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IT'S not how much milk you get, but how much it costs you to get the milk that counts. Jerseys feed for their well-rounded udder—not beef and bone.

Jersey Milk is of the richest quality with a butter fat average of 5.37%. Jersey milk, Jersey butter and Jersey cheese sell for more on the markets.

Jerseys are adaptable to any climate. They are an asset to their owners, for they mature earlier for milking and are still producing long after other cows have gone dry. Let us tell you more about Jerseys. Write for our free literature.

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For Sale

A fine straight one, bred right, priced right

S. F. Williams
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Offers two Register of Merit cows. Bred to Altama Interest and Jap's Perfection Owl. Due Dec. 13 and Jan. 1.

Guy. H. Miller
R. 1, Modesto, Cal.

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Are made under ordinary dairy conditions
The Farmers Cow is
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Young Bulls For Sale
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One at the head of your herd will pay big dividends on his cost. Write to

W. J. Hackett
Modesto Cal.

Get One of My Jersey Bulls

to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.

Visitors Welcome Correspondence Invited

A. A. Jenkins
R.R. Box 46 Tulare, Cal.

JERSEYS

3 BULLS	No. 1 born Mar. 11, 1918. Sire, our Noble Mayfair Hero.	3 BULLS
No. 2 born Oct. 1, 1918. Sire, our Kathie's Eminent.	All from high record cows in Arden herd.	No. 3 born Dec 20. 1918. Sire same as No. 2.

ARDEN DAIRY CERTIFIED, EL MONTE, CAL.

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GUERNSEYS
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By actual test will increase pork production five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price.

Milk Production

One of our customers writes: "We are out of molasses and our cows are falling off in their milk badly, hence we would appreciate immediate shipment. Kindly ship us two tons more in addition."

We supply it in barrels or tank cars for shipment anywhere. Attend the California International Livestock Show, San Francisco, Nov. 1 to 8.

W. H. Young Company

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AGGELER & MUSSER SEED CO.

620 South Spring Street LOS ANGELES, CAL.

Write for our Bulletin on Grain

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Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

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LOS ANGELES LIVESTOCK SHOW

Continued from Page 575.

that she stood third at Sacramento, and since then she has calved and shows to much better advantage, and while she lacks the thickness of Pacheco Lass 118th, that stood above her at the earlier show, the judge liked her smoothness of covering and her neater head and horn.

The senior yearling, King's Countess, held her accustomed place above Princess Royal, Lancaster Lady and Lavender Queen, the three heifers shown by Dibblee. A Glide entry, Village Lassie, was first in the junior yearlings over Pacheco Lass 148th and Ruby Avon.

The senior heifer calves constituted one of the most attractive classes of the show. The top was outstanding in the precocious white of Pacheco. She has improved since her show in September and came near being made junior champion. The smoothly covered, deep, nicely balanced light roan, Lucy Lee 5th, was second. If she had a more attractive head she might go higher. Pacheco was third with a lovely little red lady. Glide was fourth and another Pacheco entry fifth. Pacheco was first with juniors, Glide second and Dibblee third.

The awards follow:

Shorthorns

Exhibitors: Caledonia Farms, San Francisco; Estate of Thos. B. Dibblee, Santa Barbara; T. S. Glide, Davis; F. L. Hall, Perris; Wm. Henn, Kansas City, Missouri; Merritt-Bowers Co., Tulare; Pacheco Cattle Co., Hollister; University of California, Davis.

Aged bull—Dibblee on Hallwood Flash; 2, Henn on Cumberland Goods. Two year old—1, Glide on Matchless Elite; 2, Pacheco on Pacheco Marshal; 3, Henn on Homer Lord. Senior yearling—1, Dibblee on Bashan Augusta; 2, Pacheco on Dalmeny Count; 3, Glide on Hillcrest Amaranth; 4, Henn on Red Monarch. Junior yearling—1, Henn on Lord Julian's Type. Senior calf—1, Dibblee on Baron Lancaster; 2, Glide on Cheerful Count; 3, Pacheco on Pacheco Cumberland; 4, Dibblee on Orange Villager. Junior calf—1, U. of C. on Memory's Champion; 2, Glide on Spicy Count; 3, Pacheco on Pacheco Bramton; 4, Hall on Avon's Sensation.

Aged cow—1, Glide on Spicy Lady. Two year old—1, Glide on Little Sweetheart; 2, Dibblee on Meadow Village Girl; 3, Pacheco on Pacheco Lass 118th. Senior yearling—1, Glide on King's Countess; 2, Dibblee on Lancaster Lady; 3, Dibblee on Princess Royal; 4, Dibblee on Lavender Queen. Junior yearling—1, Glide on Village Lassie; 2, Dibblee on Ruby Avon; 3, Pacheco on Pacheco Lass 148th. Senior heifer—1, Pacheco on White Pacheco; 2, Dibblee on Lucy Lee 5th; 3, Glide on Village Rose; 4, Pacheco on Pacheco Bloom; 5, Pacheco on Pacheco Blossom. Junior heifer—1, Pacheco on Cumberland Pacheco; 2, Glide on Countess Fortuna; 3, Dibblee on Secret Clipper.

Senior champion bull, Hallwood Flash; reserve, Matchless Elite. Junior champion, Bashan Augusta; reserve, Memory's Champion. Senior champion cow, Little Sweetheart; reserve, Spicy Lady. Grand champion bull, Bashan Augusta; reserve, Hallwood Flash.

Aged herd—1, Glide; 2, Dibblee; 3, Pacheco. Young herd—1, Glide; 2, Pacheco. Calf herd—1, Pacheco; 2, Dibblee; 3, Glide; 4, Pacheco. Get of sire—1, Glide; 2, Pacheco; 3, Dibblee; 4, Dibblee. Produce of dam—1, Dibblee; 2, Glide; 3, Glide.

The Herefords

The Hereford exhibit, while good, was scarcely up to the standard of last year's show. Two Eastern herds, the Hereford Corporation of Wyoming and William Henn of Missouri, both of which won at the Liberty Fair last year, found competition with two California herds, both making their initial show. D. H. Ogden, a progressive cattleman of Alpine, and the Conejo Ranch, Newbury Park, showed great enterprise by exhibiting. While neither of the local herds had been fitted, they served to indicate the real beef making qualities of the Whiteface.

Wallace Good of Kansas City made the awards and in several cases opened the way for criticism.

The rating of the two aged bulls was comparatively easy. The Ogden entry lacked the scale of the winner and was further handicapped by lack of fitting.

In the two year olds the judge surprised most everyone, even the exhibitors, when he tied Bonnie Laddie above Anxiety Fairfax. The latter bull had been conceded the winner. He has more scale than the winner, as much quality and a more attractive head and horn. Henn also had the third and fourth places. Henn showed four in the senior yearling class without competition. The Hereford Corporation took first, second and fourth on junior yearlings and Henn was third. The winner was a remarkably low set, heavy boned youngster, level of lines and balanced throughout. His position was not questioned and he had friends for premier place. The Henn calf looked well in second place.

A Wyoming calf stepped in front of the seniors. Henn was second and Ogden third with a burly calf that would have gone higher with more fitting. The two juniors stood first for Wyoming and second for Ogden.

In the female classes the competition was not keen except in the younger classes. The Wyoming aged cow easily stood first over the Conejo entry shown thin. The two year olds were led by Miss Rialto, the Wyoming heifer. Miss Rialto has not been defeated in class this year. She is sweetly feminine, accurate in her conformation and thickly and smoothly covered. She met no serious opposition to the championship.

Only two junior yearlings were shown, both from the Wyoming herd.

The senior and junior heifer calf classes were won by the Hereford Corporation, with Ogden standing a close second on account of condition. In fairness to the Ogden cattle it should be said they were shown "as is"—none having the advantage of extra milk.

Most of the group classes lacked competition, but in the get of sire the Ogden calves would have looked well up two notches higher.

The awards follow:

Herefords

Exhibitors: Conejo Ranch, Newbury Park; Wm. Henn, Kansas City, Missouri; D. H. Ogden, Alpine; The Hereford Corporation of Wyoming, Cheyenne, Wyoming.

Aged bull—1, Hereford Corp. on Wyoming Prince; 2, Ogden on Beau Rupert. Two year old—1, Hereford Corp. on Bonnie Laddie; 2, Henn on Anxiety Fairfax; 3, Henn on Bocalda 12th; 4, Henn on Arlington 2nd. Senior yearling—1, Henn on Royal Rupert; 2, Henn on Dare, 3, Henn on Prospect; 4, Henn on Wonder Lad 2nd. Junior yearling—1, Hereford Corp. on New Era 2nd; 2, Hereford Corp. on Wyoming Fairfax 4th; 3, Henn on Fairfax Lad 23rd; 4, Hereford Corp. on Gold Dust 3d. Senior calf—1, Hereford Corp. on Wyhampton 22nd; 2, Henn on Labor Day; 3, Ogden on Cal. Real Jr. Junior bull—1, Hereford Corp. on Wyoming Fairfax 8th; 2, Ogden on Killarney.

Aged cow—1, Hereford Corp on Miss Dale; 2, Conejo on Fae. Two year old—1, Hereford Corp. on Miss Rialto 2nd; 2, Conejo on Desdemona; 3, Conejo on Princess Louise; 4, Conejo on Katy A.; 5, Conejo on Sallie Delaware 2nd. Junior yearling—1, Hereford Corp. on Miss Dare 11th; 2, Hereford Corp. on Miss Dare 10th. Senior calf—1, Hereford Corp. on Miss Era 14th; 2, Ogden on Ramona; 3, Ogden on La Junta. Junior calf—1, Hereford Corp. on Lady Fairfax 5th; 2, Hereford Corp. on Lady Fairfax 4th; 3, Ogden on Loretta.

Senior champion bull—Bonnie Laddie. Junior champion bull—New Era 2nd. Senior champion cow—Miss Rialto 2nd. Junior champion heifer—Miss Era 14th. Grand champion bull—Bonnie Laddie. Grand champion heifer—Miss Rialto 2nd.

Aged herd—Hereford Corp. Young herd—Hereford Corp. Calf herd—1, Hereford Corp; 2, Ogden. Get of sire—1, Hereford Corp.; 2, Conejo; 3, Conejo; 4, Ogden. Produce of cow—1, Hereford Corp.; 2, Ogden.

Aberdeen-Angus

Congdon and Battles, North Yakima, Washington, had the only exhibit of Angus cattle. The showing attracted a great deal of attention and included some of the best doddies ever seen at a California show.

DAIRY CATTLE

Compared to the showing made at the Liberty Fair last year, no department registered greater improvement than was noted in the exhibit of dairy cattle. Every important breed was represented, and in view of the fact that most of the entries were from Southern California herds the show was a distinct surprise. As one prominent breeder remarked, it was the first time he had appreciated the real development that had taken place during the past few years. While the Holsteins were in the lead, the interest noted during the judging of all classes was keen. The dairy industry of Southern California has already reached large proportions, but the real development is just ahead, and such shows as the one just held will prove powerful factors in the building of this essential industry.

The Holsteins

With more entries than the other breeds, with classes that taxed the capacity of the judging ring and some of which were characterized by Judge Jno. B. Irwin of Minneapolis as being good enough to represent any show, the exhibit of Holsteins marked the greatest showing ever made by the

black and whites in Southern California.

Merci Lad Korndyke Burke carried the Baldwin colors through the aged bull class and on to the championship, although the sailing was not smooth all the way. Handicapped by the loss of one eye, his scale, immense depth, style and quality were sufficient to land him at the top. He can be criticized for a narrowness throughout. Sanders of Arizona was second with an attractive bull, Stalder was third and Frampton Bros. landed last year's winner in fourth place.

One of the most popular bulls of the show led the two year olds. This bull, Dichter Spofford Korndyke Lad 5th, owned by the George Junior Republic, and nicely fitted, is "bad medicine" in most any show. Santa Anita was second, Sanders third and Stalder fourth.

Burr Farm won the senior yearling class over Sanders, and the winner was afterwards made reserve junior champion. Only one junior yearling was in the ring.

The senior bull calves furnished the junior champion in the Sanders entry, King Elnora Segis Pontiac. Jeffries was second with a son of King Segis Pontiac Jannek. Stalder was third over the George Junior Republic and the Baldwin entry was fifth.

The class for junior bull calves was strong in number and quality. Jeffries was first over the field, Stalder second, Burr third, University of California fourth and Steiner fifth. The female classes brought out a strong showing. The judge insisted on type, size, quality, capacity and udders, and occasionally in his search he was inclined to favor type at the expense of size. The nine aged cows were topped by Topsy Clothilde Hengerveld from the Burr Farm. Her neat head and neck, ample heart and capacity and stronger top put her above Mary Altoana Pontiac from Santa Anita. The second cow was a bit wider through the hips but her udder was swung rather low.

Belle Julianna De Kol, standing third, was shown at a disadvantage, being heavy with calf. Frontier Korndyke Pontiac, a nicely balanced cow with a good udder, was a trifle shy on capacity and lacked size for a mature cow.

The three year olds were easily topped hy Bessie Segis Pontiac 2d, afterwards senior and grand champion. George Junior Repuhlic went to the front in the two year olds with Snowflake Julianna of Rock. Santa Anita took second and third over a Stalder entry.

The eight senior yearlings were aligned with the junior champion, Duchess Ormsby Sadie Vale heading the class. Ida De Kol Pearl Lyons was hardly so fine as the winner but showed more width throughout than Anoakia Cornucopia Walker in third.

The good lines and general fineness throughout, together with a better udder, won the junior yearling class for the Baldwin entry. The Jeffries entry in second was larger and put together on a more open plan. The third heifer was attractive and rather awkward in the ring.

Sixteen senior heifers taxed the capacity of the ring and the time of the judge. It was a particularly good class and the winner, a stylish straight lined heifer of excellent balance and dairy conformation, was made reserve junior champion. The junior class was won by a Jeffries entry over a field of good young things. The awards follow:

Holstein-Friesian

Exhibitors: Anita M. Baldwin, Santa Anita; A. J. Stalder, Riverside; Burr Farm, Los Angeles; California George Junior Republic, Chino; Frampton Bros., Artesia; Frank Reed Sanders, Chandler, Arizona; Los Angeles County Farm, Hondo; Leo Steiner, Lawndale; University of California, Davis; James J. Jeffries, Burbank.

Aged bull—1, Baldwin on Merci Lad Korndyke Burke; 2, Sanders on King Pearl Segis Pontiac; 3, Stalder on King Pontiac Netherland Segis; 4, Frampton on Segis Pontiac De Kol Burke Clyde. Two year old—1, Geo. Jr. on Dichter Spofford Korndyke Lad; 2, Baldwin on Prince Walker Cornucopia; 3, Sanders on Prince Hengerveld Paltz De Kol; 4, Stalder on Rosamaines Pontiac Netherland. Senior yearling—1, Burr on Sir Manuel Korndyke; 2, Sanders on Prince Mayola Pontiac. Junior yearling—1, Sanders on Palo Verde King Pearl Pontiac. Senior bull—1, Sanders on King Elnora Segis Pontiac; 2, Jeffries on K. S. P. J. Novelty King; 3, Stalder on Rosamaines Pontiac De Kol Keeva; 4, Geo. Jr. on Blanca Spofford Pontiac; 5, Baldwin on Major Walker Beets. Junior calf—1, Jeffries on K. S. P. J. Count; 2, Stalder on Rosamaines Pontiac Gerben; 3, Burr; 4, U. of C. on Korndyke Senorita Boy; 5, Steiner on Hiske Alban.

Aged cow—1, Burr on Topsy Clothilde Hengerveld; 2, Baldwin on May Altoana Pontiac; 3, L. A. Co. Farm on Bell Julianna De Kol; 4, Sanders on Frontier Korndyke Pontiac; 5, Stalder on Gerben Abhekerk Maid. Three year old—1, Burr on Bessie Segis Pontiac 2nd; 2, Stalder on Aralia Pontiac; 3, Baldwin on Anoakia Pontiac. Two year old—1, Geo. Jr. on Julianna Darington of Rock; 2, Baldwin on Anoakia Pontiac; 3, Baldwin on Anoakia Korndyke; 4, Stalder on Abbekerk Pontiac. Senior yearling—1, Burr on Duchess Ormsby Sadie Vale; 2, Geo. Jr. on Ida De Kol Pearl Lyons; 3, Baldwin on Anoakia Cornucopia Walker; 4, Stalder on Stanislaus Belle Hengerveld; 5, Sanders on Lady Sethje Mooie Pontiac. Junior yearling—1, Baldwin on Anoakia King Korndyke; 2, Jeffries on K. S. P. J. Careme Canary; 3, Baldwin on Anoakia Pontiac Beets 2nd; 4, Burr on It Siempje Korndyke; 5, Burr on Artis Zampa. Senior heifer—1, Sanders on Palo Verde King Pearl Piebe; 2, U. of C. on California Pietertje Pontiac Lady; 3, Jeffries on K. S. P. J. Dolly; 4, Jeffries on K. S. P. J. Julianna Maid; 5, Jeffries on K. S. P. J. Baron Lillabell Lilith. Junior heifer—1, Jeffries on K. S. P. J. Pietertje Girl; 2, Burr on Burr Farm's Julianna; 3, Stalder on Rosamaines Bonita Ormsby; 4, Jeffries on K. S. P. J. Milkmaid De Kol; 5, Geo. Jr. on Victory Pontiac Maid.

Senior champion hull—Merci Lad Korndyke Burke; reserve, Dichter Spofford Korndyke Lad. Junior champion—King Elnora Segis Pontiac; reserve, Sir Manuel Korndyke. Senior champion cow—Bessie Segis Pontiac; reserve, Topsy Clothilde Hengerveld. Junior champion heifer—Duchess Ormsby Sadie Vale; reserve, Palo Verde King Pearl Piebe. Grand champion bull—Merci Lad Korndyke Burke; reserve, King Elnora Segis Pontiac. Grand champion cow—Bessie Segis Pontiac 2nd; reserve, Duchess Ormsby Sadie Vale.

Aged herd — 1, Baldwin; 2, Stalder. Young herd—1, Jeffries; 2, Sanders; 3, Stalder; 4, Baldwin. Calf herd—1, Jeffries; 2, Sanders; 3, Stalder; 4, Baldwin. Get of sire—1, Jeffries; 2, Sanders; 3, Jeffries; 4, Stalder. Produce of dam—1, Sanders; 2 L. A. Co. Farm; 3, Burr; 4, Stalder. Five cows in milk—1, Stalder.

The Jerseys

While lacking in number, the quality of the Jersey show was excellent. The Thorp herd from the North, that has been seen at most of the earlier fairs, met strong competition at the hands of a number of the best herds of the South.

Thorp had a comparatively easy time in the bull classes, getting both championships. Jolly Senator Raleigh added another purple to his long string of wins.

The fact that the state fair winner, Salome of Mossdale, stood third at this show indicates the strength of the exhibit. Grant A. Brown won with Shy Lady Viola, the grand champion of the show. Sanders was second with Honeysuckle's Maid. Desert Honeysuckle was the winner among the two year olds over California Owl's Rose shown by the university. Thorp took the two top places in the senior yearling class. Brown won the junior yearling class with Financier's Daisy Witch.

The junior champion and reserve grand champion fell to Owl's Mermaiden Fern shown by the university in the senior calf class. Sanders won the baby class.

Ed Carey of Carlton, Oregon, rated the Jerseys.

Jerseys

Exhibitors—Grant A. Brown, El Monte; E. S. Haas, Downey; Frank Reed Sanders, Chandler, Arizona; J. E. Thorp, Lockeford; University of California, Davis; J. E. Wherrell, Riverside; Winsor Ranch, Bonita.

Aged bull—1, Thorp on Jolly Senator Raleigh; 2, Haas on Valet's Native Son of L. Senior yearling—1, Thorp on Golden Legacy's Champion. Senior calf—1, Thorp on Biddy's King of Mossdale; 2, Winsor on Beauty's White Sox; 3, Brown on Shylock's Monte. Junior calf—1, Thorp on Jolly Ben of Mossdale; 2, Wherrell on Promise's Handsome Pedro.

Aged cow — 1, Brown on Shy Lady Viola; 2, Sanders on Honeysuckle's Maid; 3, Thorp on Salome of Mossdale; 4, Brown on Conquest's Neilie; 5, Thorp on Eminent's Wardress. Three year old — 1, Thorp on Nomie of Mossdale. Two year old—1, Sanders on Desert Honeysuckle; 2, U. of C. on California Owl's Rose; 3, Sanders on Jolly Beatrice's Alice; 4, Sanders on Jolly Francesca; 5, Thorp on Pansy of Mossdale. Senior yearling—1, Thorp on Fair Salome of Mossdale; 2, Thorp on Bonnie of Mossdale 2nd; 3, Sanders on Maid's Grey Beauty. Junior yearling—1, Brown on Financier's Daisy Witch; 2, Sanders on Jolly Valley Rose; 3, Thorp on Valley of Mossdale; 4, Sanders on Dorothy of the Rancho. Senior calf—1, U. of C. on Owl's Mermaiden Fern; 2, Brown on Shylock's Kate; 3, Thorp on Gladys of Mossdale; 4, Brown on Shylock's Bonnie; 5, Thorp on S. B.'s Jolly Maid of M. Junior calf—1, Sanders on Oxford's Nora's Pretty Daisy; 2, Thorp on Queen Bess of Mossdale; 3, Brown on Shylock's Sly Joan; 4, Sanders on Golden King's Lady Violet.

Senior champion bull, Jolly Senator Raleigh. Junior champion, Biddy's King of Mossdale; reserve, Jolly Ben of Mossdale. Senior champion cow, Shy Lady Viola; reserve, Desert Honeysuckle. Junior champion, Owl's Mermaiden Fern;

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It has brought to light the winning blood lines in our big shows. It has furnished foundation stock for numerous new herds throughout the state and is still doing so; 200 pigs bred, bred sows, and sows with litters for sale.

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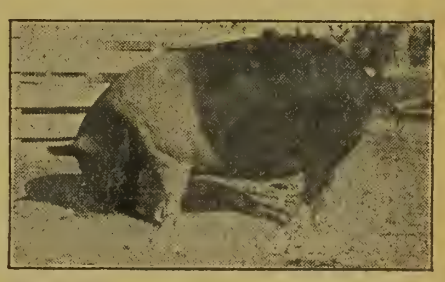
Our reserve grand champion sow Wavelet at the big Los Angeles show is the mother of 8 little Wavelets—a flourishing family. We won 1st on boar and 3 sows bred by exhibitor, also 3 other herd prizes. We were in the money on aged boar, twice on junior yearling boar, and once next the top on junior boar pig. All young stock the get of our great boar, The Harvester Again. Write us your wants.



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FOR SALE

Major Sierra Llano

First prize Senior Yearling at the recent Southern California Fair. Sired by Gold Mine, Grand Champion Boar at the California State Fair, 1916. Dam — Western Favorite, Champion Sow at the same show. I cannot well use Major any longer in my herd and therefore offer him at a very reasonable figure. An opportunity to get a good herd boar cheap.

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The prize winning junior yearling boar Black Beauty at head of herd.
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One of the Largest Herd in America

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The above statement is made with due regard to facts and is justified by opinions expressed by many of the leading authorities of the breed. When judged from any point—the character of the herd bulls, the quality, breeding, uniformity of type noted in the females, is such as to impress the most critical and to suggest that CALEDONIA SHORTHORNS are destined to play an important part in the affairs of the breed. Western breeders, in particular, can look to this herd with complete confidence as a source for breeding stock the equal of any produced in America. The established policy of the herd will be to hold fast to the traditions of the breed, to breed the most acceptable type and to offer the productions of the herd at prices based on sound values, and to encourage the establishment of small herds in California.

HERD BULLS

Even before Caledonia was imported as a calf, he was marked as one of the herd bull prospects of Scotland. Sired by the great Duthie bull, Proud Emblem, reckoned as one of the greatest bulls of the breed, and out of Rosewood 105th, one of the grandest cows in the Anderson herd, he came to America with a rare inheritance. From the time he sold as a junior yearling for $7500 he has been watched with the keenest interest, and as he developed he was accorded the distinction of being rated one of the most valuable bulls ever imported. When in search of a herd bull of the highest character, CALEDONIA was an inevitable choice, and he comes to California with the respect of the entire Shorthorn fraternity. He will be given a wide opportunity in this herd with full confidence that he will leave a high and lasting impression on the Shorthorns of the Pacific Coast.

GAINFORD MATCHLESS, a son of the champion, IMP. GAINFORD MARQUIS (a sire with few equals), represents to a high degree those qualities we believe are essential to the best in Shorthorns. His breeding is beyond criticism and he combines unusual scale (as a two-year-old he weighs 2500 pounds) and marked quality. His individuality is indicated by the fact that he was first in his class at the International last year. It was largely the outstanding and uniformly good calves sired by him that determined us to own him. In every way GAINFORD MATCHLESS can be rated as a top bull and we are certain that Shorthorn interests will accord him a high place. See this great bull at the California International Livestock Show.

PINE GROVE KING, sired by the champion, KING CUMBERLAND, by Cumberland's Last, and from a CLIPPER dam, by the celebrated Missie Champion, has proven his ability in this herd as a sire of note. He is a very thick fleshed bull and stands on as short legs as any bull of the breed. Calves by PINE GROVE KING will find their way to many of the best herds.

SELECT SULTAN, a roan yearling of most promising outlook, fine individuality and wonderful breeding. He is by the grand champion "Selection" by "Avondale" by the peerless "Whitehall Sultan." His dam "Village Nell 2nd" by the celebrated "Fair Acres Sultan," the best breeding son of "Whitehall Sultan", 2nd dam by the great Imp. "Villager"; next three sires "Golden Favorite," "Bapton Diamond" and "Bapton Ensign" to the imported cow "Nellie of Carlogie 5th" from the renowned herd of R. Taylor.

THE FEMALES

The collection of females in the CALEDONIA herd ranks as one of the truly great collections of the breed owned in America. Over 300 head are in the herd and among them are represented nearly every important Scotch and American family. Scale, constitution, substance, thick flesh and marked quality are outstanding. As evidence of the character of the breeding matrons it is significant that the dam of the sensational world's champion steer of 1916; the champion Shorthorn steer of 1918 and the highest priced Shorthorn bull ever sold at public auction on the Pacific Coast, were produced in this herd. A number of her half sisters are still in our pastures. To attempt a detailed description of the female division of the herd is quite out of the question. A personal inspection would be convincing and all who are interested are cordially invited to visit the herd.

Caledonia Shorthorns in San Francisco Sale, Nov. 6

It is not our intention to maintain the herd at its present proportions and we are therefore in a position to offer some exceptional values—values that can hardly be duplicated in any herd. Established breeders or men about to enter the business will be serving their own interests if they make a careful investigation of this herd. In the sale to be held at San Francisco, Wednesday, November 6, we will consign 14 females, consisting of bred cows with calves at foot and bred to our herd bulls, and heifers bred to the above bulls. Most of the consignment will represent desirable Scotch breeding and the sale will afford the first opportunity to secure females bred to Imp. Caledonia and Gainford Matchless. We also have a choice lot of females to sell at private treaty and offer an extra lot of good young bulls suitable for range work. They are well developed, heavy boned, thick fleshed rugged fellows that are the kind to improve the size and quality of market steers. The prices are attractive.

reserve, Oxford's Nora's Pretty Daisy. Grand champion bull, Jolly Senator Raleigh; reserve, Biddy's King of Mossdale. Grand champion female, Shy Lady Viola; reserve, Owl's Mermaiden Fern.

Aged herd—1, Thorp. Young herd—1, Thorp. Calf herd—1, Brown; 2, Thorp. Get of sire — 1, Sanders; 2, Thorp; 3, Brown; 4, U. of C. Produce of dam—1, Sanders; 2, Thorp; 3, Sanders; 4, Thorp. Cows in milk, five animals—1, Thorp.

Guernseys

Interest in the Guernsey classes was increased by reason of the winnings of the Dupee cattle at the recent National Dairy Show. This herd furnished the grand champion at Chicago in the senior yearling bull, Dauntless of Edgemoor. This bull was not shown at Los Angeles. However, Dupee had the grand champion bull in Itchen May King and the junior champion in Inspiration of Edgemoor. The Edgemoor herd walked off with all the female championships. James Marwick had the only entry in senior yearling bulls.

A. B. Humphrey of Escalon furnished stiff competition in nearly all classes, winning the two year old, junior yearling and junior bull calf classes. Ed Carey of Oregon judged the Guernseys. The awards follow:

Exhibitors: W. H. Dupee, Santee; A. B. Humphrey, Escalon; James Marwick, Santa Barbara.

Aged bull—1, Dupee on Itchen May King; 2, Humphrey on Bullion of Edgemoor. Two year old—1, Humphrey on Escalon Challenger. Senior yearling—1, Marwick on Mysie's Linden Boy. Junior yearling—1, Humphrey on Nobleman of Maple Hill. Senior calf—1, Dupee on Inspiration of Edgemoor; 2, Humphrey on Escalon Dandy. Junior calf—1, Humphrey on Escalon Truetype; 2, Dupee on Chesterfield of Edgemoor.

Aged cow—1, Dupee on Cheminante 11th; 2, Dupee on Mildred 2nd of Lee Godaines; 3, Humphrey on Fairy of Alfalfa Farms. Three year old—1, Dupee on Merry Queen of Edgemoor. Two year old—1, Dupee on Merry Lady of Edgemoor; 2, Humphrey on Escalon Fairy; 3, Dupee on Royal Dame of Edgemoor. Junior yearling—1, Dupee on Victorine of Edgemoor; 2, Dupee on Duchess of Edgemoor; 3, Humphrey on Calla Grove Merry Princess. Senior calf—1, Dupee on Patroness of Edgemoor; 2, Dupee on Muriel of Edgemoor; 3, Humphrey on Escalon Lassie; 4, Humphrey on Escalon Maggie. Junior calf—1, Dupee on Dancing Girl of Edgemoor; 2, Dupee on Bar Maid of Edgemoor; 3, Humphrey on Escalon Rose; 4, Humphrey on Escalon Flossie.

Senior champion bull — Itchen May King; reserve, Escalon Challenger. Junior champion bull—Inspiraiton of Edgemoor. Senior champion cow—Cheminante 11th; reserve, Merry Lady of Edgemoor. Junior champion heifer — Victorine of Edgemoor; reserve, Patroness of Edgemoor. Grand champion bull—Itchen May King. Grand champion female—Cheminante 11th.

Aged herd — 1, Dupee; 2, Humphrey. Young herd—1, Dupee; 2, Humphrey. Calf herd—1, Dupee; 2, Humphrey. Get of sire—1, Dupee; 2, Dupee; 3, Humphrey. Produce of dam—1, Dupee; 2, Humphrey. Cows in milk (5)—1, Dupee.

Fat Cattle

Exhibitors: Congdon & Battles, Yakima, Washington; T. S. Glide, Davis; University of California, Davis.

Steer or heifer one year and under two—1, U. of C. on California Thickset 3rd; 2, Glide on Cheerful Maid 4th. Steer or heifer under one year—1, Congdon & Battles on Ericaman C. B. 2nd; 2, U. of C. on California Yeomanette; 3, U. of C. on California Thickset 4th; 4, Congdon & Battles on Ericaman C. B. 3rd. Champion steer or heifer—Ericaman C. B. 2nd.

Ayrshires

The Elkhorn herd, owned by J. Henry Meyer, met competition in but four of the female classes in which the Universtiy of California had entries. Highland Ithan, grand champion at Sacramento, again won premier honors, but Imp. Holehouse Secretary, champion at the state fair, went down to defeat for top honors, when his younger stable mate, Elkhorn Public Opinion, was awarded the purple by Judge Carey.

Other Dairy Breeds

F. L. Hall, Perris, made a small exhibit of milking Shorthorns. Frank Reed Sanders showed a few Dutch Belted cattle.

Other awards and illustrations next week.

THE SHEEP SHOW

As noted at other California fairs, the sheep department was woefully lacking in entries. The University of California had a small display of Shropshires, Rambouillet, Hampshires and Southdowns and fat wethers. Aside from the Hampshire classes in which the Calla Grove Farm, Manteca, had entries, the state institution had no competition.

California sheep breeders should adopt a more progressive policy in the matter of showing than they have displayed in the past.

TULARE COUNTY POLAND CHINAS AVERAGE $153

The Tulare County Poland China breeders held a very successful sale at Tulare October 21. Fifty-two head, mostly bred sows, were sold for an average of $153. Hugh C. Shinn sold the top sow to Paul Sheppa of Tulare for $405. A. J. Elliott sold the second highest priced sow to H. G. Ball of Tulare for $330. The sale was well attended by both farmers and breeders.

Many animals went to farmers of Tulare County, where the interest in Poland Chinas is very keen, and a number of new herds are being started.

Col. Bell did effective work on the block.

The association will hold another sale in the spring, date to be announced later.

Following is list of sales:

R. F. Guerin Consignment
1. H. I. Marsh, Modesto, $135.
2, R. S. Smith, Delano, $145.
3, H. D. McCune, Lemoore, $180.
4, Chas. L. Weaver, Tulare, $285.
5, C. C. Robinson, Porterville, $115.
6, A. J. Elliott, Tulare, $200.
7, R. S. Smith, $80.
8, Mrs. Z. Losieben, Visalia, $180.

A. J. Elliott Consignment
10, H. G. Ball, Tulare, $300.
11, O. N. Garrison, Tulare, $130.
12, R. F. Guerin, Visalia, $200.
13, Chas. Sunkel, Tulare, $160.
14, H. G. Ball, $330.
15-A, Thos. Jacob & Bros., Visalia, $110.
15-B, A. K. Macomber, Visalia, $100.

Thos. Jacob & Bros. Consignment
16, C. C. Robinson, $50.
17, G. B. Martin, Visalia, $165.
18, W. E. Martin, Visalia, $110.
19. H. I. Marsh, $135.
20, Z. M. Dickey, Dinuba, $170.

Chas. L. Weaver Consignment
21, Thos. Jacob & Bros., $120.
21, Les McCracken, Ripon, $140.

Hugh C. Shinn Consignment
22, Paul Sheppa, Tulare, $405.
23, J. M. Bernstein, Hanford, $270.
24, A. S. McIntyre, Tulare, $225.
25, A. J. Elliott, $250.
26, H. D. McCune, $210.
26-A, Les McCracken, $235.
27. H. I. Marsh, $300.
28, J. H. Mathews, Porterville, $155.
29, F. E. Fay, Tipton, $160.

G. B. Martin Consignment
31, Les McCracken, $135.
32, A. B. Vroom, McFarland, $80.
33, James Herod, Bakersfield, $100.
35, O. N. Garrison, Ducor, $95.
35-A, James Herod, $120.
36, R. A. Wilson, Dinuba, $115.
37. H. I. Marsh, $135.
38, H. G. Ball, $140.
39. H. I. Marsh, $100.
40, B. M. Houck, Tulare, $105.
41-A, Thos. Jacob & Bros., $115.
49, C. W. Archer, Visalia, $280.

F. E. Fay Consignment
42, J. W. Raibley, Tulare, $105.
43, Will Bernstein, Hanford, $80.
44, H. D. McCune, $75.
45. F. R. Steinwait, Kingsburg, $55.
46, Z. M. Dickey, $100.
47, Hugh C. Shinn, $180.
48, A. B. Vroom, $100.

THE BERKSHIRE SALE AT LOS ANGELES LIVESTOCK SHOW

The Western Berkshire Congress held a consignment sale on Wednesday afternoon, October 22, in one of the judging pavilions of the Los Angeles Livestock Show. The offering was made up of bred sows and gilts, a few open gilts and a few boars. The top of the sale was the grand champion sow at the Los Angeles show, Castleview Premier Belle, consigned by J. Francis O'Connor and sold to F. L. Hall, Perris, for $510. Leader's Invincibella from the same herd went to the Whittier State School for $350. Geo. A. Stingle of El Monte secured a daughter of Star Leader, consigned by Anchorage Farm, Orland, for $300. The average, including the young gilts and boars, was $135.50. Ord L. Leachman of Sacramento was the auctioneer.

Following is report of the sale in detail:

1, J. F. O'Connor, Santa Rosa, $90.
2, D. J. Bastanchury, La Habra, $190.
3. D. J. Bastanchury, $100.
4, Italian Vineyards, Guasti, $75.
6, California Truck Co., Los Angeles, $190.
7, California Truck Co., $140.
8, Whittier State School, Whittier, $140.
9, D. J. Bastanchury, $100.
10, Geo. A. Stingle, $75.
10-A, J. F. O'Connor, $50.
12, Geo. A. Stingle, $60.
13, California Truck Co., $95.
14, California Truck Co., $85.
15, F. L. Hall, Perris, $510.
16, Whittier State School, $350.
17, D. J. Bastanchury, $280.
19, Frank B. Anderson, Sacramento, $90.
20, D. J. Bastanchury, $100.
21, D. J. Bastanchury, $100.
22, D. J. Bastanchury, $75.
24, E. H. Kennard, Los Angeles, $100.
27, F. L. Hall, $75.
28, California Truck Co., $130.
30. Geo. A. Stingle, $300.
31, Geo. A. Stingle, $75.
32, J. Donaldson, Perris, $100.
34, Geo. A. Stingle, $100.
35, Geo. A. Stingle, $70.
36, A. B. Humphrey, $60.

HEREFORDS

Of Royal Quality at Public Sale

30
FEMALES
Including
First Prize Winners
Bred to
Outstanding Sires

SONOMA—Grand Champion at Denver Livestock Show.
Consigned by Chas. Rule, Jenner, Calif.

5
BULLS
Including
Two
Grand
Champions

Friday, November 7, at 1 P.M.

Exposition Grounds, San Francisco

Under Auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, President, Wells, Nev. J. A. Bunting, Secretary, Mission San Jose, Cal.

Now Is the Time to Buy Herefords

The demand for registered Herefords far exceeds the supply in the West, and besides the rapidly increasing volume of local demand, foreign buyers are limited in their purchases here only because of the scarcity of Herefords for sale. There is a keen need for the product of hundreds more Hereford breeding herds throughout the Pacific Coast states, and the man who has the foresight to recognize that fact and establish a herd right now is certain to achieve success.

This Sale an Opportunity to Secure Correct Foundation Stock

To place before the public a group of registered Herefords that would completely surpass in breeding, individuality, and quality, any offering of the breed previously made in the West, a Committee went into the leading herds and made selections from among the tops. It has meant genuine sacrifice to permit many of these selections to go out of their respective herds, and the greatest recompense that can come to the sellers will be the fact that new herds will be founded upon substantial animals, and the progress of the breed stimulated thereby.

Great Females in this Sale

To describe every richly bred female in this sale would require practically a recital of the entire sale catalog, with its splendid showing of prize winners and proven breeding matrons. When we add to their individual qualifications the fact that most of them are bred to such bulls as Cazier's $10,000.00 BEAU BLANCHARD 76TH; Barngrover's PATRICIAN 5TH; Bemmerly's NEW ERA 2ND and BONNIE BRAE 96TH; Gable's DON PERFECT 2ND and DIAMOND FAIRFAX; Diablo Stock Farm's BERTRAM FAIRFAX and WITCHFORD; and Bunting's ANXIETY FAIRFAX and ALEC, the result is a combination of breed quality that should prove most attractive to the buyer of the better sorts.

Bulls of Outstanding Merit

The presence in the sale list of two Grand Champion Bulls, SONOMA, winner at the Denver Livestock Show, consigned by Chas. Rule, and CALIFORNIA PRINCE DONALD, winner at 1918 California State Fair, consigned by J. A. Bunting, lends added attractiveness to a bull offering that is of high character throughout. NEVADA LAD 2ND, consigned by W. J. Bemmerly; NEVADA LAD 8TH, consigned by J. H. Cazier & Sons Co.; and WITCHFORD, consigned by Diablo Stock Farm, are bulls that would attract attention in any company.

Contributors to Sale:

J. H. CAZIER & SONS CO., Wells, Nev.
H. M. BARNGROVER, Santa Clara, Calif.
J. A. BUNTING, Mission San Jose, Calif.
CHAS. RULE, Jenner, Calif.
W. J. BEMMERLY, Woodland, Calif.
DIABLO STOCK FARM, Danville, Calif.
HEREFORD CORPORATION OF WYOMING, Cheyenne, Wyo.

Every animal sold as a singe lot guaranteed to be a breeder

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Sales Manager:
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BASSETT'S
Advanced Type of Poland Chinas

won at Los Angeles Livestock Show Grand Champion Sow—all championships in sow classes—all boar classes except one and all herd classes. Grand Champion pen of barrows.

Bassett's Poland Chinas are the profitable kind for farmer and breeder alike. Stock for sale at all times.

M. Bassett & Son **Hanford, Cal.**

Strong and Vigorous

Young Poland China boars sired by Joe's King, one of the good boars on the coast. These young boars are just ready for service, will grow big like their sire, and will sire quick growing pigs. These are the kind pork producers want. We will price them right. Write for full description.

Les McCracken ***Ripon, Calif.***

Matchless Big Bob

has proven a sire of remarable big type, growthy Poland Chinas. Recent sales, both public and private, stamp him as one of the leading sires on the coast. Don't you want one of the "make good" kind? Write for description of what you desire.

Geo. V. Beckman & Sons, Lodi, Calif.

Big Type Poland Chinas

At the Big Los Angeles Livestock Show our big type Boar El Profito 296867 was made grand champion of the show. El Profito is a two year old son of the noted Big Long Jumbo, dam Black Big Bone Princess.

One of our leading brood sows, Big Helen 690780, is likewise a daughter of Big Long Jumbo. Have also 2 fall yearlings by Big Bob—one of these has litter by Buster's Model. These are strictly select big type Poland Chinas. Correspondence solicited and visitors welcome. One mile east of town.

Viola L. Renwick, Santa Barbara, Cal.

Big Model Fellow

The boar nobody could fault. At State Fair he was first senior yearling and reserve grand champion. You can easily see he is high, long, deep, and smooth as a pig. Has a great ham and stands upon his toes. He's a breeder and his pigs show his good pork making qualities.

J. F. McSwain, Merced, Calif.

KEEPING AHEAD

That's my motto. The kind of Poland Chinas bred by me is what's keeping me ahead. SMOOTH KING, by Kansas King, a boar of quality, has recently been added to my herd. My kind are your kind. A few choice young boars and gilts for sale. Write,

Eugene Miner **Lodi, Cal.**

Get One Quick

A select lot of young Poland China boars of the correct type. Will make great herd headers. Best judges say they are the kind wanted. Write me for particulars.

J. F. LEHMAN **LODI, CAL.**

See me at the San Francisco Show.

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UNIVERSITY CIRCULAR GIVES MILKING MACHINE RESULTS

That the modern milking machine is a practical and safe labor saving device is the conclusion drawn from experiments with milking machines conducted in the dairy herd at the University of California farm during the past three years, according to a bulletin written by Professor F. W. Woll and just issued by the college of agriculture.

Machine milking gives in general as good results as regards milk production during entire lactation periods as does hand milking, provided the milking is done with equal care in both cases. This result is declared to be in accordance with evidence obtained by other American experiment stations and with practical experience.

According to the bulletin the dairy industry has now entered upon an era of machine milking. Herds of 30 or more cows soon will be equipped for machine milking, and in many cases milking machines may also be introduced to advantage in smaller herds.

There are at present said to be at least eight different makes of milking machines on the market in this state which may be confidently expected to give satisfactory results in the hands of a careful operator. Milking machines call for a fair degree of intelligence and resourcefulness on the part of the operator, although the machines have now been improved in simplicity and mechanism so that they are practically "fool-proof".

The saving in cost of milking by machine over hand milking is stated to be greater in the case of large herds than in small ones and will, in general, be in proportion to the size of the herd. While machine milking will have no appreciable effect one way or the other on the dairy production of the cows or on the general welfare of the herd, with proper care and careful, prompt hand stripping, machines will not long render satisfactory service with careless handling and lack of cleanliness. They are therefore most likely to prove successful when operated by the owner himself or by help directly interested in their success.

RANCHO DEL SUR DUROCS

The big junior champion boar, Orion's King Gano at the Donald H. Graham ranch at Lancaster has got into the limelight as a sire of strictly high class Durocs. Five strings of his young sows are to be retained in the herd as foundation sows par excellence. In breeding form only "Gano" now stands at 630 pounds, with a 200 pound differential for show form. But Graham has planned to keep the boar in service this year, deferring further showyard honors till 1920. This big senior yearling is as smooth and active as when seen at Liberty Fair and is likely to spring one of the surprises of the future. Mr. Graham has another great sire in the senior yearling, California Orion Cherry King, a boar bred in the purple and showing up a line of get equal to the best. A late accession to the herd of brood sows consists of a trio of select sows from middle west herds—Illinois, Iowa and Nebraska. One of these is Sensation Pet, daughter of Big Sensation, a son of Sensation 2d—Nebraska grand champion, 1916. This big, smooth, high backed two year old is raising a fine litter of eight by Chief Sensation, he by Great Wonder I Am—the largest boar of the breed. Mollie's Orion 3d is a fine junior yearling by Van's Orion Cherry King, the boar whose get won 20 prizes at the Illinois state fair last year. Special Critic is a daughter of King the Col. She is raising a nice litter of seven by Pathfinder's Likeness, the Iowa grand champion of 1918. This is the blood that is to put the Rancho Del Sur Durocs at the top of the California line-up for 1920. A dozen crack young boars are now ready to go to new breeding herds. These are from leading brood sows in the herd.

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Big Type Poland-Chinas

of both sexes by these two great boars, LONG JUMBO and YATES' BIG ORPHAN at reasonable prices. Boars ready for service—sows for spring litters. Every animal guaranteed to satisfy.

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SUGGESTIONS AS TO ANTHRAX

The disease of anthrax which has visited a few sections of the state is so dreaded that a report of its occurrence will almost start a panic. It exists in but very few counties and there is no need for undue alarm; in fact, the state department of agriculture issued a statement that "conditions are no worse than in former years and are under better control than any previous year." The report adds:

Prophylactic and control methods are well worked out for anthrax, and even when the disease already exists in a herd it can be checked if proper steps are taken. The following rules have been laid down by Dr. J. P. Iverson, chief of the division of animal industry, in all cases where animals die in a suspicious manner:

Call upon nearest state representative or veterinarian, if one is available.

Cut off an ear of the animal, place it in a fruit jar, seal tight, box up and send by express to Division of Animal Industry, Sacramento. (It is unlawful to send by U. S. mail.)

Burn carcass where it lies at once. Do not skin the animal.

Remove rest of animals to new quarters if possible or keep in corral. Feed hay when available for one or two weeks.

Vaccination for protection and curative purposes requires special advice, and since no two cases can be handled alike it is advised that the state representative be consulted or a reputable veterinarian employed. However, the double spore method has been found uniformly successful and safe to use for protectioon purposes before the disease has made its appearance in a herd.

GUERNSEYS

196 — 368

These figures represent the average butter fat production of a grade herd in Minnesota before and after the use of a pure bred Guernsey bull. The improved herd brought the owner prosperity.—the original, only drudgery. Write to breeders for descriptions and prices and send for our free booklet, "The Grade Guernsey."

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Bred and raised under right conditions. Correct as to type and size.
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Breeding Date Book---FREE
We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do
CALIFORNIA BREEDERS SALES & PEDIGREE CO.
C. L. Hughes, Sales Manager
Sacramento Cal.

WELL FED COW MAKES THE PROFIT

Records of cow testing associations go to show that it is the well fed cow that makes the profit. Often the man who is keeping ten cows would make more profit if he sold two or three of the poorest and gave all the feed to the others, says C. H. Eckles, chief of the dairy division of the Minnesota university farm.

"Owners should see first of all," says Mr. Eckles, "that the dairy cow has the necessary raw material from which to make milk. It requires a long experience for some cattle owners to realize that it pays to feed a cow well. The fact is that the dairy cow is a milk factory and like all factories requires considerable of what is called in connection with business enterprises 'overhead charges'.

"The cow first takes out enough from the ration to maintain her body, and this is about the same whether she is milking heavy or giving only a few pounds. She can produce milk only with that part of her ration that she receives above what is required to support life. A cow of medium quality uses at least half of a full ration to support her body, and the second half of her ration is the only part she can use to produce milk. If she does not receive a full ration, she does the only thing possible to do—cut the milk flow to fit the feed.

"The point is that after going to the expense of feeding the cow enough to support her body, and doing chores for her, and giving her a place in the barn, it is anything but wise to fail to give her as much feed as she can use for producing milk."

THE VALUE OF SILAGE

The specialists of the Kansas agricultural college have said that "the farmer who uses dry feed where it would be possible to use silage is letting dollars slip through his fingers."

There is not anything new in the idea, but there is a lot of importance to be attached to it. Farmers do not build silos because of the cash outlay which a good silo demands, yet they will lose dollars every year by feeding dry feed when good corn silage would cheapen the feed, make better animal growth, lay on more fat or produce more milk.

Some one has said that the average farmer loses more money through careless management than he makes with his labor and from his investment. This may be a guess, yet it is true that the cost of a silo is lost each year or two on many farms because of the tenacious belief in the value of dry fodder and the lack of faith in the feeding value of corn silage. The farmer who is attempting to feed live stock for profit can well afford to make comparisons between farms where there are silos and farms where there are no silos; between cattle fed silage and cattle fed dry feed; between the size of the milk checks from farms that use the silo and the milk checks from the farms that adhere to dry feeds; between communities where silos are the rule and communities that have not yet awakened to the value of silos; between men that use silos and men that do not use silos. There are vast differences, as a comparative study will indicate. Such an investigation would produce the evidence that would be convincing to even the most skeptical.—Kimball's Dairy Farmer.

MACHINERY FOR JAPAN

Japan is at present placing large orders for machinery, especially that pertaining to all branches of electricity and spinning, with a large number of steam boilers. This unusual volume of importation is partially due to commercial development in Japan, but largely to suspension of shipping during the war. The most unusual of these importations is the increase of spinning machinery, and it is evident that the spinning industry in Japan is very profitable.

Mossdale Farm

JERSEY CATTLE **DUROC-JERSEY SWINE**

We believe that the test of a sire lies in his ability to sire uniform, prize winning offspring, and we are proud of the record of Mossdale sires.

Jerseys---

Our herd bull, JOLLY SENATOR RALEIGH, was never defeated in class as a yearling or as a two-year-old and this year he was grand champion, as a three-year-old, at the California State Fair, the Kings County Fair and the Fresno Fair. And at each of those shows his get won the get of sire class.

Duroc-Jerseys---

The record of Mossdale Durocs at recent fairs is proof of their merit. Freddy You'll Do, our herd boar, sired the winning get of sire group at the above fairs.

We can furnish young things of either breed at prices that are attractive. Write us your wants.

See Mossdale Exhibits at Los Angeles and San Francisco

J. E. Thorpe Mossdale Farm Lockeford, Calif.

Going!! Going!! in Our Big Fall Public Sale, November 11
24 SPRING BOARS—6 SPRING GILTS
Duroc-Jersey Spring Boars

2 by Uneeda Orion by High Orion.
5 by Uneeda King of Orion 8th by King of Orions.
3 by Valley View's Orion, grandson of Orion Cherry King Jr.
3 by Sammy King's Col.
6 by Uneeda Model Col, litter brother Grand Champion Sow California 1918.
4 by Crimson Col. by Uneeda King's Col.
1 by Invincible King's Col., dam by Cherry King Orion.
6 gilts by Sammy King's Col., dam granddaughter of Orion Cherry King Jr.
Dams of these pigs are by Cherry King Orion, High Orion, King's Model, and other noted boars.

Auctioneer, ORD L. LEACHMAN
W. T. Hollingshead & Sons
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Duroc-Jersey bred sows and gilts bred to our best boars including the Grand Champion at the 1919 state fair. These are just the kind to go on and make you a lot of money. Our reputation for fair dealing stands behind every animal we sell. Remember you are buying from the

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Write for what you want immediately.

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Willows, California

Greenwood Farms
GOOD JUDGES
say our young Duroc-Jersey boars are the best they have seen this year. We can't keep them all so will sell our prize winners. They are sired by JOHNSON'S DEFENDER JR., one of the Coast's greatest sires. Let us describe one to you.
H. C. Witherow, Mgr. Live Oak, Sutter Co., Calif.

Gardiner Duroc-Jerseys
are the kind good judges and our satisfied customers say are the right kind. We have formed the habit of selling Duroc-Jerseys that make good. If you want this kind write us.
The Gardiner Ranch R.F.D. 4, Sacramento, Calif.

WHAT DO YOU WANT?
We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.
George Junior Republic Chino, Calif.
also Breeders of Holsteins

Butte County Herd
Of the right kind of Duroc-Jerseys. Butte's Golden Pet a 700 lb. sow, with the largest bone and best feet of any sow on the Coast. More in the herd of like calibre. Write me for young stock.
W. V. BENNETT Nord, Calif.

Best in Durocs---The Corn Belt Herd
Pathfinders and Sensations in the ascendency
This herd successfully shown at Los Angeles and San Francisco, 1919.
ROY E. FISHER Lincoln, Neb.

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For Sale—or Part Exchange—140 acre. best combination ranch property in California. $24,000, half cash, balance at 6½ per cent. Or will sell on contract, $7000 cash down, balance at 8 per cent. Would take in residence or country property, well located, improved, any good section of California, to five to ten thousand. This is the surest chance to make big money for any investment in California; firstly, the property is offered 40 per cent. below anything of equal value; the property can easily be made salable at $500 an acre within three years and will finance itself in so doing; it is no desert proposition or out in the wilds; location approximately 100 miles from L. A., 12 miles from ocean air line; no better all-the-year climate anywhere; practically on state highway; two miles to P. O., depot, Association packing house and cannery, grade and high schools (bus picks up school children). 75 to 80 acres of this land is proven highest grade citrus land; frostless—lemons adjoining; equally good for other trees; no hardpan and no blasting for trees; grow any kind of crop right through winter months—vegetables, early potatoes, etc. Good nut land; 25 to 30 acres available for alfalfa, largest portion of which will not require any irrigation, balance with water lift not to exceed 20 feet—alfalfa adjoining. Large natural hog pasture with perpetual feed, water and shade. Perfect conditions for poultry, turkeys, geese, ducks. Any farm crop which will grow in California will do well on this place, it is so diversified; large and close markets. More water than you can ever use two sides of property—and no deep wells. Land now practically all under cultivation. There is on the place at this time a large quantity of feed for hogs, poultry, sheep, stock, worth at least fifteen hundred dollars if utilized right here—which goes in free. Also good heavy work horse and farm tools. Few acres of nuts growing. New buildings; house, grounds nicely improved with ornamental trees and shrubbery. This property is offered on account of ill health of owner and priced on basis of a quick sale and doing business direct—no commission—and a rare opportunity for a man who can raise $7000 to $12,000 cash. C. E. HOWLAND, Fallbrook, California.

AGED OWNER SELLS 345 A.
4 HORSES, 23 COWS AND
9 heifers, bull, calves, poultry, wagons, engine, binder, drills, complete implements, milk cans, crops, included to quick buyer, all for $7000, easy terms. Convenient railroad and banking town. 150 acres strong soil tillage, 75-cow wire-fenced pasture, wood and timber should pay for farm, milk checks running $500 monthly. Good 10-room house, big basement, barn, corn, hog houses. Details page 23 Strout's Fall Catalog 100 pages equipped bargains; copy free. STROUT FARM AGENCY, 831 A. G. N. Y. Life Bldg., Kansas City, Missouri.

For Sale—One of the Best improved 60-acre ranches on State Highway in Tehama County, California; high class neighborhood. All under irrigation at one dollar per acre yearly; no better soil in the State; big income property, not less than $5000 per year. 35 acres alfalfa, 10 acres orchard, almond and Franquette walnuts, 11 years old; 2 acres fine table grapes; good buildings. Old age reason for selling. Act quick if you want a fine home at a bargain. For particulars and terms write. Box 324, Proberta, California.

For Sale—676 Acres of the best land in Eastern Wisconsin, in the heart of the best dairy country in the United States. Land will produce fine crops of corn, wheat, oats, barley, potatoes, sugar beets, etc., and is suitable for general farming, cattle, hogs, or sheep. One mile to station and town, 45 miles to beet sugar factory, 15 miles to city of 30,000. Artesian well on place. John Grosse, Little Suamico, Wisconsin.

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Is worth her weight in gold particularly so if she is royally bred. This is the record of Symboleer's Belle. I have a boar pig from her last litter that is a dandy. If you act quickly you can have him for $75.00. SANDERCOCK LAND COMPANY, 23 Montgomery Street, San Francisco. In charge of Natomas Land Sales.

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Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

President's Model by Big Bone Leader heads our big type Poland-Chinas. He was grand champion boar at Riverside. Daughters of Long Smooth Jumbo in herd. Plenty of good pigs for the trade. H. Christiansen, Riverside, California.

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

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for sale. We are now hatching 5000 chicks each week for the fall season of Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas, Brown and White Leghorns. Next spring we expect to hatch 25,000 of the above mentioned varieties of chicks every week, and we will also have limited numbers of White Minorcas, Buff Leghorns, White Rocks, and White Wyandottes; ducklings and turkeys in season. Our chicks have brought us many repeat orders from our customers for next season and we are now booking orders for 1920 delivery: If you are in the market for chicks we would suggest that you place your order now; a small deposit will hold your chicks. REDWING HATCHERY, 2030 E. Florence Avenue, Los Angeles, California.

Baby Chicks For Sale—200,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock; 252-294 egg strain, for delivery during November and December. November prices; 25, $5.00; 50, $10.00; 100, $18.00. Special prices 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Now booking orders for Spring 1920 chicks. Established 1898. Must Hatch Incubator Co., 438 Seventh St., Petaluma, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles

Order Baby Chicks Now, for immediate or spring delivery. Several varieties. Safe arrival guaranteed. Write for free circular. R. I. Red, Buff Orpington and White Rock cockerels now ready for shipment. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto, California.

Single Comb White Leghorns and Barred Rocks—For sale, Hoganized and closely tested hens and 200 pullets, some laying. Also standard quality Barred Rock cockrels and pullets. Frank P. Penn, Porterville, California, care of White River Stage.

S. C. White Leghorn Chicks by 100 or 1000 lots from our A-1 Hoganized and trapnested stock. Place orders early for fall and spring delivery. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California

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Breeding Cockerels—Barred and White Rocks, Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Day old chicks in season. Enoch Crews Seabright, California.

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Wanted—150 Rhode Island Red or Barred Rock pullets six mos. or older. Also 150 Rhode Island Red or Barred Rock yearling hens. In lots of 25 or more. State lowest price, addressing C. T. Johnston, Hemet, California, Route A.

Wanted—A Few Thousand Malaga and Thompson Seedless Grape Vines. Some Umbrella Trees. Grape Fruit and Apricot Trees. Imperial Valley Nursery and Seed House. El Centro, California.

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Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times Third sale at the Ranch—all breeds—April 17 1920. W. P. Dwyer and W. S. Guilford Box C, Butte City, Glenn County, California.

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For Sale—High grade Toggenburg Goats, 3 milking now, 3 to come fresh in February and 6 doe kids from 3½ to 9 months old. Phone Ontario 632-J—Louis L. Gakle.

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Golden Glen Stock Farm registered Jerseys and Shropshires. Geo. W. Thomas & Sons, Riverside, California.

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Our Monthly Magazine on rabbit raising sent one year for 12 cents or names and addresses of five friends raising rabbits. SANDERSON, Eagle Rock, California, Dept. C.C.

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Tanks, Pumps, Windmills, Ranch Tools Rebuilt, guaranteed do same work as new, save half. No profiteering. Compare prices and material. Make new galv. tanks, 100 to 2000 gals., save 20 per cent. Why pay more? See bargain prices ads L. A. Sunday papers. DEMMITT CO., upstairs, 120 N. Main, Los Angeles.

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For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

For Sale—Kirstin Stump Puller — Drum type, one man, good as new. Will sell cheap. Dr. Budan, Huntley Apartments, Los Angeles, California.

For Sale or Trade—A-10-20 Mogul Tractor used one month. Want auto or city property. S. Q. Shannon 951 South Flower, Los Angeles.

For Sale; Titan Tractor 10-20, good as new. Cheap, 901 E. Eighth St., Wardrobe Laundry, Los Angeles.

For Sale—Neilson Tractor in good condition. Mrs. Lena Clendenon, Palms.

HOGS

HAMPSHIRE HOGS
I have for sale some very fine Hampshire Hogs of all ages some of them being direct descendents of General Tipton and Sioux Queen, both grand champions at the World's Fair. I also have an excellent boar that on account of being too nearly related to my herd, I am forced to dispose of him. The hogs can be seen at Wildomar, 12 miles from Murrietta, or apply to Fred T. Hughes, 1466 W. 28th Street, Phone West 3924, Los Angeles.

Chester Whites—Billiken Type. Big winners at the State Fair. 15 extra spring boars sired by the Grand Champion and out of Billiken sired sows. A few spring sow pigs, same breeding. Three bred sows—two bred gilts. Billiken blood. Write for special catalogue and price list. C. B. Cunningham, Mills, California.

For Sale—Pure bred Chester White pigs, nine weeks old. Best of blood lines. Prices right. J. H. STONER, Babtiste, California.

Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet California

TREES

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Nursery Stock. Apples, pears, peaches, cherries, prunes, plums, berries, etc. OURS IS MAIL ORDER SYSTEM. IT SAVES YOP MONEY. Write us now for Planters' list. 20 years in business. Carlton Nursery Co., Carlton, Oregon.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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MATHER'S AVOCADO NURSERY.
P. O. Box 585, Pasadena, California.

For Sale—3500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

Mail us your exposed Film Pack. We develop twelve exposures, size 2¼ x 3¼, 25c.; 2½ x 4¼, 30c.; 4 x 5, 35c. Prints on Velox Paper at reasonable prices if desired. The best grade of work.

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510 South Broadway, LOS ANGELES, CAL.

Household Department

SUNFLOWERS

My tall sunflowers love the sun,
Love the burning August noons
When the locust tunes his viol,
And the cricket croons.

When the purple night draws on,
With its planets hung on high,
And the attared winds of slumber
Wander down the sky.

Still my sunflowers love the sun,
Keep their watch and ward, and wait
Till the rosy keys of morning
Open the eastern gate.

Then when they have deeply quaffed
From the brimming cups of dew,
You can hear their golden laughter
All the garden through.

—Clinton Scollard.

THE DEBT

IT HAD been a wonderful season for nuts. The trees had so outdone themselves that it was clear no nut-eating creature need go hungry that winter. Nevertheless, just for sheer fun, boys and squirrels continued to hunt until there was scarcely a nut left on tree or ground.

Even then Chester Brown was not content. He went out one last time with his big sack, determined to fill it somehow and add it to his store in the feed room.

After he had searched in vain for a long time, he scrambled up to a rocky ledge not far from a big hickory-nut tree. To his great surprise he stumbled upon a hollow that extended back under the ledge as big as a small-sized cave. It was half full of dry leaves.

"Ha, here's a find!" said Chester to himself.

He scooped up the leaves in great handfuls and threw them away. At the last handful he chuckled aloud; the bottom of the hollow was lined with big ripe nuts!

Chester knew it was Johnny Squirrel's whole winter supply that he had found, but the sun was nearly down and he was very hungry; so he set to work at once to transfer the stock from the hollow to his sack. There were just enough to fill the sack.

As he rose to his feet he heard a shrill chattering not far away. Looking up, he saw Johnny Squirrel perched on a branch of the hickory-nut tree, protesting shrilly. Chester hesitated. How would it feel to have a huge creature come and take his stock of nuts, he wondered. That would be hard to stand, he knew; in fact, he doubted whether he would stand it. But the next minute he had flung the sack over his shoulder and was off.

That night he dreamed that Johnny Squirrel was chattering at his window. It was only a shutter scraping, but it waked Chester wide, and he lay for some time thinking about the matter of the nuts. The next morning he did not have the heart, somehow, to pour the nuts on the feed room floor with the rest of his supply. And all day he thought about the angry little squirrel face that had peered down at him from the limb of the tree.

The second night it snowed silently for hours, and by morning there was a deep snow on the ground. At breakfast Chester looked up from his oat-meal and cream.

"Father, will this snow hurt things?" he asked.

"Oh, no," was the reply. "It's good for the wheat, and—"

"I mean animals."

"The animals will stay in the barn."

"But wild things, like—birds," stammered Chester, looking hard at his spoon.

"The birds have all gone south by now."

"But the—squirrels." At last the right word was out.

His father laughed. "Bless you, boy, we don't have to worry about squirrels! If the squirrels didn't have foresight enough to lay in a good supply of this year's huge nut crop, they have no one but themselves to blame."

Chester shoved away his oatmeal. "I have something important to do," he murmured, as he left the table.

Ploughing his way through the snow to the barn, Chester loaded himself with an armful of straw, a shovel, and the sack of nuts, and then set off for the hickory woods. When he reached the rocky ledge he knew, by the tiny tracks in the snow, that a visitor had been there before him. Evidently Johnny Squirrel, hoping against hope, had come back again and again to see if a single nut had been left.

Two Helps in the Nursery

Chester's heart smote him. "He must be nearly starved," was his thought.

The mouth of the little cave was choked with snow, but when Chester had shoveled it away he found the hollow dry as a bone. He poured the nuts quickly into the hole and covered them deep with the straw he had brought.

"Whoop!" he said, as he straightened up. "I'm glad that's done!"

Just as he turned to go he heard a slight stir behind him. Whirling round, he saw Johnny Squirrel perched on a limb, watching him. This time the little squirrel was silent, but his black eyes were keen with interest, and he looked as if he could hardly wait for a chance to rush down and see what had happened.

"They're all back, old fellow!" Chester called. "Every single one of them! If you don't believe me, come and count 'em yourself."

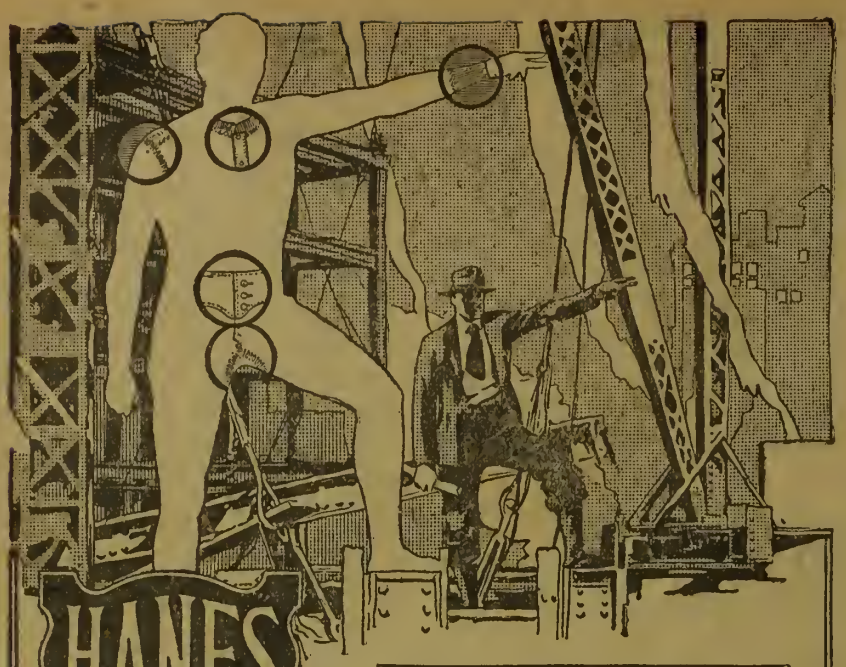
As he hurried back through the deep snow he heard Johnny Squirrel chattering loudly; but this time his chatter had a friendly sound.—Youth's Companion.

NOW WHAT CAN WE DO ABOUT IT?

Here is a letter from a Julian reader:

"The Cultivator is a good paper for ex-school teachers. I know, because I'm one.

"During my one year of housekeeping this paper has been a friend in need. It has helped me cook, clean, paint, garden and care for chickens. I sent for the farmers' bulletin at your suggestion and find it very useful in my canning. Now isn't the Cultivator going to help me raise my baby? Why couldn't you have a baby department? Aren't they valuable farm products? We think so."



HANES Trade Mark

Guarantee—*We guarantee Hanes Underwear absolutely—every thread, stitch and button. We guarantee to return your money or give you a new garment if any seam breaks.*

ELASTIC KNIT UNDERWEAR

Warning to the Trade—Any garment offered as "Hanes" is a substitute unless it bears the "Hanes" label.

Quality and care put into Hanes Underwear will astound any man!

You'd rate Hanes winter Men's Union Suits and Shirts and Drawers *sensational value* if you followed the bales of fine, long-staple cotton from the moment they entered the Hanes Plant until you saw Hanes Underwear packed into boxes for shipment all over the nation!

What goes into Hanes in quality and workmanship comes out to you in extra-wear, extra-comfort, extra-warmth!

Read every detail and compare with the circles in the diagram figure above, because you should understand that Hanes hands you: *Guaranteed* unbreakable seams, with reinforcements at every strain point; buttonholes last as long as the garment; elastic knit collarette that won't gap; shape-holding elastic knit shoulders; snug-fitting three-button sateen waist-band; elastic knit wrists; pearl buttons sewed on to stay!

Hanes Union Suits are the best at the price. They have the desirable features of Hanes Shirts and Drawers *with a closed crotch that stays closed!*

If your dealer cannot supply you with Hanes write us immediately.

Union Suits for Boys are as wonderful value as are our men's garments. To mothers and fathers Hanes boys' Union Suits are superb. Cozy, fleecy warmth and the finest workmanship put these boys' suits in a class distinct from all others. *They certainly do stand the wear and wash!*

P. H. HANES KNITTING CO., Winston-Salem, N. C. New York Office, 366 Broadway

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and let us tell you why you should get your

PIANO or Player-Piano

from the

Baldwin Dealer

THE BALDWIN dealer in your section is the direct representative for the Baldwin products. His instruments come to him directly from the great Baldwin factories in Cincinnati and Chicago. These instruments therefore are placed in the home at the lowest possible cost.

The Baldwin products are made in their entirety in these factories. Every detail of the design and construction is strictly Baldwin and is guaranteed by Baldwin. Baldwin aims to give you the very best value at the price you pay and is able to do this because of immense output and distinctive selling plan.

The Baldwin dealer has the kind of instrument you want—Grand or Upright Piano in the Baldwin, Ellington, Hamilton or Howard brand and the Manualo, the player-piano that is all but human.

Send for the Song Book today. Contains complete words and music of all the favorites that will live forever. 26 of them.

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New York Cincinnati Chicago St. Louis
San Francisco Indianapolis
Louisville Denver Dallas

Send me the Song Book free and postpaid.

Name.....

Address.....

P. O.....State.....

Now the aim of the household department has always been to serve as an exchange for helpful ideas and to find answers to puzzling questions. Can we meet the need of our Julian home maker? This is squarely up to the mothers who read this department, for the household editor, herself an ex-teacher, knows something of cooking and making over and general household managing but, unfortunately, nothing of babies. But she feels that, as in the past, Cultivator readers who do know will help.

If our Julian reader will tell us her problems we will present them to our readers for answer by those who know through experience. Meanwhile let's have some helpful suggestions without waiting for the questions to be asked.

Short letters of not more than 200 words are what the Cultivator wants in this case. There is no limit to the range of information wanted. Feeding, clothing, sleeping, bathing, baby book of grandmothers's way, training baby or being trained, orange juice, lime water, visitors, and anything else that concerns mother or baby will be to the point.

For such suggestions received in this office before Saturday, November 15, the Cultivator will give extension of subscription. With your letter please send name and address of one to whom you wish subscription credited. Please write on one side of paper. Address Household Department, California Cultivator, Los Angeles, California.

As a starter we give here a very practical suggestion sent to this office by a reader of the Rural Californian, at that time also published by the Cultivator Publishing Company.

* * *

Two Helps in the Nursery

(Photograph on preceding page and description furnished by Mrs. Geo. H. Pettengill, Los Angeles.)

I have two pieces of nursery furniture which have been the means of conserving half of my physical energy, and if you are the mother of a babe or small child I am sure you will agree with me.

Instead of the customary befrilled and dust collecting basket to contain the baby's toilet articles I designed the little toilet table shown in the illustration. It is on ball bearing castors and may be rolled about at a touch. The drawers are cretonne lined and contain all the articles used in giving the bath, one containing also a stationary pin cushion. The table is 14 by 25 inches and 27 inches high. The drawers are six inches square.

The other article, my "changing table," is set close to the wall to keep baby from rolling off one side, while a five inch board does similar duty on the other side. If you are in the habit of stooping over a bed many times a day your back will appreciate this convenience. It is 18 by 36 inches and 36 inches high, for my height, five feet eight inches. Make yours to fit your back. I have a cretonne pad on top of the table and a pin cushion tacked across the right hand end.

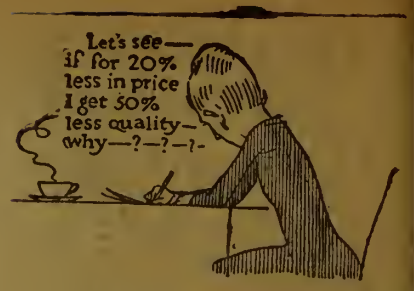
A trap door eight by 12 inches, hinged four inches from the right hand end, serves the double purpose of "nursery chair" for the very young infant and is a great help when a colon flush must be given hurriedly, the diaper shelf, of course, being used for the receptacle.

HOUSEHOLD QUERIES

Canning Pimentos

Can you tell me how to can pimentos? We have a fine lot this year and are very fond of them. Would like to put up a good quantity. Several of my neighbors also want to find recipe. We can find nothing in cook books—Subscriber, Los Angeles.

Here are recipes for canning and pickling: The pimentos are much richer and finer flavored if allowed to fully ripen before canning, but if caught by frost before ripening they are very good. To can whole peppers cut slice off stem end so seeds and stringy portion may be removed, then pour boiling water over. Let stand five minutes, then pack in small jars, pint or half pint. Fill with boiling



"Cheap" tea isn't cheap, not really; it makes fewer cups per pound than good tea, and you don't even get what you pay for—the rich full-flavor of fine tea. You do get tannin, which is bad for the health.

Your really cheap tea is Schilling Tea. It costs only ⅓ cent per cup, and you get what you pay for—the true tea-taste.

There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

"Ask Barker Bros."

This is a safe way to settle any question about the furnishing or refurnishing of all or part of your Home.

This is an organization of 1,300 Home making enthusiasts. A helpful, appreciative understanding of the many problems met in making a better Home exists throughout Barker Bros'. store.

Making better, more beautiful, more comfortable Homes is one part of our business. Helping to take the Drudgery out of housework is the other part.

Our mail brings us daily throughout the year questions from puzzled home makers everywhere in the West—questions as to the solution of some important problem of Home furnishing or Home efficiency.

Barker Bros. consider it a part of their duty to give careful, detailed answers and suggestions by mail to all such questions. It is your welcome privilege to write us for information on any particular Home subject in which you are interested. Or if you wish to receive our Magazines and Special Literature as issued from time to time, just say,

Put my name on your Mailing List.

Barker Bros ESTABLISHED 1880

Complete and Helpful Furnishers of Successful Homes

722 South Broadway

Los Angeles, Cal.

Save 1-2 on Fuel

CHEAPEST HEAT YOU CAN BUY

The Sievert Oil Burner burns distillate costing only 7½ cents per gallon in cook stoves, heaters, furnaces, pasteurizers, boilers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes, address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

The Cultivator Patterns

3027-3004. Costume for Home or Business. Waist 3027 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require 3½ yards of 27 inch material. Skirt 3004 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Size 24 will require 2½ yards of 48 inch material. The width at lower edge, of skirt, with plaits extended is 2⅛ yards. Two separate patterns 10 cents for each pattern.

3029. Girls' Dress. Cut in 4 sizes: 8, 10, 12 and 14 years. Size 10 will require 4 yards of 36 inch material. Price 10 cents.

2672. Ladies' Apron. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42, and Extra Large, 44-46 inches bust measure. Size Medium requires 4 yards of 36 inch material. Price, 10 cents.

2662. Child's Night Drawers. Cut in 6 sizes: 2, 4, 6, 8, 10 and 12 years. Size 6 will require 3¾ yards of 36 inch material. Price, 10 cents.

3021. A Smart Coat. Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 will require 6½ yards of 52 inch material. Price 10 cents.

3009. Girls' Dress. Cut in 4 sizes: 4, 6, 8 and 10 years. Size 8 will require 2¾ yards of 36 inch material. Price 10 cents.

3006. Ladies' House Dress. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 6½ yards of 36 inch material. Width of skirt at lower edge is about 1¾ yards. Price 10 cents.

3031. Child's Dress. Cut in 4 sizes: 2, 4, 6 and 8 years. Size 4 will require 3 yards of 27 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest Chicago styles, all pattern orders are filled in Chicago. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
California Cultivator
Los Angeles.

CATALOGUE NOTICE

Send 10 cents in silver or stamps for our Up-to-Date FALL AND WINTER 1919-1920 CATALOGUE, containing 550 designs of Ladies' Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various, simple stitches) all valuable hints to the home dressmaker.

water and place in boiler. Boil for one hour for three successive days or give five hours continuous boiling on one day. The pimentos mold quickly after opening jar and they are so rich that a large quantity is not wanted at one time, so it is better to can them in small containers.

Some prefer the pickled to the simple canned pimentos. Prepare for cooking as directed above. Cover with boiling water for three minutes, drain and plunge in cold water. Again drain and pack solidly in small jars. Boil 15 minutes the pickle to pour over peppers, made in the proportion of one quart vinegar to two cups sugar. Pour this boiling hot over the peppers packed in jars and let overflow the jars to be sure no air space is left. Put on covers and store in cool dry place.

Queen Olives

Will you kindly publish recipe for pickling Queen olives for home use? —Subscriber, Lindsay.

Olives practically identical in character and quality with the imported Queen olives can be made by fermentation subsequent to pickling. The olives are picked after they have reached good size but before they show any sign of coloring, either red or yellow. They are placed in a two per cent lye (two and one-half ounces of lye per gallon of water) and left until the lye reaches the pit. The lye is then replaced by water changed twice daily until all taste of lye has disappeared. They are then placed in seven per cent brine (nine ounces of salt per gallon of water). All these operations should be carried out with as little exposure to the air as possible. The olives are kept in the brine in closed receptacles at ordinary room temperatures until fermentation has developed the characteristic flavor and acidity. This will require from three weeks to several months, according to the temperature and the amount of flavor desired. When the fermentation has reached the desired point, the brine is taken off, strained or filtered and boiled. The olives are rinsed quickly with water and then covered with the hot brine. They may be kept in barrels or preserving jars without further treatment. If intended for shipment or to be kept for a long time, they may be placed in glass preserving jars or lacquered cans. These are then filled with the boiling brine, sealed and heated to 212 degrees Fahrenheit for about 20 minutes.

NEW USES FOR BREAD CRUMBS

Passed on to Cultivator Readers

Fried With Bacon

Dry bread cut in squares and fried with bacon takes up the fat, tastes delicious when hot and fresh and makes the bacon go farther.

Dumplings in Soup

Bind dry bread crumbs with beaten egg. Shape like noodles or drop from spoon into the boiling soup.

In Salad

Mix a few fine white bread crumbs through salad to absorb some of the juices which otherwise might separate from the dressing and look watery.

Over Pie Crust

Before filling pie crust brush over with egg and fine crumbs. The crumbs will take up the moisture that sometimes makes the under crust soggy. The egg will also glaze the surface and help in the same way.

TO FRESHEN VELVET

The pile, or nap, can be raised by careful steaming. Lay wet cloth over back of velvet; lift the two together and pass over an inverted hot iron, holding the wet cloth next the iron; or hold the velvet stretched over the steam from a vessel of hot water or a steam spreader on the spout of a teakettle, with the back of the velvet toward the steam.

Dust may be removed by brushing, then sponging carefully and steaming.

ONE CONSOLATION

Youths sowing their wild oats nowadays can't mix in so much rye. —Boston Transcript.

"Ring the dinner bell"—and

Bake the biscuits big, brown and quick

in the air-tight oven of your Majestic Range. The Majestic bakes everything—meats, breads, cakes, pies, puddings—wonderfully fine, because the Majestic construction makes it so easy for you to control the exact heat desired. All joints are riveted air-tight, and the flue lining is pure asbestos. No part of the Majestic Range can get rickety or loose. No heat can escape. With economy of fuel, you can have a slow, medium or hot oven, as wanted—and bake to your heart's delight.

Doors and Splasher Back Paneled in White Enamel
or in Blue Enamel, if desired.

This lustrous enamel finish is the final touch to Majestic Range *beauty*. The smooth nickel trimmings; the natural finish charcoal iron, rust-resisting body; the blue burnished cooking top—are all so easy to keep newly bright, attractively clean.

There are more than a score of distinct *supreme* advantages in the Majestic Range. You must see and examine the Majestic at your dealer's to appreciate them all—and to realize that the Majestic is the *greatest* range value.

A Majestic dealer in nearly every county in 42 states. See the Beautiful Majestic shown by the Majestic dealer in your locality. Many styles and sizes. Prices the same everywhere, freight considered.

Write us for Free Majestic Booklet.

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Dept. 203 St. Louis, Mo.

Great Majestic
The Range with a Reputation

Real comfort–

A good oil heater filled with Pearl Oil assures you real comfort at the touch of a match. It provides instant portable heat without smoke, dirt or dust. The oil is consumed only when heat is needed.

Pearl Oil is refined and re-refined to be pure and clean burning. Sold in bulk and five-gallon cans. Save money by buying in bulk. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.

STANDARD OIL COMPANY
(CALIFORNIA)

FINER THAN EXPECTATIONS

The New

GRANT SIX

Those who read the announcement of the new Grant Six expected a great deal of the new car.

They said, that if it was as good as the description suggested it *must* be an unusually fine car.

Now the Grant Six has been seen and examined by thousands.

And the general opinion everywhere expressed is that it exceeds everything claimed for it.

They tell us it is even larger, handsomer and more powerful than they expected.

They say the finish, the trim, the upholstery are simply beyond comparison with anything offered for similar price

They are particularly enthusiastic about the beautiful body design and the wonderfully sturdy chassis.

And always they comment on the infinite care and thoroughness expended in details ordinarily slighted.

Because we are building a car of character—a car of the utmost refinement, a car that reveals its quality instantly by its performance and construction it is only fair to say we greatly appreciate the splendid reception given this new model.

The demand for it is so great that we suggest that you place your order as far as possible in advance of your requirements.

Five Passenger Touring Car . . .	**$1495**
Roadster	**$1495**
Four Passenger Coupe	**$2450**
Five Passenger Sedan	**$2450**

Prices f. o. b. Cleveland

Write for literature giving full information, and name of nearest Grant Dealer.

GRANT MOTOR CAR CORPORATION

CLEVELAND, OHIO

Third Sale of Shorthorns

Under auspices of California Shorthorn Breeders' Association will be held on

Thursday, November 6th, 1919

at 1:30 P. M Sharp

at California Building, Exposition Grounds, SAN FRANCISCO

In conjunction with the San Francisco Livestock Show, Nov. 1st to 8th, 1919

30 Head of Cows and Heifers 10 Head of Bulls

The entries to this sale have been selected both from the standpoint of individuality and breeding, and represent unquestionably the greatest lot of Shorthorns ever offered at public sale in California.

The offering comes from the herds of the following well known breeders:

ORMONDALE COMPANY, Redwood City, Calif.

CALEDONIA FARMS, West Sacramento, Calif. (Edward Cebrian)

ESTATE OF T. B. DIBBLEE, Santa Barbara, Calif. (San Julian Ranch)

PACHECO CATTLE COMPANY, Hollister, Calif.

T. T. MILLER, Hollister, Calif.

For catalogue address **California Shorthorn Breeders Association**

222 Sharon Building, San Francisco Auctioneer: EARL GARTIN, Greensburg, Ind.

Los Angeles Markets

Los Angeles, October 29, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 64 lb.

Dairy Exchange prices last week on extras:

Oct.	22	23	24	25	27	28
'19 ...	64	64	64	64	64	64

CHEESE

Brokers' prices:

California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 74 dozen; case count, Produce Exchange closing price 67 dozen; pullets, Produce Exchange closing price, 59 dozen. Pewee pullets, 49.

Dairy Exchange prices last week on extras:

Oct.	22	23	24	25	27	28
'19 ...	72	72	72	67	73	74

POULTRY

Prices to producers: Hens, lt. 32; heavy, 33; colored over 4 lbs., 36; broilers, 44; fryers, 32; roasters, 32; old roosters, 19; capons, 42; ducks, old, 23; ducklings, 30; ducklings, Pekins, 3½ up, 33; geese, 25; turkeys, 35@37; squabs, 43@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 12.50; 150 to 225 lbs., 13.00.

Cattle (on foot, gross weights): Steers, good, 10.50@11.00; medium, 9.50@10.00; heifers, good, 8.50@9.00; fair, 7.50@8.00; cows, fair to good, 7.50@8.00; bulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00@13.00; 175 to 225 lbs., 10.00@11.00. 14.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@15.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock October 28, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate. New stock, Stockton; Burbank, best, 3.00@3.25; others 2.75 per cwt.; Russets, 2.80@2.90 per cwt. Local: Lug boxes, 1.00@1.15.

Carlot Sales: Closing prices Monday, Stockton: Burbanks, demand and movement moderate, market steady, little change in prices; sacked per 100 lbs., fancy 2.70@2.80, mostly 2.70@2.75; choice, no sales reported. Idaho: Russets, demand and movement slow, market dull, prices slightly lower; sacked, per 100 lbs., fancy mostly, 2.60; choice, no sales reported. (Sales to 5 p. m. Monday.)

Sweet Potatoes: 70@80 per lug; 2½@2¾ per lb.

Carloads, f. o. b. usual terms. Demand and movement moderate, market steady, prices slightly lower, 2.10@2.25 per cwt.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes 95@1.00 per lug box; 3.50@3.75 cwt. Yellow varieties, 3.90@4.00 per cwt; lug boxes, 1.00.

Carlots: Demand and movement moderate, market strong. Very few sales. Carlot Sales: Closing prices Monday, Stoctkon: White Globes, sacked, per cwt., mostly 3.50; Yellows, high as 4.00; Browns, no supplies.

White Globe, cwt. sack, 2.75. Yellow, 2.50@3.00; Brown, 3.00@3.25.

Garlic: Local, per sack lots, 30.

VEGETABLES

These are the actual prics obtained October 28, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 8½@10; fancy shipping, 11; Limas, 8½@10. 8@10; fancy shipping, 10.

Cabbage, lb., 1¾; crate, 1.25@1.50; ton, Winningstadt, Cannonball, 26.00@28.00.

Carloads, f. o. b. usual terms. Demand and movement moderate, market steady. Winningstadt and Cannonball, 26.00@28.00 per ton.

Carrots, doz., 35@40; lb., 3.

Cauliflower: Local, per doz., 1.25@1.35; field crates, best 2.50@2.75; other 2.00@2.40.

Carloads f. o. b. usual terms. Demand and movement moderate, market steady; crates, Snowball, mostly 1.50@1.60.

Cucumbers: Local stock, lug boxes 80@85. Shipping stock, lug, 1.00@1.10.

Celery: Local stock 1.00@1.25 per dozen bunches. Crates, 3.75@4.00; fancy shipping stock, 4.50@4.75.

Carloads f. o. b. usual terms. Demand moderate, movement limited, market steady. Crates, Golden Heart, 4.50@5.00 crates included, mostly 4.50.

Corn: Roasting ears, lug of 3 dozen, 90@1.10.

Eggplant, best, lb., 3@4.

Peppers: Bell, 70@75 per lug box; oth-3@4. Shipping stock, high as 1.00 per lug; 5@6 lb.

Peas, local, lb. 10@13; best, 15.

Lettuce, local, cr., 1.50@1.75; doz., 50@55; shipping, 2.00@2.25.

Carloads f. o. b. usual terms. Demand and movement moderate, market strong. California crates, Los Angeles or New York Market (Iceberg), wide range in prices 2.35@2.60, mostly 2.40@2.50.

Peas, local, lb., 10@12; best, 13@15.

Rhubarb: Local, box, 1.00@1.25.

Squash: Summer, lug, 80@1.10; others, 60@75.

Spinach, doz., 20@40.

Tomatoes: Lug boxes, ripe stock, best 1.00@1.10; others 65@85. Shipping stock, 1.25@1.35.

Carloads f. o. b. usual terms. Demand very strong, movement moderate, market active, prices advancing. Lug boxes. Stones wrapped pinks and greens, in straight cars, 1.45@1.50; in mixed cars, 1.50@1.60, mostly 1.50.

Turnips, doz., 45@50; others, 30@35.

FRUITS

These are the actual prices obtained October 28, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms; Cash on the walk.

Apples, California: Bellefleurs, 4 tier 1.75@1.85; 3½-4½ tiers mostly 1.65@1.70; Delicious, 3.50; loose, 5@6 per lb. Northern: Jonathans, extra fancy, 3.25@3.55; fancy, 2.75@3.00; loose, 6@7 per lb.; Newton Pippins, lb., 4; Spitzenburgs, 3.25@3.50.

Bananas, 8½@9.

Cranberries: Barrels, 12.00@12.50; boxes, mostly 4.00; 13 lb.

Grapes: Demand and movement light, market firm. Local and Northern stock Per lb.: Tokays, 6@7½; Muscats, 5@6; Malagas, 6½@7½; Black Cornichons, mostly 6@7; Black Morocco, 5@6½.

Nectarines, lb., best 6@7; others, 5@6.

Pears: Northern Bartletts, No. 1, 8@9; No. 2's, 5@6 per lb.; lug boxes, 2.00@2.50; best packed boxes, 3.25@3.50.

Persimmons, lb., 10@12.

Pomegranates, lb., 7@8.

Quinces: Local lug, 1.00@1.25; lb., 4@5 6.25@6.50; loose, 5.00; local, packed, 3.50@4.00; best, 4.00@5.00; loose, 3.00@3.50.

Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1, small ½ lb.

Lemons: Valley stock: Fancy, packed, 46's and 96's, 4.50@5.00; choice, 2.50 up; Seedless, box, 4.00.

Oranges. Valencias, medium fancy, 4.75@5.50; best brands, 5.25@5.75; local pack, 2.50@3.00.

Grapefruit: Local stock, mostly 5.00@6.00; fancy, 64's-80's mostly 6.00@6.50 46's and 96's, 4.50@5.00; choice, 2.50 up.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.

No. 2, 26.

Diamond Brand Buds, 34.

Golden State Buds, 34.

1918 No. 1 price was 28; fancy budded, 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14¼; baby, 13.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	21.00@24.00
Barley	17.00@22.00
Alfalfa	20.00@25.00
Fertilizer Bean Straw	9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, September 24:

Oats, Red, Rustproof, 2.95.

Barley, 3.25.

Corn, Yellow, 2.90@3.00.

Egyptian, 3.27½.

Kafir, Eastern, 3.81¼.

Feterita, 3.20.

Alfalfa molasses, 31.00.

Alfalfa meal, 31.00.

Cotton seed meal, 63.00.

Wheat, field run, price to retailers per cwt., 4.00; recleaned, 4.75 f. o. b. cars U. S. Grain Corp. Sonora, 2.20 per bu.

San Francisco Markets

San Francisco, October 28, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	.66
Firsts	Nominal

Prices extras last week and year ago:

Oct.	21	22	23	24	25	27
'19 ...	65	64	65	67	65	66
'18 ...	61	61	61	..	61	..

Rcts., wk. ending Oct. 27, 2,679 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	.34
Cal. Y. A.	.35
Ore. Triplets	.34
Jack, full cream	.33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	.82
Extras, Pullets	.66½
Undersized	.60½

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago:

Oct.	21	22	23	24	25	27
'19 ...	80	81	80	80	83½	82
'18 ...	81½	81	81	..	81½	..

Rcts., wk. ending Oct. 27, 189,966 dozen.

POULTRY

Wholesale prices are:

Hens, 32; Leghorn, 30@32; colored, 35@36; roosters, young, 34@35; old, 20@22; broilers, 38@40; fryers, 33@34; turkeys, live, broiler, 40@45; old, 38@40; turkeys dressed, young, 50; old, 45; geese, 23@25; ducks, Indian Runner, 18@20; Pekin, 24@26; squabs, 50@60.

Belgian hares, live, 16@17; Jack Rabbits, doz., 1.50@3.50.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 950 to 1100 lbs., 10@10½; do, 1100 to 1300, 9½@10; do, second quality, 8@8½; do, thin, 6@7.

Cows and heifers: No. 1, 8@8½; second quality, 6¾@7¼; common to thin, 4@5.

Calves: Light weight, 11; medium, 10; heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½

Sheep: Wethers, 9@9½; ewes, 6½@7.

Hogs: Hard, grain fed, 100 to 150 lbs., 12½; do, 150 to 225 lbs., 13; do, 225 to 300 lbs., 12½; 300 to 400 lbs., 11½.

Moran @ Co's. live stock market, delivered and weighed off cars at their plant in South San Francisco:

Cattle—Good grass steers, 1000 to 1200 lbs. and over, 9@10; good heifers, 1000 and over, 8½@9; good cows, 1000 and over, 8@8½; medium to good cows, 900 and over, 7½@8; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs—Top packer hogs, hard and well finished, 175 to 250 lbs., 14; 150 to 175 lbs., 13½; 250 to 300 lbs., 13½; over 300 pounds, 12½; under 150 lbs., 12½. Usual dock and price discount for other weights and kinds.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs., Rivers, fancy 2.25@2.50; choice, 2.00@2.25; sweets, 3½@4 lb.

Carloads, Stockton: Haulings moderate; demand and movement moderate; sacked per 100 lbs., Burbanks, quality and condition generally good; No. 1's, 2.35@2.50; No. 2's, 2.00@2.25.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 3.75@4.00; choice, 3.50; Yellow, 2.90; Whites, 2.90; Garlic,

Carloads, Stockton: Demand and movement good, market steady; 100 lb. sacks, Australian Browns, best, 3.75@4.00 Yellow varieties, 3.50@3.75; White Globes, 3.25. Shipment from temporary storage.

VEGETABLES

Wholesale selling price:

Beans: String, 7@10.

Carrots, per sack, 1.00@1.25; long, doz. 40@45.

Cauliflower, doz., 1.25.

Cabbage, doz., 40@50.

Celery, doz., 35@40.

Cucumbers: Per box, 1.00@1.50.

Corn, sack, 2.00@2.25.

Eggplant, southern, fancy, box, 75@1.00.

Lettuce, cr. of 3 doz., 1.00@1.25.

Peppers, Bell, lb., 85@1.00; Chili 75.

Peas, lb., 5@6½.

Pumpkins, per sack, 75@1.00.

Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 1.00@1.25; Bay, 60@1.00.

Squash: Summer, cr., 1.25@1.50.

Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:

Apples: Greenings, 1.50@1.75; Bellflowers, 1.50@1.75; Winter Bananas, 2.50@2.75; Newtown Pippins, 2.00@2.25; Jonathans, 2.00@2.25.

Avocados, doz., 5.00@5.50; Cal., doz., 75@1.00.

Bananas, 8@8½.

Blackberries: So., 13.00@14.00.

Cantaloupes: Per crate, 1.75@2.00; pony crate, 1.50@1.75; Casabas, doz., 50@75.

Crandberries, 4.50@5.00 per standard box; barrel, 13.50.

Figs, double layers, 1.00@1.50 box.

Grapes: Thompson Seedless, 1.50@2.00 per box; Malaga, 1.25@2.00, Los Angeles lug; Fontainbleus, 75@1.00 per crate, Muscats, 1.25@1.75; Isabella, 1.25@1.50.

Huckleberries, lb., 13@15.

Peaches: Sacramento, 85@1.25 per

Peaches: Sacramento 1.25@1.50 per crate; 75@1.50 per box; Cling, 1.00@1.50 per box.

Pears, box, 1.25@2.00.

Persimmons, box, 1.25@1.50.

Plums: Cherry, 85@1.00, Ciyman, 1.00@1.35; Simoni, 1.00@1.25; Santa Rosa, 1.00@1.25.

Prunes: Fancy American blues, 2.50@3.00; choice, 1.00@1.80; according to size and weight.

Pineappies, doz., 4.00@5.00.

Pomegranates, 1.50@2.00 box.

Quinces, box, 1.00@1.50.

Raspberries, ch., 13.00@15.00.

Strawberies, ch., 18.00@20.00.

Watermelons: Watsons, lb., 1.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 7.00@7.50; choice, 6.00@6.50; standards, 4.00@4.50; lemonettes, 4.00@4.50; grapefruit, fancy, 5.50@6.50; choice, 4.00@5.00; oranges, fancy, 5.25@5.75; choice, 4.25@4.75.

ALMONDS

California Almond Growers Exchange opening prices:

Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HONEY

Jobbing prices: Extracted, Water White, 20@22 per lb.; Light Amber, 15@17; Amber, 13@14.

BEANS, PEAS

Wholesale selling prices:

Beans: Per cental: Small White, 7.25@7.50; Large White, 6.50@6.75; Lima, 14.50; Baby Lima, 13.00; Pink, 6.75@7.00; Cranberry, 7.25@7.50; Blackeye, 6.00@6.50; California Bayos, 6.75@7.00; Mexican Red, 6.00@6.50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 5.75, in bond.

Dried Peas: Old crop, green, lb., 7½@7¾.

HOPS

1919 contracts per lb. around 60@70.

RICE

Prices per 100 lb. bag:

California: Fy., 10.50; ch., 10.25; flour, 5.25.

GRAIN AND FEEDS

Wholesale selling prices:

Oats: Red feed, 2.85@2.95; black, 3.00@3.10 per cental.

Corn: California yellow, 3.50@3.60 cwt,; Egyptian. 3.15@3.25; Milo Maize, 3.07½@3.15.

Rye, 3.25@3.35.

Barley, feed, 2.95@3.00; brewing, 3.15@3.20.

Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles Terminals:

	Per Bushel	Per Cental
Hard Wheat—		
No. 1	2.20	3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 1-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.09	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Mill Feed (per ton): Bran, 43.00@44.00; mill run, 42.00@43.00; Rolled Barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of October 25, Scott-Magner & Miller says:

Receipts past week 1338 tons. The fields are practically cleared and all hay from now on will probably come out of the warehouses with the exception of small lots here and there, with the later cuttings of alfalfa from the fields. Fancy wheat or red oat hay is in demand. Trade throughout this city is light, most big feeders having laid in their winter supplies. Export trade is practically nominal, owing to the waterfront troubles and stevedores' strike it being most difficult to make deliveries to any of the docks. The alfalfa market remains about the same with light inquiry. Straw is in large supply and light demand.

We quote today wholesale prices in carload lots as appear from dealers transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat hay (light 5-wire bales)	20.00@22.00
No. 1 Wheat or Wheat and Oat hay	17.00@21.00
No. 2 Wheat or Wheat and Oat hay	16.00@18.00
Choice Tame Oat hay	19.00@22.00
Other Tame Oat hay	16.00@19.00
Wild Oat hay	15.00@18.00
Barley hay	15.00@19.00
Alfalfa hay	17.00@22.00
Stock hay	12.00@15.00
No. 1 Barley straw, bale	50@80

Citrus Markets

Los Angeles, Oct., 29, 1919.

Car shortage is holding back shipments of Valencias, though the number of cars stored or on Eastern sidings is rather greater than normal. November, the last month of the citrus year, will not see all Valencias forwarded. Porto Rico and Florida new crop is now supplying some of Atlantic coast markets. Porto Ricos are selling from $1.25 to $3.90. Floridas are selling around $4.00 to $4.25 f. o. b. shipping point.

Foreign lemons are more of a feature in the Eastern market and are depressing prices slightly. Californias are selling in Middle West around $5.50 and $6.50.

Shipments

Shipments of oranges from Southern California to date since November 1, 1918: 35,024 cars, lemons 9,655, total 44,679. To same date last season: oranges 14,325, lemons 6,088, total 20,413. Central California this season: Oranges 4,427, lemons 354, total 4,781. To same date last season: Oranges, 2,539, lemons 115, total 2,654. Northern California: Oranges 244, lemons 2, total 246. Last year same date: Oranges 203.

WEATHER REPORT

San Francisco, California, Oct. 25, 1919.

Stations.	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	1.69	3.41	64	40
Red Bluff	.12	.98	2.09	82	42
Sacramento	.00	.53	1.23	84	44
San Francisco	.10	.66	1.30	78	49
San Jose	.26	.52	1.09	80	36
Fresno	.28	.57	.86	82	46
San Luis Obispo	.10	.52	1.53	88	40
Los Angeles	.55	1.84	1.67	76	50
San Diego	1.02	1.31	.45	70	54
Winnemucca	.12	.82	1.08	78	22
Reno	.00	.62	.99	70	28
Tonopah	.32	1.06	1.78	66	22

The New 16 Valve

TWIN CITY

12-20 Kerosene Tractor with 16-valve engine

Pays Big Dividends

For the first time in the history of the tractor industry, the 4 cylinder, 16 valve engine (valve in head type) is now applied to a tractor. The TWIN CITY 12-20 with its 16 valve motor actually develops 25 per cent more than its rated horsepower.

This new 12-20 is a light weight tractor that will out-pull, out-last and out-dividend other tractors of equal rating.

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The highest grade tractor will unfailingly prove the least expensive and pay the biggest dividends.

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Castleview Berkshires

WON

Grand Champion Sow

Junior champion sow
Reserve senior champion sow
Reserve junior champion sow
1st prize aged sow
1st prize senior sow pig
1st prize junior sow pig
1st prize young herd.

At the Los Angeles Livestock Show and we also won

2nd prize senior boar pig
3rd prize junior boar pig
3rd prize senior sow pig
3rd prize junior sow pig
3rd prize herd bred by exhibitor
3rd prize produce of dam
2nd fat barrow
15 ribbons won on 10 animals exhibited.

Castleview Ranch
Santa Rosa California

Herefords Are in the Front Rank

by reason of their peculiar fitness to return profits under all conditions.

Veramont Herefords

are best because climate, altitude and careful selection have developed vigor and stamina. See our show herd at California International Livestock Show. Six tops are in the sale to be held November 7.

Veramont Stock Farm

(H. M. Barngrover)

San Jose, Cal. and Taylorsville, Cal.

Closing Out Sale of Percherons

The Sam Wade & Son Stud

La Grande, Oregon, November 25

47 Stallions and Mares

Owing to advanced age of the senior member of the firm of Sam Wade & Son, Lostine, Oregon, it becomes necessary to close out their entire stud of registered Percherons.

The offering consists of 47 head, including 8 stallions ranging in age from yearlings to five year olds, four weanling stud colts and 35 mares, and fillies. Among the cataloged lots are a number of sons and daughters of the great Calypso.

This stud has been the largest winner at the leading Northwest shows for many years. The stallions are the ton kind, and the mature mares will weigh from 1800 to 2000 pounds. Wade Percherons have a reputation for size, bone, quality and soundness. For catalog address

Sam Wade, Enterprise, Oregon

Col. H. C. Crancke, Nez Perce, Idaho, Auctioneer

Sam Wade & Son Enterprise, Ore.

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Semi-solid buttermilk is pure creamery buttermilk, with nothing added—only the water is taken away. It is not modified by the addition of sulphuric acid or any other preservative. Its own **NATURAL LACTIC ACID** keeps it fresh.

We Guarantee Every Barrel of Semi-Solid Buttermilk.

We guarantee that semi-solid buttermilk is pure and unadulterated, sterilized and pasteurized. It is a SAFE feed, and you will be satisfied with the results from feeding it.

Saves Grain, Saves Time, Saves Money

Saves GRAIN, because it balances the grain ration. Saves TIME because hogs and poultry fatten quicker when fed semi-solid. Saves MONEY because you don't pay freight on the water content of the buttermilk, and you don't have to feed so much high-priced corn.

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Order from your dealer. If he can not supply you, send your order to Dill-Crosett, Inc., 235 Pine St., San Francisco, and we will supply you direct from our factory at Benicia, California. You pay on receipt of the goods.

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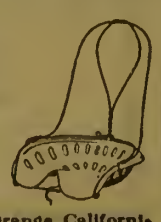

CARL G. JORN
Jorn Bldg., 57 Plaza Square, Orange, California

Poultry at the Livestock Show

By Jean A. Koethen

POULTRY shows are interesting, first because they indicate who's who in the poultry world, that is, what breeders have worth while stock to offer, and second because they indicate what's what, that is, what breeds are "holding their own," as the doctors say, and which are lagging. I doubt if it is altogether a matter of fashion that some breeds come to the front and others drop back. These years of war feeding have tried poultry breeds, as they have the rest of us,

Who's a Slacker?
"Ammidon," First Cornish Cock, owned by Mrs. Hanson Puthoff, Eagle Rock.

with fire, and those that are preeminent now are so because they have proved their worth.

Visitors to the show found "Red" alley the longest. There were fine birds, too, not a few. Most of the birds were single comb, but the few rose comb birds were favorites, both with the visitors and with the judges. The best bird in the show, if I am not mistaken, was a rose comb Red pullet, a bird of wonderful color.

Wyandottes to the Front

But Reds will have to hurry some to keep ahead of White Wyandottes, another splendid dual purpose breed. They have long been very popular in the East, but it is only in the last two years that they have begun to take a large place in Southern California show rooms. Ninety-eight Wyandottes, nearly all of them white, as against 129 Rhode Island Reds was certainly a fine showing and a great jump in advance of previous years. They were splendid birds, too, wonderful, fluffy creatures. One has only to see them to love them, and it is no wonder every show adds to their popularity. First cockerel was a magnificent bird and first hen a beauty.

Andalusians Coming Strong

It was something of a surprise to find Andalusians third in number, with 80 birds in "Blue" alley. First hen and first pullet were very daintily marked. Andalusians have a reputation for being hard to breed true to color, but they are also building up a reputation as consistent layers.

Fine White Leghorns

White Leghorns were an unusually strong class, 74 birds being shown. The coop of the first cock was lined with ribbons, and no wonder. His delicately yellowed earlobes, brilliant shanks and royally curved tail marked him a bird such as can be produced by only the most careful breeding. First hen was also a beautiful bird.

So many commercial poultrymen never show their birds that the number of White Leghorns in a show is little indication of the estimation in which this breed is held. In some shows they have been a very small class, but their popularity as egg producers has never wavered. The little White Leghorn hen always delivers the goods.

Anconas and Rocks came next with about 50 birds in each class, and Dark Cornish and Buff Orpington followed with 38 birds each. Special mention should be made of first Barred Rock cock and first Dark Cornish cock, which were both birds of re-

Winner of the Blue
First Barred Rock Cockerel, owned by Gill & Warrick, Glendale.

NOVEMBER, SELECTING THE BREEDERS

The hens selected as mothers for next season's chicks should have been consistent layers for at least a year, not phenomenal layers, for they are often poor breeders, but steady layers of large, well-shaped eggs. They should be vigorous and of good shape and color. Select for vigor first, for production second, for color and shape third.

Do not make the mistake of selecting too many hens. Only the very best should be used.

The male is more than half the pen. Both external appearance and fecundity are to a large extent transmitted through him. Let him be the best that can be obtained, large, vigorous, as near standard as possible in color and shape, and from a high producing strain. He should be rather blocky in build, with short neck, legs set wide apart, long back.

Mate cockerels to old hens and cocks to pullets, but avoid the use of pullets if possible. Two year old hens are the best.

markable color and shape. Anconas are always a good class and they were never better than last week.

There were 25 Light Brahmas and the usual number of scattering exhibits. Black Minorcas were formerly a large class, but there were only 13 in this show. Brown Leghorns have never been popular here, though reputed excellent layers, but there are always a few in every show. There were four Golden Gates, a new breed that several breeders have taken up, three Java Jungle Fowl, remarkable only as curiosities, a sprinkling of Sussex, Silver Spangled Hamburgs, Black Langshan, Black Cochin and Rhode Island Whites, and a coop containing five Cornish Red Hereford capons.

The $20 cash prize for best display in the show was won by J. R. Huddleston with his Andalusians. Second was won by the Hocking Poultry Farm with Anconas, and third by E. E. Emerson with his Single Comb White Leghorns.

Many Bantams

Bantam row was unusually long and attracted a great deal of atention. There were B. B. Red Games, R. C. Black Games, Golden Seabright, Silver Seabright, Buff Cochin, Black Cochin, White Cochin, Black Minorca and Partridge Rock. The two last named show what can be done in breeding bantams from modern fowl and were very lively pretty little birds.

Turkeys and geese held the place of honor in the center of the big tent and were both large classes. There were 25 bronze turkeys, some of them birds of extraordinary size and color, and seven White Holland, while the 19 immense Toulouse geese made an astonishing array. Four varieties of ducks were represented, White and colored Muscovy, White Pekin and Penciled Indian Runner.

Much praise of the show was heard from all visitors, both of the unusual variety of exhibits and of their excellent quality.

POULTRY QUERIES

Indian Runners

I would like to know how old "Indian Runner" ducks ought to be before they start to lay; also what is the best feed to make them lay?—Subscriber, Alpaugh.

Runner ducks begin laying at about the same age as Leghorn pullets, sometimes a little earlier. I have heard of their beginning at four months, but they do not always mature so early. Something depends on feeding and breeding, as with pullets.

Day Old Chicks

At this place we have it quite cold in the last of December and January but have good weather with cold nights for the next four months. We want to get some day old White Leghorn chicks as soon as possible and wonder if you would advise us to get them now or in February. In the spring we have a great deal of wind so that they may have that to bother them. Are the chicks raised now as vigorous as they will be later, and are they as vigorous from the south as from Petaluma or some other place north?—Subscriber, Runnington.

Vigor is not a question of climate, nor to any extent of time of hatching. There is a prevalent impression, I believe, that chicks hatched in January and February are a little more vigorous than chicks hatched at other times, but there are other reasons for this. Certainly chicks hatched in cool weather make better growth than summer chicks. The main reason for hatching in January or February is that pullets mature in just the right time for fall laying. Fall pullets usually mature in March or April, lay through the summer and are ready to molt in the fall. Winter pullets, to be sure, may molt the following fall, but this can be prevented by holding them back from too early laying. If I were you I would order them for the last week in January or the first week in February. You can protect them from the wind. I do not see why southern chicks should not be as vigorous as northern. Vigor depends on the breeder, not on the climate.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal. Unsigned communications receive no attention.

Skin Disease

I have two mares that have small round lumps beneath the skin on the neck, mostly where the collar is worn, although a few lumps have appeared on other parts of the body. They do not seem to bother them very much but some grow quite large and cause soreness. They have been affected since I bought them last June. The lumps are hard and about the size of a marble. Please advise me what to do for them.—Subscriber, Oregon.

Such pimples usually accompany a slow or sluggish condition of the whole system with constipation, dry skin, dandruff and rough dry hair. The circulation is poor and the glands, especially those of the skin, are not active. There is no use treating the pimples except where the harness irritates them and those should be bathed in cold water when removing the harness. Get ground flaxseed that has the oil left in, not the oil cake meal, and give a handful in the feed once a day. If you feed rolled barley it would make it easier digested and more laxative if you would pour boiling water on it half an hour before feeding. Also give bran mashes once or twice a week. Bran mash you know must be made with boiling water. Put the bran in a clean bucket, pour on plenty of boiling water, stir it until all is wet and cover it up until cold, then salt it and add a handful of the ground flaxseed. The following is a good remedy to help clean up the skin. Get your druggist to prepare it. Take one and one-half drams of arsenic powder, three ounces of powdered nux vomica and six ounces of ground gentian. Mix and divide into 32 powders. Give each horse one powder once a day in the feed.

Sow With Rheumatism

I have a favorite sow with her third litter of pigs, which shows some lameness. She was a little lame with her first litter but we changed the pen and saw no more of it until now. She has good healthful quarters and runs on alfalfa pasture. Sometimes the lameness is in a front leg and again in a hind one. Is it rheumatism and what should we do for it?—Subscriber, Chula Vista.

It may be rheumatism. Give her a very dry place to sleep and plenty of straw to keep warm in. Mix four ounces of bicarbonate of soda and one ounce of salicylate of soda and give her a teaspoon of the mixture in the feed once a day.

GOING TOO FAR

An American visiting London and goaded to desperation by the incessant necessity for tips, finally entered the lavatory of his hotel, only to be faced with a large notice which read: "Please tip the basin after using."

"No!" said the Yankee, turing on his heel, "I go dirty first!"

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Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — November 8, 1919 — No. 19

Grain Elevator at Murrietta, Riverside County

Several grain elevators have been erected in Northern portions of the state, but the one shown above is the first large one to be erected in the South. It is near the southern boundary of Riverside County and in a great grain growing section. Its capacity is 33,000 bushels and has proven far more economical than the sack method of handling grain.

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California Cultivator

Vol. LIII, No. 19 | Los Angeles, November 8, 1919 | One Dollar Yearly

Three Great Conventions at Chico

THE 52nd State Fruit Growers and Farmers Convention, together with the conventions of the California nurserymen and horticultural commissioners, will occupy the entire week at Chico beginning next Monday.

On Monday morning the county horticultural commissioners will be called to order by President Fred Seuiberger of Alameda County. Fred C. Brosius of Sacramento County is secretary of the association. This association has no formal program as yet arranged but will discuss matters of interest to fruit growers, with particular reference to the police control side.

The horticultural commissioners have been given far greater power since the standardization law went into effect and these problems will have principal place in the discussion which will follow on Monday and Tuesday. On Tuesday afternoon the commissioners will make an auto trip to the United States plant introduction gardens four miles southeast of Chico. These gardens have been important factors in distributing new introductions to this country from other parts of the world. The gardens are in charge of Superintendent R. L. Beagles.

State Fruit Growers and Farmers

On Wednesday morning at 9:30 Director Hecke will call the larger state convention to order in the state normal school. There will be music, and welcome to the city by Mayor Reynolds and response by Director Hecke. Following this, addresses and discusslons will fill the week.

The Program

California Agriculture, James Mills; Accomplishments and Possibilities of Cooperation—California Almond Growers Exchange, George W. Pierce, president; California Peach Growers, Inc., F. H. Wilson, president.

Wednesday, 1:30 p. m.—Cooperation—California Associated Raisin Company, Wylie M. Giffen, president; California Pear Growers Association, Frank T. Swett, president; California Fruit Growers Exchange, G. Harold Powell, manager; discussion led by George C. Roeding, Fresno; Standard Pack and Packages, Charles E. Virden; Fruit Packing Demonstration, Dr. W. L. Howard and Prof. W. P. Tufts.

Wednesday, 7:30 p. m.—Status of the Rice Growers' Association, J. H. Stephens, president; Function of the Junior College in Its Relation to Agriculture, Dr. E. B. Copeland, Will C. Wood, Mrs. Elizabeth Hughes.

Thursday, 9:30 a. m. — Auto trip through Oroville orange and olive district, inspection of canneries and olive packing plants; luncheon in Exposition building. A reasonable charge per plate to cover expense of serving. A live program will be "served" with the luncheon.

Thursday, 1:30 p. m., in Exposition Auditorium — Packing Oranges and Maturity Standards, F. J. Mason; Packing Ripe Olives, E. W. Ehmann; Olive Culture with Special Reference to Pruning, Prof. F. T. Bioletti.

Friday, 9:30 a. m.—Irrigation, Pruning and Spraying as Factors in Frost Control, Dr. J. C. Whitten; Irrigation, Prof. F. J. Viehmeyer; Red Spider, E. R. de Ong; Evaporators for Fruit Drying, E. M. Sheehan, Prof. W. V. Cruess.

Friday, 1:30 p. m.—Standardization and the Consumer, A. S. Hoyt; Community Canneries, Ralph W. Crary.

Friday, 6:30 p. m.—Banquet.

Saturday, 9:00 a. m.—Auto trip to Durham; Live Problems in American Agricultural Development, Dr. Elwood Mead, Prof. H. E. Van Norman, Al Lindiey, Col. John P. Irish.

CALIFORNIA NURSERYMEN'S CONVENTION

The California Association of Nurserymen will hold one of its most important meetings in Chico November 13-15. The sessions begin next Thursday morning in Elks Hall on Second street.

The first session will be given to welcome to Chico by Dr. E. B. Copeland, president of the Chico chamber of commerce. George F. Otto, chairman of the executive committee, will respond for the association. The first in order of business will be reports of special and standing committees. The committee reports will be given by: Membership, R. M. Teague, San Dimas; Finance, John S. Armstrong, Ontario; Vacuum Fumigation, David B. Mackie, Los Angeles; Experiment Station Cooperation, Leonard Coates, Morganhill; Standard Fruit Tree Caliper, George C. Roeding, Fresno; Standardizing Fruit Varieties, J. E. Bergtholdt, Newcastle; Best Types of French Prunes, Leonard Coates, Morganhili; Legislation, George C. Roeding, Fresno; Insects and Disease, George H. Hecke, Sacramento; Transportation, J. D. Meriwether, Ontario; Deciduous Fruits, Max J. Crow, Gilroy; Citrus and Tropical Fruits, D. W. Coolidge, Pasadena; Viticuiture, Frank T. Swett, Martinez; Gardens, Fred H. Howard, Los Angeles; Plants and Flowers, E. James, Oakland; Native Vegetation, Theodore Payne, Los Angeles; Arboriculture, John J. Reeves, Beverly Hills; Nomenclature, Leonard Coates, Morganhili; Exhibitions, Adolph Ekstein, Modesto; Program, C. W. Gandy, Modesto.

Features on the program are:

Deciduous Fruit Bud Selection, Geo P. Weldon.

Our Greatest Nursery Problem, J. E Bergtholdt.

Costs, Prices, Salesmanship, Credit. W. R. Wood.

California Nurserymen of the Fifth Decade, Prof. E. J. Wickson.

The Kadota or White Endich Fig. W. Samuel Clark.

Some Plant Introductions, E. O Orpet, bureau of plant industry.

Ferns for Outdoor Fernerles, H Plath.

Future of Small Fruits in California. H. H. Hyde.

Others assigned place on program have not yet accepted.

Ladies' Auxiliary

This will also be the third annual gathering of the Ladies' Auxiliary, of which Mrs. John Vallance of Oakland has been president since its inception The other officers are: Mrs. Max J Crow, Gilroy, secretary, and Mrs Chas. E. Jackson of Cupertino, treasurer. On the evening of November 14 the club women of Chico will give the members a reception and dinner at the Presbyterian church, during the time when the men will be enjoying their annual banquet at the Hotel Oaks.

Why Own an Automobile?

By James De Camp

OUR prehistoric ancestors traveled on the hurricane deck of the mastodon, hammering the flank of the huge lumbering creature with a tusk appropriated from some hapless saber tooth tiger. Today we slip into the comfortably upholstered seat of a motor car, press the starting button, grasp the steering wheel and hit it up for the horizon.

The printing press, the steamboat, the locomotive and electricity were revoiutionary in their time, but nothing has so thoroughly interwoven itself with the threads of city and country life as the automobile. Although motoring was orlginally most popuiar on city boulevards, highway extension and development of better road conditions throughout the United States have gained momentum so rapidly that at the present time the farming class outdistances all others in the purchase of machines.

For the farmer or rancher there is no investment more fraught with satisfaction and results than the purchase of a dependabie automobile. When reduced to dollars and cents the interest on the outlay is exorbitant, the income being compounded daily from time saved, convenience, increased marketing and buying radius, reduced pasturage, benefit to health and elimination of costly horse feed.

That California offers the most ideal motoring conditions to be found on the face of the globe is an established fact. The wide reaches of the Golden State are crossed and recrossed by a network of surfaced highways linking city with city and putting farm and ranch in close touch with markets and distributing centers. Hundreds of construction gangs are ever at work under skilled engineers forging new links into the good roads system, while each district employs a small army of laborers for maintenance and repairs.

Public spirited automobiie clubs have signposted every artery of travei so thoroughly that it is impossible to go astray, while gasoiine and oil stations, furnishing free air and water. fairiy tread on each other's toes at junction and viliage. Best of all, there is no snowbound, blizzardy winter to send your car scooting into the garage for an enforced hibernation of three or four months. One can drive to market every day from New Year's to the thirty-first of December without fear of freezing the radiator, roosting in a snowdrift or becoming mired in the moist depths of a chuckhole.

There are in California more than 376,000 automobiles which, placed in procession, would stretch from the northern boundary of the state to the Mexican line. This caravan, traveling at parade speed, would consume several weeks in passing a given point. These motorists burn millions of gallons of gas each month, yet the price of the fuel is lower here than in almost any other region since nature has stored up untold quantities of crude oil and refining is a major industry.

Considering conditions in the aggregate it is little wonder that California is coming to be known as the land of "motorized agriculture." Growers of produce can be seen from dawn till dark hastening marketward or delivering to the customer direct a tonneau or trailer load of eatables fresh from the soil. This process is much cheaper and less risky than shipping by steam or electric freight.

Ownership of an automobile has developed a neat little business in perishables for many enterprising growers. Where, before, the land had to be devoted to staples because of remoteness from the railway or lack of rapid transit, many acres have now been opened to profitable truck farming. Others in more distant districts have arranged for the sale of such articles as eggs, butter and cheese through the parcel post system, the automobiie carrying their goods to the nearest postoffice in one-fifth of the time required by a horse and buggy.

In utilizing the passenger automobiie for delivery purposes three methods are used. The goods may be packed into the tonneau, placed on a trailer, or the tonneau be removed, affording a small platform to accommodate the load. The trailer is more convenient and has a great capacity

Continued on Page 618

Agricultural News Notes of the Pacific Coast

Northern California

Lake County has five pear evaporators.

The Sacramento Valley now has eight large rice mills.

Yolo County's sugar beet crop this year is worth $360,000.

An orange tree in Chico, planted in 1852, is still bearing fruit.

Paradise in Butte County has shipped 30 cars of apples.

Marin County live oaks are being defoliated by the oak moth.

Chico voted seven to one for bonds for building a new high school.

Butte County olive growers are contracting their crop at $200 a ton.

Colusa rice men are worried over storage capacity; every warehouse is filled.

A rice farm two miles east of Williams, Colusa County, returned $380 an an acre.

Orland in Glenn County will ship 15 cars of oranges the first week in November.

Fruit shipments from the Vaca Valley, Solano County, totaled 1,045 carloads this year.

The airplane method of getting rid of the ducks in the rice fields has proven a success.

Martin Kuster of Wheatland, Yuba County, has 3,200 tons of rice which will sell for $700,000.

Rice will next year be grown as far south in the Sacramento Valley as the Mokelumne River.

Wyandotte, Butte County, last week received a large shipment of silkworm eggs from Italy.

At Vina, Tehama County, 65,000 pounds of dried peaches were shipped that brought 18 cents a pound.

A live dog was sent by parcel post from Winters, Yolo County, to Hayfork, Trinity County, at a cost of 35 cents.

The Mills Orchard Company in Glenn County extracted 9,000 pounds of honey from 120 hives, valued at $1,800.

Large numbers of ducks are dying in northern counties through drinking and swimming in the alkali water from the rice fields.

After spending $200,000 in grading and planting rice lands near Dixon, a party of Hindus abandoned it when the crop proved a failure.

Turkey raisers of Yuba County are fastening bells to the birds to scare away coyotes and to more easily locate their flocks in the heavy underbrush.

The Western Canning Company, a Chinese corporation, has purchased 406 acres of pear and asparagus land near Isleton, Sacramento County, from Hart F. Smith. The purchase price was $223,300.

Predictions of a $1 per pound price for Sacramento Valley hops before the close of the year will probably be fulfilled. The price is now 77½ cents, having increased from 60 cents within the past few weeks.

California ladybirds are doing very effective work against the citrus white fly pest in Florida orange groves, the Florida experiment station has advised the state secretary in Sacramento, whence the ladybirds were sent.

Central California

Madera has a bulb farm of 50 acres.

Lindsay will have a chrysanthemum show November 11-12.

The f. o. b. price for Tokays in Central California is $1.65.

Porterville is to have a peach tree nursery of a million trees.

Tulare turkey raisers are getting 35 cents a pound, live weight.

The big Ewell apple evaporator at Watsonville burned October 25.

The total apple crop of this season about Dunlap brought $80 a ton.

W. E. Vinson of Porterville realized $1,100 from one acre of pomegranates.

The first lemons from Porterville, two carloads, were shipped October 18.

The machinery for a new citrus packing house at Terra Bella has arrived.

Thompson Seedless rooted vines are selling for $45 a thousand and are scarce.

The Fresno farm bureau will hold hog auctions at Fresno November 7 and 21.

Fresno Poland China breeders will hold a sale at Fresno fair grounds November 19.

Sanger has such a large raisin crop that not enough receptacles can be found to hold it.

The Lodi women grape pickers have had their pay raised from 35 cents to 40 cents an hour.

Livingston, Merced County, is to have a public park and camping ground of 55 acres.

The Lodi dehydrator is a success. Raisins were thoroughly cured from fresh grapes in 17 hours.

Lodi received 199 empty cars in three days last week and the grape growers gloom is lifting.

C. B. Hunt of Porterville has shipped several thousand fruits from his Northrup avocado orchard.

Up to October 15 Watsonville had shipped 1,228 cars of apples, 500 more than to same date last year.

The California Peach Growers will issue a monthly publication modeled after the "Sun Maid Herald."

Crows Landing, Stanislaus County, has the largest almond tree, over 11 feet in circumference of trunk.

Twenty-five cars of Tokay grapes from Lodi brought $59,606 in eastern markets, and 34 cars brought $81,318.

Several small orchards of White Adriatic figs are being set out in the Terra Bella region of Tulare County.

Nine tons of poisoned grain for ground squirrels was distributed in the fields of Alameda County last month.

The California Prune and Apricot Growers Association is still short of cars and 10,000 tons of prunes are waiting.

Carl Nielsen of Sebastopol harvested 32 potatoes of uniform size from one hill, weighing 14½ pounds, a Coast record.

The Kerfoot Jones ranch of 108 acres at Bakersfield has been sold to the D. E. Georgia Farm Lands Company for $100,000.

Short feed in Nevada is causing stockmen to ship cattle to Central California to graze. Oakdale received two trainloads last week.

Southern California

Redlands will hold a flower show November 14-15.

Sixty cars of Valencias were shipped from Redlands last week.

The San Bernardino orange show has been set for February 13-23.

Cattle at Talbert, Orange County, are having an attack of blackleg.

The first snow in Southern California fell in Bear Valley October 25.

Highland reports three inches of rain to date; Chino and Claremont, 3.30.

Santa Ana's cannery is in need of 150 women to work on pimento peppers.

An enormous deposit of valuable black granite has been discovered near Perris.

Cotton sold in Blythe last week for $41.50 a hundred and cotton seed for $50 a ton.

The Blythe Producers Warehouse is the name of a late corporation of cotton growers.

Over 100 acres of lettuce will be planted in the Seeley district of Imperial County.

W. Hindman of El Cajon Valley sold his crop of wax beans for 10 to 12½ cents a pound.

Imperial Valley will have 8000 acres of lettuce and 2,000 acres of spinach the coming spring.

An Oxnard rancher received a shipment of three blue pigs from Massachusetts last week.

Brawley's 1919 cotton crop will bring $1,250,000, a million for cotton and a quarter million for the seed.

A price cutting war in the Imperial has brought the price of ginning cotton from 35 cents to 20 cents.

A Japanese at El Centro was fined $50 on October 24 for allowing Johnson grass to grow on his land.

The acreage rent paid by Japanese in the San Juan district of Orange County ranges from $30 to $75.

Members of the Hemet Walnut Growers Association have harvested 175 tons of walnuts this year.

The highest price ever paid for land in Stanislaus County was $1,000 an acre for a fig orchard at Ceres.

Cauliflower in carload lots is now moving in the Los Angeles section, two weeks earlier than last year.

The law against hunting on the state highways has been declared invalid by Judge Williams of Orange County.

C. R. Keller, an Oxnard rancher, has invented a machine for picking up beans and piling them in windrows.

Lima bean growers are rejoicing in the possession of the first payment of five cents a pound on the 1919 crop.

A prize cotton picking contest for the best eight hours work in the Palo Verde Valley will be decided December 24.

Ventura apiarists state they will have to feed their bees heavily on account of a short flower supply last season.

One Moorpark, Ventura County, grower has sold 2,500 sacks of Lima beans at $13.80 per hundred. This is the association price of $14.50 less brokerage.

The Coast and General

Hood River's 2,000,000 box apple crop is practically harvested.

There are 3,000 acres of walnuts in the Yamhill section of Oregon.

In Washington as high as $20 a ton was paid by cider mills for cull apples.

Filberts are being extensively planted in several districts in Washington.

The alfalfa weevil is destroying much alfalfa in northern Utah and southern Idaho.

The Mosier, Oregon, district raised 100,000 boxes of apples, double the output of last year.

Cattle, sheep and horses are being shipped to hay producing sections in Washington from Idaho.

The state crop agent of Idaho estimates the potato crop of that state as 72 per cent of normal.

Apples are going out of Wenatchee, Washington, at the rate of 150 cars a day, and 1,600 cars to date.

In Washington the shortage of teachers has closed 261 schools. Douglas County needs 50 teachers.

Honolulu is facing a milk famine Destruction of tuberculous cows is said to be one of the chief causes.

Otto Myland, in the Yakima Valley, Washington, sold his crop of 10,000 boxes of Delicious apples at $4 a box.

A shipment of high grade Holstein cows has been made from the Salt River Valley of Arizona to Havana, Cuba.

Early Ohio, Red River Ohio, Bliss Triumph and Burbank are the potatoes most grown in the North Pacific states.

Colonization of 100,000 acres of virgin lands in British Columbia by English settlers has been decided on by the government.

The 1919 citrus crop in Texas is a failure in nearly every district. Some grapefruit is grown but not enough for home consumption.

Hood River Valley apple growers large crop has caused a shortage in supplies; picking bags, nailing hatchets and nail strippers are needed.

Twelve live blue foxes, valued at $500 each, arrived in Seattle from Alaska. They are for the United States government animal breeding farm.

The varieties of walnuts recommended for the colder parts of the Pacific Coast are: Franquette, Mayette, Chaberte, Parisienne and Columbia.

Orchards of hardy Persian walnuts of the French types are now fruiting in Northern California, Oregon, Washington, British Columbia, Montana, Wyoming, Idaho and Utah.

The Chicago board of trade has offered $10,000 in prizes for the best corn and grains shown at the International Grain and Hay Show to be held in Chicago November 29 to December 6.

A striking feature of the Cotton Carnival held in Mesa, Arizona, October 23-25, was a pile of cotton at the intersection of the two principal streets of the city, valued at more than $10,000 This monument of cotton bore the legend: "This Is What Made Us." A cotton gin in operation was also shown on the street.

Is There an Anti-American Campaign?

INTEREST in the discussion prevailing on the Pacific Coast, and, we may add, to a very limited extent in all sections of the United States, as to whether America is following a wise course in admitting the Japanese has been increased by expressions of Japanese newspapers and Japanese in this country. Often these expressions are couched in most diplomatic language and deprecate anything which might lead to unfriendly feeling between the two great nations. Again, as in the case of a paper printed in the Japanese language in San Francisco, a boastful and even half-threatening attitude is taken. The paper referred to is The New World, which published the following article, translation of which appeared in the Sacramento Bee and other papers:

"We who are here in America, where so many anti-Japanese parties exist, must have this sort of determination. What can Phelan do? What can Inman do? Both are but ordinary men. Their ability is nothing unusual. Their influence is only that of a crowd.

"When we of the Yamoto race rise with a mighty resolve, their opposition will be as futile as an attempt to sweep the sea with a broom.

"It is only because there is so much fear and anxiety on the part of us Japanese that they think they can undertake such big things.

"Even if photograph marriages should be prohibited, we cannot be stopped from leaving our descendants on this American continent. Even if not a single Japanese woman comes, it is not possible to prevent the seed of our great Yamoto race from being sown on the American continent by marriages with Americans, with French, with Indians and with negroes, especially since there are already 100,000 Japanese here and 5,000 children are born annually.

"Phelan and Inman cannot stop this great force. What stupidity! What ignorance of a mighty force!

"Again let us consider the land law. Supposing that the ideas of Phelan and Inman were carried out, and we Japanese were prohibited from owning or cultivating land. We could find some way to continue farming and make a good living as producers. If we cannot conveniently do so in California we shall go to other states and devise some plan. Even the laws of California are not forever unchangeable.

"The day will come when the real strength of the Japanese will make a clean sweep of all laws.

"Even the Kaiser's empire was destroyed when its time came. What can Phelan and Inman, whose influence is less than a drop in the great ocean of world tendency, do to stop the forward movement of our Yamoto race?

"We will say: 'Let there be a hundred or a thousand anti-Japanese movements; let laws be made; let laws be amended. Foolish agitators will have their day; wise ones will some time raise their voices. All these are temporary, but our great racial activities are eternal. All we have to do is to stand firm on the single point of justice, unite our strength and move forward energetically in various quarters of the business world'."

Another statement of the situation between the two countries is that made by Toyokichi Iyenaga, professorial lecturer in the department of political science, University of Chicago. In an address touching upon the case of Japan and the peace treaty he says:

"Notwithstanding this bond of amity across the Pacific, I cannot shut my eyes to the dangers involved in the present situation. I fear that there might be a temporary lapse of mutual good feeling between America and Japan, with no slight consequence upon the Chinese-Japanese relations, if the present campaign of slander, abuse and misrepresentation of Japan is left unbridled, for it not only poisons the minds of the American people but is bound to react on Japan.

"I have faith in the sound common sense of the Japanese people, which will enable them to remain calm and to rightly understand the origin and worth of the present entirely unexpected anti-Japanese wave. At the same time I beg permission to appeal most earnestly to the statesmen and leaders of public opinion in this country to vivify and strengthen those permanent interests and forces that make for peace and thus paralyze the evil elements that act to bring discord."

But, touching upon the more immediate situation in California and upon the colonization efforts being made by the Japanese, the Japanese-American, published in Los Angeles, says, as quoted by the Los Angeles Herald:

"Let those who live in separate houses immediately live together in one house. Let newly married people at once adopt sons and have them registered. Let married people without children immediately adopt sons and immediately send for them and bring them over. Awake! Even if we cannot expand our country's borders let us expand with all speed the Yamoto race, of which we are justly proud."

In other words, if we understand the matter rightly, the Japanese have secured the entrance of picture brides in order that the Japanese in this country may be increased, now the pretext of adoption is to be used in order to more rapidly secure admission of still more Japanese who can hold title to California lands.

Takahida Okada, visiting California at the request of the Japanese government, to investigate the Japanese situation here, is of the opinion that American prejudice against Japanese immigration is founded on misapprehension of Japanese ideals. The Japanese, according to Mr. Okada, have the same ideals as Americans, and they and their children wish to become Americanized. They will be glad to cooperate in the economic development of the state. Therefore, he concludes, their immigration ought to be permitted.

FROM THE OTHER SIDE

Meantime Californians have reached the resolution stage as is indicated by a few reports picked at random from the state press.

Yuba County Chamber of Commerce

The Yuba County chamber of commerce has resolved and petitioned Governor Stephens "to instruct the state board of control to make an investigation into leases of land in California made to aliens ineligible for citizenship, especially to ascertain the identity of the parties who have granted leases."

We may add that the governor has asked for a thorough investigation, the findings of which will be presented to the next legislature.

Federation of Women's Clubs

The California Federation of Women's clubs in session at Sacramento indorsed a report made by a special committee favoring the exclusion of Japanese from California as embodied in a resolution which was drawn up by Mrs. Bradford Woodbridge of Roseville, a former president of the federation.

California Grocers

"Whereas the Japanese are pouring into California in such numbers and entering into competition with the white man and whereas their standard of living is such that it makes it impossible for the white man to live decently and meet his competition, and whereas the Japanese subjects his women folk to a veritable state of slavery in order that his ends may be accomplished, be it resolved that we, the California Retail Grocers and Merchants Association, do hereby endorse the anti-Japanese movement championed by so many civic organizations, senators and congressmen, as well as most of the daily press.

Resolved, that we use our best efforts to secure suitable legislation with state and national bodies to curb this ever increasing menace, and if results cannot be accomplished through proper laws restricting immigration and land ownership, that the advisability of an alien tax be considered, as a proper solution of this problem."

The Stanislaus County Board of Trade

"We believe that a grave menace faces the state in increasing numbers and activities of its Oriental population; that the gentlemen's agreement between the United States of America and Japan is being systematically violated in letter and spirit by the Japanese; that there is an ever increasing number of picture brides; that one of the gravest conditions is the steady increase in number of Japanese arriving at the age of majority and being entitled to the right to vote because of the fact of being born in this country, although their parents are ineligible to citizenship; and that in view of these menacing conditions, the gates should be closed permanently against Asiatics and they and their children barred from American citizenship."

El Nido Farm Center, Merced County

"Be it resolved, that the El Nido farm center most heartily endorses efforts of our representatives at Sacramento and Washington to regulate the purchase and leasing of farm land in California by the Japanese."

The American Legion of California

"The American Legion of California, meeting in convention in San Francisco adopted resolutions asking that Japanese 'picture brides' arriving here from Japan to become brides of fellow countrymen already in this country be denied entry. There was demanded, also, cancellation of all leases of land to corporations controlled by Japanese or to the American-born children of Japanese."

N. S. G. W.

The Native Sons of the Golden West of Sacramento have passed resolutions and asked all other parlors of the Native Sons and Daughters to urge upon California congressmen to work for laws prohibiting Asiatic immigration.

California Auto Trades Association

The recent convention of the California Auto Trades Association, assembled in San Jose, as reported by the San Jose Mercury, passed a resolution "in which the rigid exclusion of all Japanese was demanded on strictly economic grounds. It was pointed out that the picture bride practice results in great increases of the Japanese population in California, that the exclusion act is thus brought to naught and that the communities in which the Japs settle and thrive suffer great economic losses so far as the white populations are concerned."

The Thermalito Farm Center

"Resolved, that we use any lawful means to prevent further acquiring of land in Thermalito by Japanese and that the chairman be instructed to present the resolution to the directors of the farm bureau for consideration in other centers in this county.

"The feeling is that Thermalito should be made the home of white men and that the coming of the Japanese farmers will mean the gradual going out of the Americans from the district."

Camino, El Dorado County

The farm center at Camino, El Dorado County, has discussed the Japanese problem, especially with reference to ownership of lands by the Japanese and to the fact that packing house labor is now almost entirely Japanese. White women are anxious for work in the packing houses but not under present conditions. It is believed, however, that another year in that community the packing will be largely done by white women.

Fourteen Counties Association

Addressing the immigration commission at Washington, D. C., President Van Bernard writes:

"This association has learned with great interest of the report that your honorable committee expects to visit this coast to secure first hand information on the problem of curbing Asiatic immigration. We urge you to make this trip and we assure you of our utmost cooperation in securing the information you seek and in case you do make this visit we are certain you will return convinced that the future prosperity of this coast and its political and social institutions are doomed unless a solution of this problem is found."

El Dorado County Citizens

"Whereas, the Japanese problem is recognized by all the agricultural population of California as a serious menace to our agriculture and institutions and, whereas, this is becoming acute in El Dorado County at this time therefore; be it

"Resolved, that the fruit companies should exhaust every other resource before advising growers to sell their fruit or rent their orchard to Japanese It is the opinion of the committee that these companies should aid the labor bureau by encouraging fruit growers to list their labor wants early enough in the season, so that an opportunity is afforded to secure help other than Japanese; that they should use every effort to secure white labor and should encourage and conduct packing schools to teach local men, women and children to pack fruit, therefore; be it

"Resolved, that the fruit growers and packers should be severely criticised and condemned for not listing their labor needs during the harvest season early in the year with the county labor bureau, so that white help can be obtained, therefore, be it further

"Resolved, that fruit growers should incur the censure of the entire community for leasing their property or selling their crops to Japanese without first exhausting every other means of harvesting their crops without loss therefore, be it

'Resolved, that the county chamber of commerce should be asked to take action in conjunction with the county farm bureau looking toward a remedy for this evil by crystallizing sentiment in Placerville and elsewhere with regard to the Japanese menace and toward assisting the fruit growers in harvesting their crops."

United States Spanish War Veterans

The United States Spanish War Veterans, in session in San Francisco recently, adopted resolutions urging congress to pass legislation prohibiting immigration of Japanese.

The Evening Pajoronian

"We have no quarrel with Japan as a nation, but that is no reason why we should let her encroach upon us and drive our people from the land. The time to adopt the slogan, 'America for Americans' is here, and we should put up the bars now and keep them up. Safety first should be applied here now. Let us demand that Oriental immigration be stopped now and for all time."

Los Angeles Times

"The Times concedes that the real fault has been with our own government. It has paid scant heed to the protests against Japanese immigra-

Continued from Page 621

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Combined with California Cultivator 1914

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Saturday Nov. 8, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

GOLDEN DAY

One of the first to encourage co-operative marketing of California's products was P. J. Dreher, for many years vice president of the Exchange and for almost its entire existence manager of the San Antonio Fruit Exchange. Some time since he retired from the more active work of the Exchange and the many friends of Mr. and Mrs. Dreher at Pomona recently tendered a great reception in honor of the fiftieth anniversary of their wedding.

HOME WORKERS

The editor recently got in line with a procession of farm bureau conference workers. We believe they call it a conference, bnt in any case it is somewhat of a cross between a picnic and the old time farmers institute. The attendants have to go in gas wagons. They met first on a potato grower's ranch where the successes and failures of that potato grower were explained by experts who had come from various sections of the state. This first session occupied perhaps 30 minutes, then "Follow the leader" was the cry and the machines started for another ranch, one or sometimes a dozen miles away, and the gait which those farm bureau leaders can hit with a little Ford or Chevrolet over a dirt road makes a staid creature who is just learning to drive the gas wagon take on a worried look. But it did show one thing: those farm bureau fellows cover a lot of ground and are talked at by a lot of people.

ARMISTICE DAY

Next Tuesday is the anniversary of the day when all the world went wild because of the final signing of the armistice between belligerent peoples in the greatest of world wars. The year has been occupied in completing the terms of peace. By one great nation, America, these terms have not yet been accepted. Presumably they will be, and before many weeks a league of nations will be formed which will prevent another such great world war. That is the prayer of all peoples.

ENDORSED BY FARM BUREAU

The entire foundation of the farm bureau movement rests upon the rock of cooperation. Cooperation alone is behind every movement the farm bureau makes, whether it be social or for greater efficiency in farm operation or marketing of products. The farm bureaus of the state have noted the attack of large interests on some of the state's cooperative movements. They are naturally impelled to resent this attack.

One farm bureau, that of Napa County, noticing the article "Bunk—An Editorial," took action in a recent meeting of the directorate when 36 directors were present, which action is reported in the following from its president, Henry Wheatley:

"Your article entitled, "Bunk—An Editorial," was called to the attention of the directorate of the Napa County farm bureau, Saturday, October 11, at which time an excellent attendance of directors was present. It was the opinion of those present that the stand taken by the 'California Cultivator' in regard to farmers' cooperative organizations generally should be unanimously endorsed. We believe that the farmers of the county will stand back of your publication.

"There is no question in our minds that the time is coming when the farmers of America will be forced to organize, and in case they fail to do this we may have developed in this country a peasant class of farmers similar to those in parts of Europe.

"The recent investigation as to the high cost of living again proves that the unorganized farmers are the ones who are made to bear the burden. Hogs sold in Napa County prior to the investigation at 20 cents hundred weight live weight; now they are selling at 14 cents. It is not the organized packer that suffers but the unorganized farmers.

"Such articles as yours are doing a great deal toward getting the reading public to see the facts as they are. The article to which I am referring was appreciated in Napa County and it is my opinion that the farmers of the state generally appreciate the stand you have taken in behalf of farmers cooperative organizations."

OLIVE SCARE

Some weeks ago in Canton, Ohio, a dinner was given by a lady who had been in California, and as a special treat she served California ripe olives. Five of the guests died within a few days and the physicians declared the deaths due to ptomaine poison in the olives. Later in Michigan a case of ptomaine poisoning was also charged to bottled olives, and now the board of health of that state has urged the hotels to remove olives from their menus and has asked for legislative action which will prevent the entrance to the state of olives either ripe or green. It is alleged in the news reports that examination has been made of the olives and ptomaine bacteria found in them.

In view of the fact that Californians have for generations lived on olives green and olives ripe, and that the state has never yet learned of a case of poisoning from them, there will be little credence given to the Eastern reports. Notwithstanding that, the California olive will probably be seriously injured by the present campaign. Olive growers should make fullest investigation and be prepared to tell the truth regarding this most healthful and luscious of foods.

MARKET BASKET WEEK

Automobile people have suggested and are planning to make November 15-22 a motor-to-the-country-and-fill-your-market-basket week. Automobile clubs all over the country are working to the end that this shall be one great week and will be used to show to city people the advantage of a trip to the producing districts for the purchase of supplies for the home, especially for purchasing supplies for the Thanksgiving dinner. One other slogan is "From the farm to the table," and while this movement may be suggested in the interest of city people purchasing for lower prices, the price will be up to the farmer.

As the Cultivator suggests on page 620 this week, there is an advantage in advertising on bulletin board at the entrance of the place. Along the roadside leading from the cities are many fruit and produce stands. At first these stands were kept by farmers offering their own products. More recently professional hucksters have taken up the plan, which has proven somewhat embarrassing to the producers. However, there are suggestions for the farmer whose family can supply an attendant at roadside stand, and especially will it be wise to consider such plan during "Farm to table week."

BETTER POTATOES

A step which will mean an increase in the potato production in California was taken at the time of the Los Angeles County farm bureau meeting at Burbank last Monday. The occasion was a potato conference, an informal affair staged by the Los Angeles County farm bureau, but it had attracted to the conference potato growers from Orange, Kern, Santa Cruz and other counties. A Santa Cruz visitor suggested that while he had grown potatoes almost since babyhood in the extreme northeastern county of the United States, and later in California, he still had to confess that he learned enough by attending this one conference to justify his trip from Watsonville to Los Angeles. This statement, together with the fact that a large number of potato growers made similar remarks at the close of the day's conference, indicates a renewed interest in the producing of this staple. Still better, there were steps taken which will doubtless lead to a potato growers organization and also a seed potato growers association. California is one of the best potato producing sections and this industry has never been given its fullest development.

SPECIAL SESSION

There continues insistent demand upon the governor to call a special session of the legislature to consider the invasion of Japanese farmers on California lands. The governor called the special session which immediately ratified the woman's suffrage amendment. He refuses at this time to call a special session to discuss the Japanese question. He feels that greatest care should be used in approaching a problem which may result in international complications. The governor is gathering fullest information which he hopes to place before the state legislators when they shall be asked to act on the matter. Senator Inman has announced that the governor has promised this shall be not later than January 5.

It is very probable the governor is right. However, the pressure will continue for instant action until something is done to redeem the state. As an indication of the temper of Californians the following expression in the Pajaronian is but a sample of many others:

"It is then impossible for the red-blooded American citizen of California to understand why he should sit quietly and let another nation encroach upon our territory and through fraud secure control of the best of our agricultural lands. The danger to America from Germany pales into insignificance when compared to the menace to America and American institutions that this inroad of an alien race presages. It is an insidious invasion that from its uncanny peacefulness has reached an extent unbelievable to the average citizen of the country, although it is only too well known to the people of California."

BETTER COMMISSIONS

The efficiency of the horticultural commissions has been shown during the past year to a greater extent than in any period of the state's history. Their work has been somewhat enlarged by the standardization act which creates an entirely new field of horticultural police work. In addition two other police duties of the commission, those of pest quarantine and control, have been greatly enlarged.

The report of Los Angeles County's commissioner, H. J. Ryan, contains one item of large interest in that "26,825 incoming trees and plants were found to be unfit to pass and were treated or destroyed or returned to point of shipment." How large a saving this may have made to the horticultural interests of the county may never be known; it is possible that some of the returned shipments might have been passed, but certainly the lessons which have been taught the California fruit growing industry because of the lax methods of years ago convince the great majority that the only safety of the country lies in strict quarantine regulations.

But here is the best part of Commissioner Ryan's report: "The control of scale insects in citrus orchards has become so generally practiced in this county that it is seldom necessary to serve notice upon the commercial grower to clean his trees. Of the hundreds of acres of citrus orchards which were fumigated in various inspection districts during the past season it was necessary in but five cases to serve notices and ask for bids to do the work." And this not because of fear of the law, but because of recognition of the fact that self interest demands a thorough cleanup.

Lime-Sulphur

By H. P. Barss, Plant Pathologist Oregon Experiment Station

Commercial lime-sulphur ready-to-use-mixture is now so perfectly and economically prepared that it is seldom the open fire method of making the solution is followed by the orchardist. Even the large orchardists have found its use most satisfactory. For those who prefer to make their own or for those who wish information as to method of manufacture we quote from Prof. Barss of the Oregon experiment station.

THIS mixture has in recent years come to take the place of Bordeaux and other fungicides for the control of many plant diseases. Its effectiveness as an insecticide against San Jose scale gives it an added advantage. It is a combination of lime and sulphur, manufactured in concentrated form and diluted with water to various strengths for various purposes. Like Bordeaux, this material under certain conditions, has drawbacks which must be taken into consideration.

Commercial Concentrated Lime-Sulphur

This material is now made and sold in large quantities by many reliable firms in this state and elsewhere. The commercial solutions are usually fully equal, if not superior to, the average home made lime-sulphur.

Unless a grower has a large acreage or unless several growers can combine and make lime-sulphur for all at one plant, it is usually more economical to purchase the commercial article. Taking into consideration the cost of materials, equipment. time and labor, it may be said that the cost of making lime-sulphur in small quantities on the farm will generally be considerably greater than the cost of the commercial article at prevailing prices.

How to Make Lime-Sulphur

Lime-sulphur may be prepared by boiling the materials over an open fire, but this method is less satisfactory and uniform in its results than that in which live steam under pressure is used in the boiling process.

Chemist H. V. Tartar of the Oregon agricultural experiment station, after testing various ways of making this material, recommends the following method as one which if carefully followed will give a practically uniform product of high quality, testing just about 30 degrees Baume. "Take 110 pounds of good quality stone lime and slake it. Then take 220 pounds of finely ground sulphur, sifted to remove lumps, and mix carefully with a little water until a rather thick, but smooth, paste is secured. Add the sulphur paste to the slaked lime in the vat or cooker. Then add water to make the volume of the mixture 108 gallons. Turn in the steam. Sufficient steam pressure should be provided to bring the material to a boil in about twenty minutes. If much longer is required the condensing steam will dilute the solution too much. To insure complete combination of the sulphur and lime the material should be thoroughly agitated through the whole of the cooking. After it has reached an active boil, allow the mixture to continue boiling vigorously for 30 to 35 minutes. Never boil more than 35 or 40 minutes, as changes begin to occur that will reduce the test of the solution. The solution should be allowed to cool as rapidly as possible. After the sediment is allowed to settle the supernatant liquid is drawn off. This should give about 85 gallons of concentrated lime-sulphur solution testing about 30 degrees Baume. The cooking vat should never be filled more than two-thirds full, since the mixture will seethe up a great deal while the chemical action is going on. In making up lime-sulphur in larger or smaller quantities the same proportions of lime and sulphur and water should of course be used."

Where the cooking is done in a 50 gallon barrel or kettle the following formula gives about the quantities desirable: 30 pounds good quality stone lime; 60 pounds finely ground sulphur; water sufficient to make 30 gallons.

If prepared in kettle with fire beneath, the volume should be increased to about 35 gallons at the start to allow for evaporation.

Dilution

The grower who makes his own lime-sulphur should always secure from the druggist a Baume acid scale hydrometer to test his stock solutions. Otherwise he will have no idea as to the correct amount of water to use in diluting for use in spraying. The commercial solutions have the strength marked on the barrel. The following table shows the number of gallons of water to use for the usual winter or dormant strength and for the average summer or foliage strength with each gallon of concentrated lime-sulphur ranging in test from 25 to 35 degrees Baume. Peaches should not be sprayed with lime-sulphur of any strength when leaves are out.

Lime-Sulphur Dilution Table

Hydrometer test of concentrated solution	Number of gallons of water to one gallon of concentrated solution	
	Winter strength	Summer strength
35	9	45
34	8¾	43
33	8¼	41
32	8	40
31	7½	38
30	7¼	36
29	7	35
28	6½	33
27	6¼	32
26	6	30
25	5½	29

The different proportions of lime-sulphur recommended for the various spray dilutions are based on the use of a concentrated solution testing approximately 32 degrees Baume. If the stock solution tests weaker or stronger than this the amount of water used to dilute should vary accordingly.

Injury

Lime-sulphur, even in very dilute form, is liable to injure peach foliage severely. Under certain conditions prune fruit and foliage have also been injured by it. Even apple fruit and foliage often suffer, particularly in the late spring when very hot weather occurs. The reasons for the injury are not clear, but the use of lime-sulphur should, if possible, be avoided for the late apple scab sprays, especially in sections where spells of extremely hot weather are likely to occur. If the fruit is sufficiently developed, Bordeaux may be substituted and such materials as atomic sulphur may prove to be satisfactory if certain precautions are observed. Self boiled lime-sulphur also ought to be harmless and of some value as a substitute.

Combinations

Lime-sulphur may be combined without detriment with nicotine sulphate preparations to control plant lice and with arsenate of lead for codling moth and foliage eating insects, or with both nicotine and arsenate together. It can not be used safely with a soap or resin sticker.

CITRUS GROWERS FARM BUREAU MEETING

By H. E. Drobish

Robert Hodgson, farm adviser of Los Angeles County and former resident of Butte County, addressed a meeting of citrus growers in Wyandotte Tuesday evening, October 28. A large crowd gathered from all the near by orange growing districts to hear Mr. Hodgson discuss the subject of June drop. He stated that the June drop of oranges and olives was probably caused by the same fundamental factors. Scientific evidence shows that when the transpiration of water from the leaves is faster than the absorptive power through the roots abcission takes places and the fruits drop. Mr. Hodgson said that even though June drop was caused by the climatic factor this could be altered by the growing of cover crops and the use of a mulch and increasing the plant food in the soil. He especially stressed the point of using animal manure in order to prevent the drop of the fruit and said that a tree could get along with half the amount of water ordinarily required if there is an abundance of plant food in the soil.

Southern California growers are using 15 to 20 tons of manure per acre and Butte County citrus growers must realize that growing oranges without plenty of fertilizer is not a profitable venture.

Dr. H. S. Fawcett of the citrus experiment station also addressed the meeting on the subject of citrus blast. Dr. Fawcett, in cooperation with the farm adviser, has outlined experimental plans for determining how to handle blast. Several growers in the Wyandotte and Thermalito sections are having plots of trees sprayed with various solutions and it is hoped that at least one of these may prove to be beneficial in controlling the blast this winter. Dr. Fawcett has been in the Oroville district for several days supervising this work.

Agri GYPSUM

Gypsum, if applied to your land, will release bound-up elements that are valuable and essential as plant foods.

Authorities on soil chemistry and plant foods everywhere recommend and advocate the use of gypsum where the soil is pregnant with useful elements but which, being combined with other elements, render them useless until released by the addition of Gypsum.

Gypsum unlocks the soil, liberates nitrogen, potash, and phosphorus of the soil for the use of crops. Use gypsum as a "soil stimulant" on your truck crops as well as other crops.

For many years Gypsum (commonly called "land plaster") has been used by farmers and horticulturists with the same beneficial effects in every advanced agricultural country in the world.

Nitrogen is the most expensive of plant foods. Save the nitrogen in your manure by using gypsum on it as a preservative. (Every dollar's worth of gypsum applied to manure will save two or three dollar's worth of nitrogen.) The calcium and sulphur of the gypsum will go on the land with the manure and pay for the gypsum several more times.

Gypsum Is a Specific for Black Alkali

It transforms the harmful sodium carbonate of the alkali into harmless calcium carbonate.

Gypsum supplies the lime calcium in soil deficient in lime and also supplies sulphur which is a fertilizer.

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Gypsum furnishes calcium and sulphur to crops. Both of these are necessary crop foods. Calcium is deficient in many soils and sulphur is scarce in practically all soils.

California crops especially benefited by gypsum include melilotus, vetch, alfalfa, beans, peas, potatoes, rice. The legumes use much sulphur (gypsum is calcium and sulphur). **Citrus and deciduous groves are benefited by the action of gypsum in liberating essential elements in the soil.**

Buy Gypsum of the largest producer of Gypsum in the world and get it ground fine, and properly prepared. Inquiries as to what may reasonably be expected of Gypsum as it would affect your soil can be determined by soil analysis, which we can arrange.

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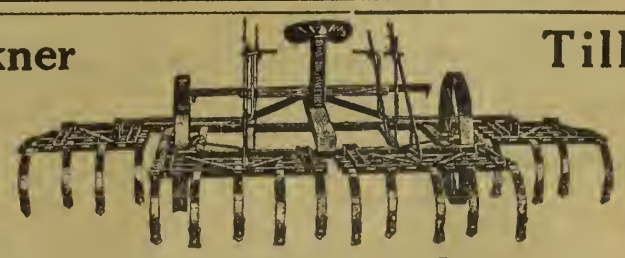

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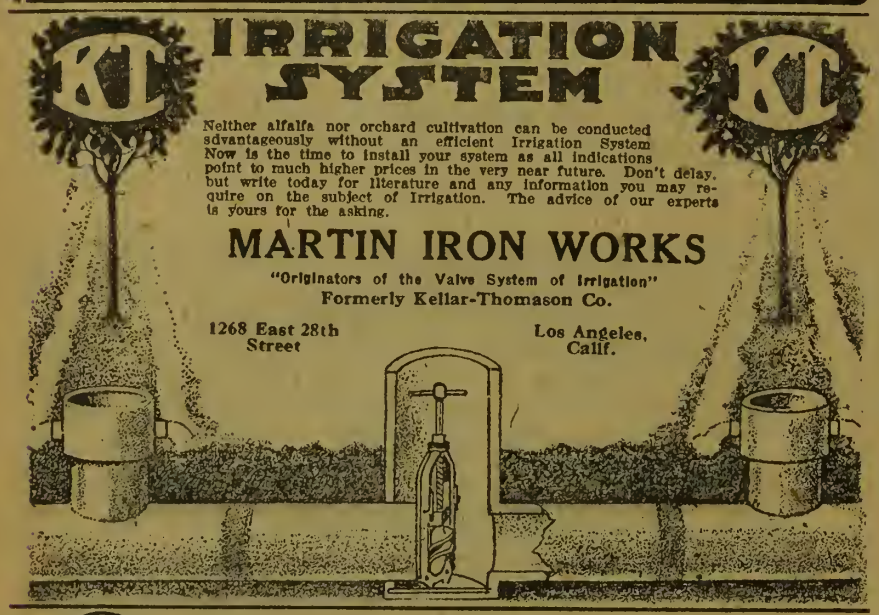

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The Home Orchard in California

By J. W. Mills

THE home orchard should be planned to give not only variety of fruit but succession of ripening, so that fresh fruit may be had continuously during the season; therefore, the plan of selection is very important.

Soil

Select your trees from a reliable nursery, then exercise care in handling them until planted. If the ground is not in readiness for planting when the trees arrive, dig a trench large enough to admit the roots. Loosen the bundle of trees, separate the roots and put the trees in the trench. Fill in with soil and pack firmly about the roots to shut out the air. The trees may be kept "heeled in" for a considerable time, but must be planted before the buds start to grow.

Time to Plant

You may plant at any time during the dormant season, but preferably in November or December. However, trees do well planted in February if you cannot plant earlier.

How to Plant

Dig the hole large enough so the roots will not be crowded. Fill the bottom with good soil and plant the tree one inch deeper than it was in the nursery. Firm the soil well about the roots with the foot as the hole is being filled. This is very important. The top of the tree should now be cut back.

Care After Planting

Apply fertilizer and work it in with the cultivator. Stable manure is the best, but any vegetable matter that decays readily is beneficial. Cover crops may be sown in the fall and turned under. Give frequent cultivation the first part of the season after planting to keep weeds down.

Varieties

Varieties of the different fruits found satisfactory under California conditions are:

Apples—Bellflower, Yellow Newtown, Gravenstein, Rome Beauty, White Pearmain.

Pears—Bartlett, Winter Nelis, Anjou, Seckel.

Prunes—Sugar, Agen (French), Imperial, Silver.

Peaches—Phillips' (yellow cling), Foster (yellow cling), J. H. Hale, Elberta (yellow free), Muir (yellow free), Alexander (white cling), Opulence.

Plums—Wickson, Kelsey, Clyman, Burbank.

Cherries—Royal Ann, Bing, Tartarian.

Apricots—Royal, Newcastle.

Figs—Mission (black), Kadota, Calimyrna (white, caprified).

Grapes—Thompson (seedless), Tokay (red), Cornichon (black), Muscat (white), Hamburg (black), Gros Colman (black).

Raspberries — Cuthbert (northern part), Surprise (southern part).

Blackberries—Mammoth, Himalaya, Crandall.

Strawberries — Marshall, Brandywine, Oregon.

Currant—Perfection (coast).

Pruning

The intelligent way to prune is to begin when the tree is first set out and then each succeeding season cut out the branches that are not needed. This should be done during the dormant stage. About three to five branches should be selected to form the "scaffold" of the tree, with a view to the symmetry of the tree. If possible have a space of two inches vertically between adjacent branches. This tends to prevent splitting when heavily laden with fruit. After the second season superfluous branches should be cut out to admit the air and sunshine, and there should be some heading back of the previous season's growth. When branches are removed the cut should be smooth and close to the body of the tree. Do not cut too much wood out. Head back and thin out the top. If possible do not cut off side branches. If pruning is too severe it delays the bearing period. If the wounds made in pruning are too severe to heal coat with a good grade of white lead thinned with linseed oil.

Spraying

Spraying is one of the most important if not the most important operation of the orchard. It should be done at the proper time and not put off for a more convenient time. It prevents insects from becoming serious pests and prevents fungous diseases from gaining a foothold. A large barrel outfit may be used but a gasoline power outfit will do better work and should be used on large trees. The standard insecticide and fungicide most commonly recommended for a dormant season spray is concentrated lime-sulphur solution, which is easily made at home in the proportions of 50 pounds rock lime, 100 pounds sulphur, water to make 50 gallons. This keeps indefinitely if strained and stored in full stoppered barrels. Dilute this according to your spray calendar when using, and use at once.

South Needs More Peaches

By Ernest Braunton

THIS year the larger canneries echoed the same old cry: "We need more peaches, better peaches, and a greater variety." Canneries in peach growing districts of the South were able to care for the full local crop, as in years past. The supply has not sufficiently increased to meet the growing demand. The larger canneries of Los Angeles still depend on shipping in their total peach supply from the San Joaquin Valley. This year the railroad strike practically shut off this supply; the crop was diverted to the canneries near by that could easily be reached by motor truck. Los Angeles canned few peaches.

Yet the peach crop in the South was a good one, in many sections the best known. Down in the Hemet-San Jacinto section they were claiming that Phillips Cling this year grew nearly as large as grapefruit. Certain it is that they were the largest ever seen and the crop was good. But the fact remains that there was no surplus beyond the needs of the local canneries and none were sent to Los Angeles. Nearly all peaches consumed in Los Angeles, both table and canning varieties, come from the north.

It seems that except in a few sections of the south, such as the one noted, growers have not yet determined what varieties are best to grow. One experienced handler was asked what table peaches were most in demand. He stated that in the order of their importance he would name Early Crawford, Elberta and Tuscan Cling as the three leaders he preferred. But there was a marked shortage of these during the past season and the outlook is good for the planter and poor for the ultimate consumer.

Canning Varieties

To determine those most in demand the writer visited the large plant of the California Packing Corporation in Los Angeles. The superintendent, E. J. Kitterman, looked over the list shown him of the varieties he stated last year were the best and said there was no change either in demand or his views, Lovell continues to be the best of all for canning. This view may be colored by the fact that it is the best shipper, for this cannery gets its entire supply from north of the

Tehachapi, over 2,000 tons in a normal season. Yet Mr. Kitterman stated they would welcome home grown peaches; but the surplus is too limited and the cost of collecting in small lots would be too great. They must buy where the supply is heaviest. It is quite evident the South should plant more peaches.

Next to the Lovell in freestones come Muir, Crawford and Foster. At present other varieties are not asked for but it is up to the grower to show what are best. The canneries want the best peaches and care not what the name. In the clingstones they stand in the order of their desirability as follows: Tuscan, Phillips, Orange, and Sims. It is probable Sims will move up the list, perhaps to the head, but it is yet little known, though of the highest quality. There are 50 varieties listed in California catalogs and but a small per cent has been widely planted. Every planter should try a few of each variety known to do well under conditions of soil and climate nearly similar. The varieties named are now the ones most in demand in all parts of California. The normal season for peaches runs approximately from July 20 to October 20, but the source of supply sets the season and their ripening period in some localities is at considerable variance with that of the same varieties in other parts.

Apricots

Apricots this year were plentiful but poor in quality. In the South they are mainly Royal, with a few Moorpark. Farther north one finds Hemskirke and Blenheim. Apricots should have been thinned. Had this been done the returns would have been greater for the canneries prefer large fruit. Thinning brings larger size, better color, improved flavor and an equal tonnage. The cannery run for apricots is generally from June 20 to August, much shorter than the peach season. But the crop of good apricots is as short as the peach crop and investigation fully proves that we need more stone fruit.

TAKE CARE OF THE ROOTS AT PLANTING TIME

The root system of the tree should be pruned just before setting. The tap root should be preserved. The main laterals should be shortened to about six inches. The small fibrous roots should be pruned off. This is very important since if they remain intact they are an incumbrance to the tree. These fibruous roots not only die, for the most part, but they prevent getting the soil in close contact with the essential larger roots. As trees are ordinarily handled the small fibrous roots dry out and die before the tree is set. They coil more or less around the larger roots like a mass of curled hair. Even if the tree can be dug and planted immediately the fibrous roots cannot be depended upon to start new growth unless a mass of moist soil can be moved with the roots so as not to disturb the fibrous roots in the soil. Even the naked fibrous roots, if not dried out, are bent so much in setting that they cannot function.

If a main root is more than six or eight inches long it should be shortened. Long roots cannot well be set without bending. A bent or twisted root does not function so well as a shorter root which lies in its normal position. If the end of an essential root has a ragged wound it should be cut back to fresh, healthy tissue, with a clean, smooth cut. If, however, the end of an essential root has calloused and is healthy, it should not be cut unless the root is too long to plant without bending.

TRADE TERMS STANDARDIZED

A set of 28 rules and definitions of terms used in the fruit and vegetable trade has been worked out by four of the largest produce trade organizations. It is an outgrowth of the cooperation of these four organizations with the food administration and the bureaus of markets of the United States department of agriculture. Included are definitions of "tomorrow's shipment," "today's shipment," "f. o. b. sales or quotations," "c. a. c. sales," and "minimum and maximum loading." Wide adoption of these rules and definitions will mean fewer misunderstandings between shippers and receivers, and the bureau of markets, therefore urges that they be adopted by all individuals and firms handling fruit and vegetables.

TREE PLANTING LAST YEAR

Horticultural Commissioner Ryan, of Los Angeles County, has compiled figures as to planting in that one county for the 12 months ending on July 1. While a great peach producing county, it is to be noted in the table below that compared to citrus and other fruits peaches were hardly touched. The two favorites in Los Angeles County are Valencias and walnuts. Nearly ten acres of Valencias were planted to one of Navels, a complete reversal of proportions from a period of, say, ten years ago. Figures in detail are:

Navels	152 acres
Valencias	1,260 "
Lemons	756 "
Grapefruit	5 "
Apples	46 "
Apricots	270 "
Pears	215 "
Peaches	181 "
Plums	45 "
Walnuts	1,042 "
Almonds	35 "
Figs	10 "
Olives	15 "
Avocados	10 "
Prunes	15 "

REGULATE SALE OF BORAX-POTASH

The department of agriculture has investigated the damage to crops attributed to the use of fertilizer containing high borax-potash, and has traced in important instances this potash to the product of Searles Lake. In order to permit the safe use of this product in future, the department has decided to place such restrictions on the use of potash salts containing borax as will guarantee the use of an application of not more than two pounds of anhydrous borax per acre, and has issued instructions to the producers of potash salts at Searles Lake and to all brokers, fertilizer manufacturers and mixers not to sell potash salts direct to farmers as straight goods when they contain more than five-tenths of one per cent of borax and not to sell mixed fertilizers containing more than two pounds of borax per ton unless the amount of borax contained is plainly shown upon the container.

This regulation is issued to insure that in no case shall a fertilizer application be made by farmers without their knowledge, which would add more than two pounds of borax to the acre. The department feels that such restrictions will make the use of potash salts from Searles Lake as safe under all conditions of agriculture as is the use of nitrate of soda, acid phosphate and other fertilizer constituents.

RENTING BEES

The Western Honey Bee is authority for the statement that fruit growers of the Yakima Valley are renting bees to pollenize their orchards. One cherry grower has contracted for 40 stands for next spring to place in an orchard of six and one-half acres. He is to pay $5 a stand, move the bees to his orchard at the beginning of the blossoming season and return them to the owner at the end of the period. The owner is to have all honey manufactured. It is also stated that many bees have been killed by the unusually late and heavy spraying given to the trees and that much fruit was consequently lost through lack of fertilization.

WHERE RAISINS GO

During the month of June 229,427 pounds of raisins, valued at $24,405, were shipped from the port of San Francisco. Canada took over two-thirds of them at $18,871, while Mexico was a poor second with less than one-thirteenth as much, or only $1,410. The other buyers, in their order of importance, were: Japan, Hong Kong, Peru, Philippines, Dutch East Indies, China, Japanese China, Straits Settlements, Korea, Salvador, Siam, Guatemala, and down the list to a minimum shipment of 61 pounds, valued at $8, to German Oceania.

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"It's great stuff—and I thank my stars I've learned to use it. I'm mighty glad, too, that when I started I didn't experiment—I sent to the Hercules Powder Co. for their book, 'Progressive Cultivation'. This book tells not only what dynamite will *do*, but *how to use it* to get the best results. And I get pointers out of that book *today*, although I've been using dynamite for years.

"'Progressive Cultivation' is worth its weight in gold to any farmer or orchardist and they can get it free by signing and sending in the attached coupon."

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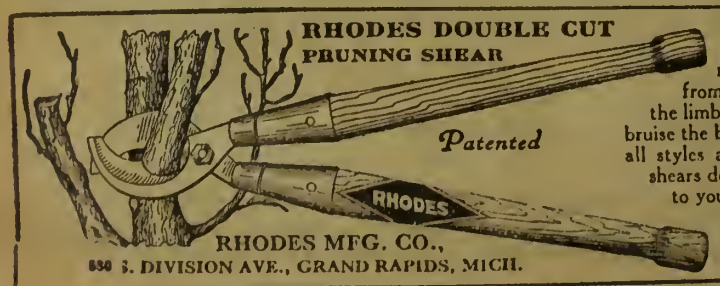

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Keeping Cider Sweet

Please give proportions of soda benzoate to use in order to keep cider sweet, that is, how much should one put in a 50 gallon barrel and at what time?—Subscriber, Acton.

We would refer to answer to similar questions in the Cultivator of August 1 on page 174 and September 6, page 300. Neither of these methods of keeping uses benzoate of soda; in fact, its use is so liable to be harmful that it is not recommended by the department of agriculture. The best sterilizer is heat and sealing the cider in air tight containers. Time of sterilizing differs according to one's taste. If it is wanted perfectly sweet it should be sterilized immediately after crushing. Under present laws it will not be wise to permit any fermentation. The calcium sulphate treatment recomended in the Cultivator of August 16 is to be preferred to the use of benzoate of soda and should be used in the proportions of one-fourth ounce calcium sulphite to one gallon cider. More detailed information may be had by writing Bureau of Chemistry, United States Department of Agriculture, Washington, D. C. Extended investigations have been made into this subject and the results are embodied in a bulletin.

Spraying for Scale and Mealybug

Please tell me what kind of spray or wash to use on an orange tree infested with scale and mealybugs? Fumigating would not be possible because I do not believe the necessary apparatus could be had in this county as citrus fruit is not raised in a commercial way.—Subscriber, Redwood City.

Apply kerosene emulsion, formula for which was given in the Cultivator of August 9, or, perhaps better still, get small parcel of commercial ready-to-use spray either of emulsion, rosin wash or other mixture. For such a small quantity as suggested here it is very probable that the commercial mixture would be preferred.

Black and Brown Scale

Will you tell me what kind of scale my trees are infested with? I am sending a specimen under separate cover. The scale seems to attract the ants in large numbers. Do these ants protect or destroy the scale? I have sprayed twice with kerosene emulsion—Subscriber, Palms.

The twigs sent in were infested with both black and soft brown scale, the black predominating. It is not always easy to tell the difference between these two scales, but the observer who wishes to be sure may look for the letter "H" which is formed on the "back" of the black scale. Sometimes the "H" is very distinct. If it is, then it is certainly not the brown scale. However, both these scales are so nearly alike, and the same method of procedure is necessary to rid the trees of them, that it is not of commercial importance that one should know which variety is which. Kerosene emulsion should have been sufficient to have eradicated the pests if well applied and done in season. To reach these pests spray any time from the present until the first of January. After that date ordinary sprays may not be so effective. We do not know that the ants protect or otherwise deal with scale, but we do know that they are attracted by the honey dew exuded by the scale; also that they do protect and care for the aphis which exude honey dew. In fact, we have heard the aphis called the dairy cows of the ants. If the scale is removed it is probable the ants will also disappear.

California Roads

How many miles of good roads are there in California?—Subscriber, Minnesota.

This question was submitted to the Automobile Club of Southern California and it answers as follows:

"To June 1, there were 6,064 miles of hard surfaced roads in California These figures are as nearly correct as we are able to determine, as there are a few remote counties that we have not been able to check. Los Angeles County alone has 1,208 miles of hard surfaced road. The average cost per mile in this state is in the neighborhood of $18,500 per mile. In the 13 southern counties of Southern California, which is the territory over which this club extends its activities, there are approximately 2,603 miles of paved road, while in the remaining 45 counties of the state, with the exception of a few remote counties we have not heard from, there are 2,253 miles."

WHY OWN AN AUTOMOBILE?

Continued from Page 611

and range of utility. It can be used to carry livestock and will hold a good supply of bulky stuff, such as baled hay, alfalfa or large milk cans.

So popular have trailers become that in California the law requires them to be registered in the same manner as automobiles. An annual fee of $2 per trailer is required and not more than two trailers may be drawn by one vehicle. The rear trailer must display a red tail light at night, so arranged as to illuminate the license number plate.

Professionally built trailers are cheaper in the long stretch. Close attention should be given to the connection with the touring car, since the best regulated of trailers have been known to shake loose from their moorings and remain stranded in mid-road Pneumatic tires justify their additional cost as well as conserving the expensive surface of the highways. Metal tires are noisy and transmit vibration. Vehicles drawing metal tired trailers are limited to a speed of ten miles per hour, and this only provided the spring equipment is adequate.

A trailer which does not "track" correctly will exert terrific side strain on the car drawing it and eventually send the entire outfit to the repair shop. Many who pamper their cars with hours of careful attention are guilty of gross neglect in the care of the trailer. The wheel bearings of the trailer should be given the same attention as those on any machine and the springs lubricated occasionally as well.

Automobiles can no longer be purchased over the counter like bread or cheese; all manufacturers of motor cars are overwhelmed with orders. The farmer or rancher who procrastinates in securing a car should realize that the delay is costing him real money. Utilization of the automobile, supplemented by tractor equipment, will free valuable pasture land for cultivation as well as reduce the acreage required to grow feed for livestock. Likewise in the barn hundreds of cubic feet of storage space will be available for other things than bulky hay and alfalfa feed. "Fodder" for the automobile can be kept in two small tanks, one for oil and the other for gas.

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When Writing Advertisers, Mention The Cultivator.

Discarding the dollars and cents viewpoint to consider the social aspect of the automobile, we come to perhaps the major point of all benefits to be derived. The automobile is a connecting link between the farm and the educational, cultural and amusement centers of the cities. Most California land is located within several miles of a population center where a school, church or theater, perhaps all three, may be found. With good roads and good lights the trip to town and back or an evening jaunt to the home of a neighbor is keen, invigorating sport.

Lectures, concerts and other broadening influences of city life come into the horizon. Then there are the eagerly anticipated holidays with runs to the beaches or the mountains or "doings" at the county seat. For those who face the problem of keeping the young folks on the farm the automobile is a tremendous asset, often capable in itself of checking the exodus cityward.

When deciding on the car to buy do not be influenced by "bugaboo" rumors concerning certain serious defects in the construction of particular makes. The days of uncertainty are past in the automobile industry. Any car will give you good service if well taken care of, although expense of operation varies with size and weight.

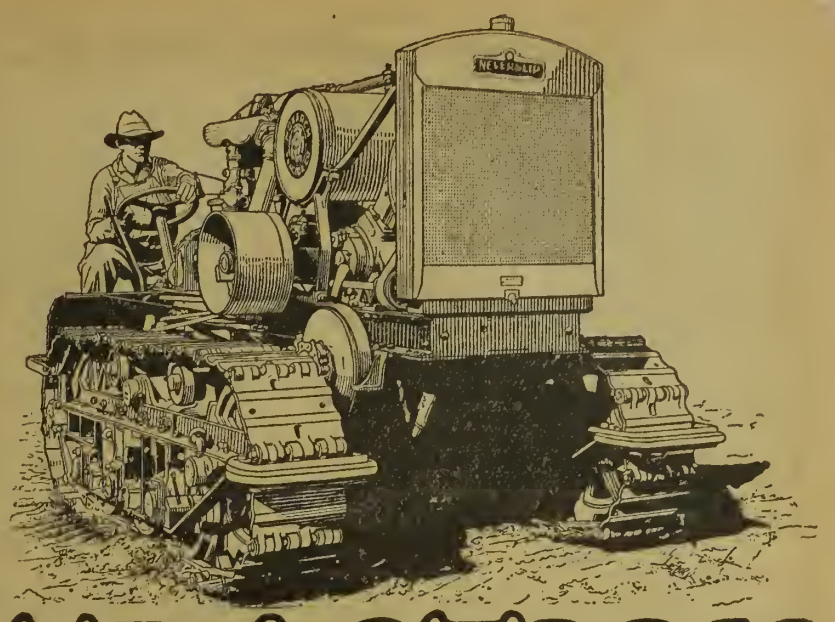
After getting the machine remember that nowadays a man is known by the car he drives. Use polish and elbow grease unsparingly and dust the top frequently. Familiarize yourself with the entire mechanism. Keep continually in mind that oil and grease are cheaper than repairs. Make sure each morning that the tires are up to the pressure specified and the oil reservoir filled to the proper level.

Every state boasts of some particular specialty, but all of them must doff their derbies to California as the realm of gas and rubber. The following figures, recently compiled by the state motor vehicle department, demonstrate also that California farmers are realizing the value of the trailer.

County.	Automobiles.	Trailers.
Alameda	26,861	36
Alpine	16	..
Amador	643	..
Butte	3,867	14
Calaveras	536	..
Colusa	1,704	4
Contra Costa	4,379	..
Del Norte	186	..
El Dorado	562	..
Fresno	19,919	16
Glenn	2,066	12
Humboldt	3,262	3
Imperial	5,851	7
Inyo	947	2
Kern	9,234	16
Kings	3,506	13
Lake	635	..
Lassen	689	..
Los Angeles	109,435	438
Madera	1,506	..
Marin	2,111	4
Mariposa	247	..
Mendocino	1,688	1
Merced	2,914	3
Modoc	679	..
Mono	46	..
Monterey	3,069	6
Napa	2,080	1
Nevada	676	..
Orange	9,794	65
Placer	1,964	..
Plumas	436	1
Riverside	6,078	17
Sacramento	10,488	16
San Benito	1,197	1
San Bernardino	8,383	30
San Diego	12,434	..
San Francisco	37,285	34
San Joaquin	10,488	47
San Luis Obispo	2,791	2
San Mateo	3,327	2
Santa Barbara	5,989	5
Santa Clara	12,022	79
Santa Cruz	2,810	2
Shasta	1,401	..
Sierra	153	..
Siskiyou	1,590	..
Solano	3,643	..
Sonoma	6,216	2
Stanislaus	7,706	17
Sutter	1,412	1
Tehama	1,625	2
Trinity	98	..
Tulare	9,129	22
Tuolumne	703	..
Ventura	3,968	19
Yolo	2,953	12
Yuba	1,353	4
Totals	376,768	956

ALAMEDA COW TESTING ASSOCIATION

Clarence V. Castle reports cows which are in the honor class, that is, 40 pounds or better, in the Alameda County Cow Testing Association, for the month ending September 30. The high record cow for the month was in the Hoopman dairy, a grade Holstein, producing 52.90 pounds butter fat. Other record dairies were those of Shinard Lee and F. Stenzel.



TRACTION

Power on a tractor is of little relative value unless it is applied to afford maximum fraction. Traction is what counts. It is the primary reason for a tractor and TRACTION is the outstanding feature of the MONARCH Tractor. It has power—plenty of it—mechanical perfection, strength, ruggedness and, most essential of all, it has maximum traction delivered by means of the endless MONARCH tracks. These tracks enable the

MONARCH Tractor

to get over the ground with a greater grip than a dozen drive wheels. They have an irresistible creep that laughs at hills, grades and loads. In addition, the weight is so distributed that, inch for inch, it is no greater than the weight of an average man's foot. This means that the MONARCH Tractor will not pack the soil.

Where the Grades are Heavy and the Going is Hard

You can use the MONARCH Tractor everywhere. The secret of MONARCH power and success is in the TRACTION principle. Before you buy a tractor you should see the MONARCH 16-9—the logical tractor for the average farm—a combination of power and convenience. The rating is 16 H.P. on the belt pulley and 9 H. P. on the drawbar. Powerful enough to pull from two to three bottoms. It will turn in its own length and work where horses cannot go.

Do not confuse MONARCH Tractors with the so-called "track-laying" types. The track on the MONARCH is made of wear resisting manganese steel. We guarantee to duplicate for MONARCH Tractors *any written warranty* put out by any other responsible tractor manufacturer.

MONARCH Tractors are made in the following sizes:
16-9 H. P., 20-12 H. P. and 30-18 H. P.

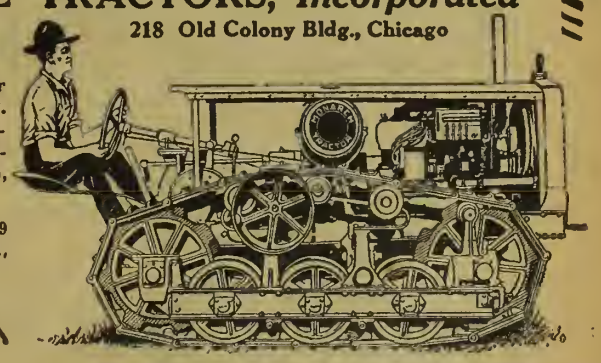
Write for our Performance Booklet and full particulars.

GENERAL TRACTORS, *Incorporated*
218 Old Colony Bldg., Chicago

Distributors:

Monarch Tractor Sales Company, F. H. Walker, Manager, 120 South Aurora St., Stockton, Cal.

C. G. Wuthrich, 219 So. Los Angeles St., Los Angeles, Cal.



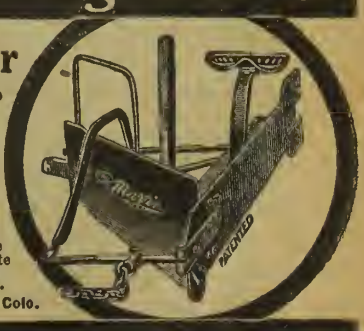
Smash Ditching Costs

This is the year

Save time and money. Let us ship you a Martin on trial. Makes and cleans all ditches down to 4 feet deep at one-tenth former cost. Works in any soil, wet or dry.

Horse and tractor sizes. All-steel, adjustable, reversible. Will go close to fences or hillsides or level ground. No breakage, no repairs. Lasts a lifetime. We want a chance to send the Book of the Martin and a list of users near you. Write

Owensboro Ditcher & Grader Co., Inc.
1590 Wazee Street Denver, Colo.



10 Days' Free Trial

THE Martin COLO.

Takes the labor and expense out of every dirt moving job

Advertise the Farm

CALIFORNIA producers have learned to cooperate and in learning to cooperate have learned to advertise. This has been shown most effectively in a recent number of a large Eastern magazine, five full pages of which, all in colors, were used to advertise California products. Some members of those organizations were doubtless astonished at this advertising campaign, especially when it was considered that those five pages in one issue of the magazine cost more than some of the California's finest and best equipped little ranches. Yet we doubt not this investment in that magazine paid good returns. So collectively we have learned to advertise, but individually there is still a lesson for the farm owner.

Since there are occasions when the livestock breeder or the producer of nursery trees or pure seed may wish to reach readers of the Cultivator, this talk may sound somewhat like advertising this paper, yet it is not that type of advertising to which we are now referring, rather to advertising secured through attracive appearance of the farm, well kept yards about buildings and lawns, attractive signs or bulletin boards located in front of the grounds.

It is not often that the passer-by sees in front of the stock breeders home a neatly painted, well kept sign indicating that it is the home of pure bred beef or dairy animals or draft horses or swine. Yet some of those same breeders carry in a paper like the Cultivator expensive announcements. We would not encourage lessening of advertising in the Cultivator, but we would urge making this advertising more effective by definitely locating in people's minds the site of the farm. Attractiveness is lent to these signs if they also announce the name of the place, such as Riverdale Farm, Wayside Ranch, Oaknoll Herd of Jerseys.

Speaking of livestock advertising the Nebraska Farmer thus mentions a specific instance:

"Most breeders have already learned the value of livestock advertising, especially when sales are held. There are others who have built up a large year-round business through more general advertising. One of the most successful Jersey farms in the East has a truly wonderful array of advertising literature. This farm is in a very picturesque location, and some of the best photographic artists that could be obtained have made pictures of it. Attractive pictures of the stock in pretty surroundings are invariably taken. So far is the photographic work carried on this farm that a prospective customer can request a print of any of the more prominent animals on the place and it will be forwarded to him at once, with important data typewritten on the back.

A story regarding the farm published in an agricultural journal was reprinted for advertising matter. There are booklets that describe all the principal Jersey families on the place. All the information that could be desired is included in some printed matter that the farm has. All of this is in addition to regular advertising carried in the breed and general farm papers. In fact, this printed matter is used simply as a means to follow up the inquiries that are received.

"In Wisconsin there is a breeder who sells practically all his pigs before they are born. He advertises the year round and practically everything is engaged in advance. This breeder thinks it sounds better to say that he is sold out instead of having 200 pigs on hand, but he immediately puts the customer down for delivery a few months ahead. He answers all inquiries the day they are received."

Other good advertising is secured by attractive ranch stationery. The home printer in every town should take pains to put out the most attractive letterheads possible for producers of the community. His work advertises the farmer and the community. Five hundred sheets of paper all printed often costs little more than the same amount purchased in little quantities from time to time at the store.

Rice Binder Working Under Difficulties

RICE BINDER

Herewith is illustration of a rice binder which is giving entire satisfaction under abnormal conditions. It was being tested at the time of taking the photo, operated over water soaked ground. One of the best features is that the tractor travels only over stubble that has already been cut. The work is done directly ahead of the machine and it does not run over a spear of rice. Another advantage is that with the wooden planks, 19 inches wide, bolted to its tracks, the pressure to the square inch is less than four pounds, while on the average rice binder it is 75 pounds to the square inch.

This binder is attached to a Monarch tractor. Manager Walker writes:

"The only changes that we make on the tractor are to put in a 90 inch axle and bore four holes in the front of the frame. The reason for the demand for a machine of this type is that the rice is all grown in checks ranging from one acre to ten or sometimes 15. It is impossible and not practical to try to cross the checks in cutting the crop. In order to save the big loss that there would be by horse binders making the first round inside of the checks, most rice men cut a strip around the edge of each check by hand. You can imagine the time it would take a man to cut a strip eight feet wide around the check with a little handle sickle. He will also thresh out and lose considerable. If this is not done, the horses in going around the first time will tramp down considerable and the binder will run over such an amount that they cannot well afford to stand this loss. On the other hand cutting around the check by hand with labor at the price it is at the present time, eats up considerable of the profit."

PROGRAM OF WORK OF THE CALIFORNIA FARM BUREAU FEDERATION

The Cultivator last week gave report of the convention at Berkeley of the California Farm Bureau Federation. Farm Adviser Hodgson of Los Angeles County this week tells of the special program of work to be taken up by the California bureaus.

Work will be along the following lines: Livestock improvement, irrigation and drainage, cooperative marketing, handling of grain, community improvement, fruit growing problems, and education.

The livestock improvement committee, which will be headed by J. W Schmitz, of Madera, intends to carry on a state wide campaign during the winter months for the use of pure bred sires on the farms of California It is expected that through this campaign California livestock will improve much more rapidly than ever before Boys' pig and calf clubs will also be promoted through this livestock committee.

The irrigation and drainage comtee, under the chairmanship of R. L. Morehead, of Sutter County, will attempt to correlate all of the local irrigation projects now under way in the various counties into a state wide campaign for a greater irrigation area in California. Not only increased irrigation will be encouraged, but a definite campaign for alkali prevention will be inaugurated to combat this serious menace.

The committee on marketing, headed by J. A. Teagarden, of Placer County, is to study the marketing problem and promote livestock auction sales. It will also form a wool pool among the sheep raisers and maintain an inter-county exchange for high class products such as pure seed, etc.

The grain growers department, of which George H. Sawyer is the leader, is to work out a plan for disposal of the grain crop of California This will require looking into the matter of grain standards and pooling together with a study of bulk handling

Fred J. Hart, of Salinas, heads the

STYLEPLUS CLOTHES

Styleplus must be good clothes!

Our policy insures it

Our policy insures it.

Styleplus are America's known-priced clothes. The sleeve ticket, put on by us, tells the price.

Exceptional value at each known price—this is the Styleplus policy that insures your complete satisfaction.

Visit the Styleplus Store near you and notice the splendid fabrics and stylish models. Then make your selection—suit or overcoat. Or both. You will have *good* clothes—stylish clothes—clothes that will give fine service—*guaranteed.*

You want to see and try on your clothes *before* you buy them. So buy them at a *store!*

Buy plenty of clothes this fall. Prices are going up, because of market conditions.

Sold by one leading clothing-merchant in most cities and towns. Write us (Dept. AB) for name of local dealer.

HENRY SONNEBORN & CO., Inc.
Founded 1849 Baltimore, Md.

Copyright 1919 Henry Sonneborn & Co., Inc.

The big name in clothes

Styleplus Clothes

$30-$35-$40-$45

And a limited assortment at $25

America's known-priced clothes

Since 1902

Pomona
DUPLEX-PLUNGER
Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface

Send for Catalog 103

Pomona "Made Right" Irrigation Gates and Valves

PRICES RIGHT—QUALITY RIGHT
SEND FOR BOOK C.

POMONA MFG. CO.
POMONA, CAL.

committee on community improvement, which has decided that a campaign for the material improvement of farm homes and rural extension telephones is in order.

The committee on fruit problems, under the chairmanship of Sheridan Baker, considers the two most important problems needing its attention during the coming year are the so-called new "long" system of deciduous pruning and the June drop of citrus. The use of manure and other fertilizers is also to be taken up by them.

The educational committee, of which Volney H. Craig, of San Fernando, is chairman, has under its charge all publicity work for the new organization and will also inaugurate a campaign for improved conditions in rural schools. Included in their publicity work will be an organization paper and assembling and publishing of cost production data.

The following delegates attended the conference: R. L. Morehead, Sutter; E. R. Leedom, Turlock; A. C. Gehringer, Antioch; Geo. H. Sawyer, Waterford; H. B. Woodrough, Harper; J. A. Irving, Placerville; Henry Wheatley, Napa; E. O. Gassoway, Auburn; J. M. Bigger, Stockton; Peter Seith, Palo Cedro; W. H. Walker, Willows; J. W. Schmitz, Madera; J. A. Filcher, Sacramento; L. A. East, Alton; H. A. Hyde, Watsonville; V. H. Craig, San Fernando; G. T. Drinkwater, Lakeside; J. E. Wherrell, Riverside; T. A. Kilkenny, Dixon; J. T. Macomber, Tipton; B. D. Irving, Brawley; C. A. Rinderspacher, Hayward; J. A. Teagarden, Auburn; Geo. Feaver, Fowler: Frank Johnson, Hardwick; C. L. Musgrove, Woodland; F. J. Hart, Salinas; R. B. Peters, San Bernardino; Sheridan Baker, Sonoma; C. L. Sisson, Red Bluff; Prof. B. H. Crocheron, state leader.

HOPS SURVIVE JOHN BARLEYCORN

Hops, after all, are not to die with John Barleycorn. This crop encountered an increasing number of states with laws prohibiting the manufacture and sale of brewed liquors, the national law prohibiting the interstate transportation of such liquors, the war time prohibition, and lastly the amendment to the constitution.

The area devoted to hops declined from 44,700 acres in 1915 to 27,900 acres in 1918 and 26,900 acres in 1919, and the production dropped from 53,000,000 pounds in 1915 to 20,200,000 pounds in 1918. The war, too, reduced hop exports to a low figure. One large producer of hops in California took steps in 1918 to replace the apparently doomed crop with a large business in dehydrating vegetables.

The extremely low price of 12 cents a pound to producers was reached in December, 1916, and the December price of 1918, although 20 cents, was still low. On the contrary, in the autumn of 1919 a market of unprecedented buoyancy was created, mostly by British buyers, who, according to commercial reports, paid very high prices for the new crop and were glad to get old hops. The average price to producers, September 15, reported by the bureau of crop estimates, was 56.6 cents. Nearly all of the crop is raised in New York, Washington, Oregon and California. California hops are now being sold at 60-70 cents.

ANTI-AMERICAN CAMPAIGN

Continued from Page 613

tion, and the Japanese government does not know officially that the 'Gentlemen's Agreement' is being violated. The Times repeats that California has no quarrel with the Japanese government or people, but California insists that the influx of Japanese labor and Japanese picture brides into California must stop."

San Fernando Tribune

"Let us organize and say to the world that there is no room in the San Fernando Valley for the Oriental, and then make good on the declaration."

Paul I. Dougherty, formerly farm adviser in Imperial County, later with the overseas service, has now been chosen as instructor in the animal husbandry division of the University of California.

REMEMBER THE
HORSE-SHOE TREAD

Have You Seen the INTERNATIONAL DEHYDRATOR?

You are invited to inspect a Real Working Dehydrating Machine.

GET YOUR ORDER IN

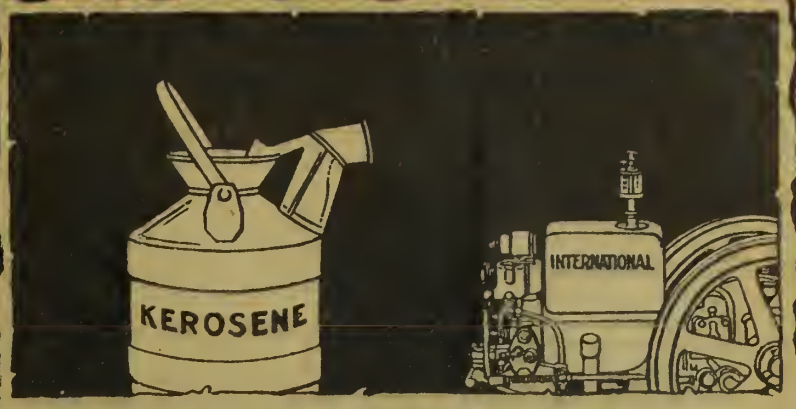
We are now booking orders for next season's deliveries. Save all of your fruits and vegetables and get Dehydrated prices for them.

MAKE MORE DOLLARS.

Write for demonstration appointment.

The International Dehydrator
506 Chamber of Commerce Bldg., Los Angeles, Cal.

Headquarters for IRRIGATION Supplies
Pumps, Engines, Sprayers, Hoists Etc.
Catalog FREE on Request
Smith-Booth-Usher Co.
Los Angeles.



You Wouldn't Haul Crops

to town on your back and yet you unnecessarily break your back doing a lot of odd chores around the farm such as sawing wood, turning the grindstone, pumping water for the livestock, etc., and let your wife and girls wear themselves out over the wash-tub, churn, and separator. Drudgery of this sort was absolutely necessary on the farm once upon a time—but times have changed.

There is no need to let these little jobs take the joy out of life, because an **International Kerosene Engine** will perform all of these tasks—and a lot more, besides—doing the work much faster and more cheaply, to say nothing of doing it better than it could be done by hand. These engines deliver steady, uniform power—**they never lag**—so any machine that they operate works to the best possible advantage. There are three sizes—1½, 3, and 6-h. p. engines.

The 1½ and 3-h. p. engines are the all-around "chore boys" while the 6-h. p. engine is the dependable "man about the farm". It does work that a dozen hired men couldn't do, such as shelling corn at the rate of from 1,000 to 1,500 bushels a day, baling 15 to 20 tons of hay in a day, grinding feed at the rate of from 5 to 25 bushels an hour, and threshing 20 to 40 bushels of wheat an hour (operating a Sterling thresher).

Shall we mail you a catalogue and tell you where you can see an **International Engine?**

INTERNATIONAL HARVESTER COMPANY
OF AMERICA INC.
BILLINGS, MONT. CRAWFORD, NEB. DENVER, COLO. HELENA, MONT
LOS ANGELES, CAL. PORTLAND, ORE. SALT LAKE CITY, UTAH
SAN FRANCISCO, CAL. SPOKANE, WASH.

Sanguinetti's Quality Brand
(1919 Crop)
Alfalfa Seeds

Grown on Certified Fields

Unexcelled for Germination, Purity, Color and Productiveness

VARIETIES:

Chilean (Common) Smooth Peruvian
Hairy Peruvian

Orders Shipped Same Day Received

It will be to your interest to ask for our prices and samples before placing your order elsewhere

E. F. SANGUINETTI - Yuma, Arizona
"THE HOME OF THE HAIRY PERUVIAN"

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency." Tells You Why.
Hauser Packing Company
Los Angeles, Cal.

When writing advertisers, mention The Cultivator.

Russell "Quality" Tractors

RUSSELL "BIG BOSS" TRACTOR 20-40

Russell Tractors are Built in Five Sizes:

10-20, 12-24, 15-30, 20-40, 30-60

Full Stock of Repairs for all sizes of Russell Tractors and Threshers on hand at San Jose warehouse

A. H. Averill Machinery Co.

San Jose California

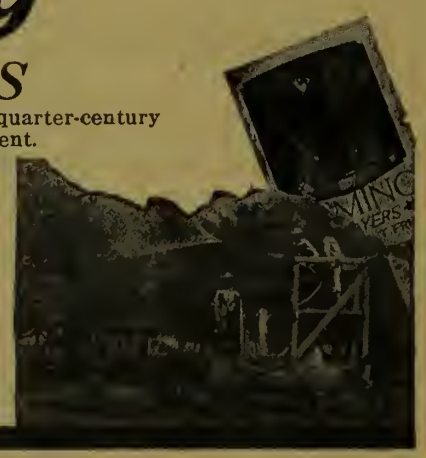
Southern California Agency
Davenport Implement Co.
110 North Los Angeles St., Los Angeles

Simplified Spraying

SPRAY-TIME IS BRIEF. Speed spells profit. Don't wear your fingers to the bone and your temper to a frazzle with a rattle-trap, out-of-date spraying rig. Don't gamble on insecure packing, slipping belts, clogged nozzles and leaky connections. SIMPLIFY and save time by using

Deming SPRAYERS

the trouble-free outfits perfected by a quarter-century of intensive study and practical experiment.



Take your first step toward simplified spraying TODAY — send for the new Deming Catalog, 40 pages of spraying helps.

Germain Seed & Plant Co.

560 South Main Street
LOS ANGELES, CAL.

"FOR THE LAND'S SAKE" Use

A. C. W. FERTILIZERS

By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.

Agricultural Chemical Works

518 I. N. Van Nuys Building Los Angeles, Cal.
Telephones: Pico 3619; Home 66022

"IF IT'S ENGINEERING WE DO IT"

GET MAXIMUM INCOME from your Land by having your IRRIGATION, DRAINAGE and BUILDING PROBLEMS properly attended to by the ENGINEERING SERVICE COMPANY

We Render "Service that insures permanence" and will
Save You Money by insuring you the Lowest Ultimate Cost

In fact, we do anything in the engineering line pertaining to the development, operation or maintenance of properties. Paul R. Cowles, Manager
Phone 60463 SUITE 1316 WASHINGTON BLDG., LOS ANGELES, CALIF.
Your requirements, whether large or small, will receive our careful attention

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Ripon Holsteins to New Herds

In the combination sale of Holsteins held at Ripon, October 30, consisting of consignments from the herds of C. A. Miller, Ripon, Wm. T. Miller, Ripon, H. A. De Wolf, Ripon, and Gotshall and Magruder, Ripon, 92 head, including an unusually large number of young things, were cashed for $22,150—a general average of $240. Thirty-three head of cows averaged $337, 41 head of heifers ranging in age from four months to 30 months averaged $225 and 17 head of bull calves, only a few of which were over six months old, averaged near $100.

The sale attracted one of the largest crowds of the year and a feature of the auction was the number of dairymen making their initial purchases of pure breds.

Sarcastic Dora of Millbrae, a nine year old cow, with a record of 24.11 lbs. fat, topped the sale at $600. She was purchased by W. J. & B. A. Edwards, Ripon, who were among the heaviest buyers. W. H. Bryan, Patterson, selected 11 head. Burr Farm, Los Angeles, took 10 head of the choicer lots.

The sale was managed by C. L. Hughes of the California Breeders' Sales and Pedigree Company. Col. Ben A. Rhoades of Los Angeles served as auctioneer and Col. George W. Bell, of Tulare, worked the ring. A complete list of sales follows:

Gotshall & Magruder

1. Fidessa Butter Belle, April, 1912, 28.14 lbs.; J. E. Headley, Ripon, $320.
2. Moorland Sadie De Kol Haskins; W. H. Bryan, Patterson, $275.
3. Lockhaven Aaggie Segis, Dec., 1912, 21.62 lbs.; R. Stevens, Stockton, $410.
4. De Kol Princess Belle 2d, Sept., 1913, 23.62 lbs.; J. E. Headley, $335.
5. Karlray It Segis, Oct., 1918; C. A. Miller, Ripon, $360.
6. Karlray Segis Paul, June, 1919; W. H. Bryan, $130.
7. Karlray Bonnie Walker, Aug., 1919; V. J. Reeve, Bethany, $100.
8. Moorland Roma Aaggie, May, 1915, 13.45 lbs.; J. C. Ramsey, Escalon, $545.
9. Moorland Roma Colantha, Sept., 1917; Edmund Henry, Ripon, $275.
10. Moorland Roma, Sept., 1918; H. P. Martin, Ripon, $250.
11. Moorland Aaggie, Sept., 1918; H. P. Martin, $250.
12. Moorland Colantha Roma, Sept., 1919; V. J. Reeve, $60.
13. Karlray Mead Sadie Vale, bull, July, 1919; Louis Beck, Modesto, $125.
14. Karlray Gelsche Walker, bull, July, 1919; Les McCracken, Ripon, $85.
15. Karlray Valdessa Korndyke, bull, Aug., 1919; Edmund Henry, $75.
16. Unnamed bull, March, 1919; Leslie F. Miller, $100.
17. Unnamed; J. C. Ramsey, $275.
18. Della Fobes of Linwood, July, 1916; Hard Bros., Ripon, $220.
19. Mary Teposa Johanna, June, 1912; Hard Bros., Ripon, $225.
20. Pauline Canary Model, April, 1916; Geo. E. Lewis, Ellsworth, $310.
21. Karlray Segis Woodcrest, Feb., 1918; W. J. Bryan, $275.
22. Karlray Emily Pontiac, July, 1919; R. L. Holmes, Modesto, $155.
23. Beryl Laura Valdessa, May, 1919; Geo. E. Lewis, $145.
24. Serena Pontiac Valdessa, March, 1919; W. H. Bryan, $210.
25. Karlray Alcartra Walker, March, 1919; J. M. Campbell, Escalon, $250.
26. Bonnie Vista Belle, Dec., 1916; J. W. Proctor, Hughson, $245.
27. Karlray Fobes Nudine, April, 1919; W. H. Bryan, $200.
28. Karlray Zoa Walker, Aug., 1919; J. M. Campbell, $130.
29. West View Model Aaggie, April, 1916; J. C. Ramsey, $270.
30. Karlray Virginia Walker, June, 1919; J. M. Campbell, $275.

C. A. Miller Consignment

31. Nudine De Kol of Atlanta, bull, June, 1919; Geo. Nicemonger, Ripon, $35.
32. Nudine Fay Spotfoot, bull, July, 1919; Kepper Bros., Manteca, $55.
33. Squaw Queen Mercedes Ormsby, July, 1918; Burr Farm, Los Angeles, $200.
34. King Segis Alcartra De Kol, bull, Aug., 1919; Homer Hewlns, Salida, $115.
35. Nudine Aaggie Butter Girl, July, 1919; Leslie F. Miller, $180.
36. Aaggie Nudine Butter Girl, July, 1919; Leslie F. Miller, $180.
37. Mechtilde Aralia Walker, Feb., 1916, 10.91 lbs.; W. J. & B. A. Edwards, Ripon, $525.
38. Squaw Queen De Kol 2d, June, 1913; W. J. & B. A. Edwards, $400.
39. Unnamed; Albert Duc, Ellsworth, $90.
40. Manteca Queen Lyons Walker, Nov., 1916; W. J. Bryan, $250.
41. Segis Johanna Karlray, Jan., 1917; Burr Farm, $315.
41. Segis Johanna Karlray, Jan., 1917; Burr Farm, $315.
42. Blanche Hengerveld De Kol Clyde, June, 1917; F. L. Morris, Woodland, $300.
43. Aralia Goldstone Pontiac, April, 1917; M. J. & B. A. Edwards, $420.
44. Princess Fay Spotfoot, Oct., 1916; J. C. Ramsey, $335.
45. Nabo of Linwood, Jan., 1912, 22.03 lbs.; W. J. & B. A. Edwards, $400.
46. Copo De Oro Fay Spotfoot 2d, Sept., 1912, 15.27 lbs.; H. E. Spires, Caruthers, $260.
47. Korndyke Pontiac McKean, bull, March, 1919; M. H. Memborn, Manteca, $50.
48. Marguerite Lad Netherland Pontiac, bull, March, 1919; A. C. Van der Akker, Ripon, $110.
49. Nudine Aralia Walker, bull, Feb., 1919; M. N. Foster, Ripon, $100.
50. Pennant Korndyke Nudine, Feb., 1919; E. H. Fink, Acampo, $210.
51. Lassie Delmar Nudine De Kol, April, 1919; W. H. Bryan, $155.
52. Aaggie Hengerveld Nudine, Feb., 1919; W. H. Bryan, $205.
53. Nudine Korndyke Shadeland, Jan., 1919; W. H. Bryan, $155.
54. Lleuwkje Korndyke Shadeland, March, 1915; Leslie F. Miller, $125.
56. Lady Aaggie of Ceres, April, 1908; J. W. Proctor, Hughson, $215.
57. Sarcastic Dora of Millbrae, Dec., 1910, 24.11 lbs.; W. J. & B. A. Edwards, $600.
58. Vecina of Linwood, Jan., 1912, 18.39 lbs.; W. J. & B. A. Edwards, $500.
59. Pennant Dodo Korndyke, Feb., 1914; C. S. Hedger, Ripon, $305.
60. Shadeland Korndyke Gerben, Jan., 1918; H. E. Spires, $195.
61. Pennant Dodo Korndyke Gerhen, April, 1918; Leslie F. Miller, $315.
62. Lorena Fay Spotfoot, Aug., 1918; W. H. Bryan, $165.
63. Squaw Queen Korndyke De Kol, March, 1918; W. A. Mondon, Ripon, $155.
64. Lassie Delmar Korndyke De Kol, May, 1918; S. A. Hamilton, Snelling, $230.
65. Lorena Korndyke Aaggie, bull, Aug., 1918; E. E. Salmon, Manteca, $95.
66. Daisy McKean, Aug., 1913, 15.39 lbs.; W. J. & B. A. Edwards, $300.
67. Marguerite Lad Netherland Pride 3d, June, 1913, 13.50 lbs.; M. N. Foster, Ripon, $380.
68. Aaggie Pietertje Vina Hengerveld, Feb., 1917; W. N. Foster, Ripon, $135.
69. Lassie Pauline Hengerveld De Kol, June, 1917; M. J. & B. A. Edwards, $300.
70. Lady Pontiac Juliana, Aug., 1916; W. H. Bryan, $280.
71. Albina Pontiac Juliana Burke, bull, Dec., 1918; Geo. Nicemonger, $50.
72. King Pontiac Ormsby Segis Jose, bull, Jan., 1918; M. N. Foster, $165.
73. Captain Johanna Plebe Holland, bull, May, 1918; V. J. Reeve, $110.

Wm T. Miller Consignment

74. A. W. P. Princess Pietje, Aug., 1918; R. Stevens, Stockton, $265.

H. A. DeWolf Consignment

75. Lady Helena Hengerveld, July, 1913, 19.36 lbs.; Burr Farm, $330.
76. Lady Alcartra Walker, April, 1914, 12.23 lbs.; E. Peterposten, Hughson, $270.
77. Lorena Molly Lyons, July, 1919; Leslie F. Miller, $185.
78. Rosebud of Sunnyside, June, 1915; McCumber & Son, Modesto, $325.
79. El Vona Hengerveld, June, 1915, 17.58 lbs.; W. J. & B. A. Edwards, $500.
80. Happy Thought Orizaba, Aug., 1910, 18.68 lbs.; Burr Farm, $310.
81. Button Hole Bess 3d, Sept., 1911; E. R. Goodwin, Ripon, $325.
82. Highland Susan, Jan., 1912, 20.61 lbs.; Burr Farm, $335.
84. Bettina of Sunnyside; McComber & Son, $290.
85. Pennant Molly Lyons, March, 1913; S. A. Hamilton, $350.
86. Loretta Princess 2d, Sept., 1913; Burr Farm, $340.
87. Pieterje Ignaro, Dec., 1916; McComber & Son, $285.
88. Sir Veemans Happy Thought, May, 1918; Burr Farm, $325.
89. Buddle's Promise, Nov., 1918; Burr Farm, $210.
90. Bonnie White, July, 1918; Burr Farm, $300.
91. Lady Alcartra Veeman, Dec., 1918; R. F. Guerin, Visalia, $270.
92. Veeman's Dark Spot, bull, Dec., 1918; Peter Dedini, Ripon, $100.
93. Highland Prince Veeman, bull, July, 1918; Hard Bros., $135.
94. Sir El Vona, bull, Aug., 1918; Carl A. Swanson, Turlock, $155.

Laurameka, a California Holstein cow, has now become eligible to the select circle of 1000 pound butter fat cows of which there are only three in California and but 35 in the whole world, with a record of 29.899 pounds of milk and 1,061.27 pounds of butter fat produced in one year, or converted to butter, a record of 1,326.59 pounds, according to recently reported tests of the Holstein-Freisian Association. The official portions of the test were supervised by representatives of the University of California.

Laurameka, owned by M. H. Tichenor of Palo Alto, was bred by the Vina Ranch of Stanford University, her record being made at the Palo Alto Stock Farm. She entered the lactation period at the age of seven years and 21 days. Her best 30 day record is 112.114 pounds fat and 3,145.1 pounds milk. Her best seven day is 27.130 pounds fat and 768.5 pounds milk.

DUROC SALE EVENTS

Three big days of Duroc-Jersey bred sow sales are to mark the opening of the year 1920. These public sales rings are to embrace high class stock from three notably fine breeding herds as follows: January 28, Diamond Bar Ranch, Spadra, sale to be held at the ranch; January 29, Winsor Ranch, Bonita, sale to be held in Los Angeles; January 30, Ireland Ranch, Owensmouth, sale to be held at the ranch.

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Abortion

I have a mare five years old. She lost a colt about six months ago after she had been carrying it about that length of time. I think it was caused by her being kicked by another horse in the corral. Since that time she has been very poor in spite of the fact that she has a very good appetite and gets plenty to eat. She is very slow in her movements and it seems almost impossible for her to travel faster than a walk.—Subscriber, Orland.

The abortion was probably the cause of the loss of health and is causing it to continue. Something may be wrong with the genital organs. If possible have a veterinarian examine her. Part of the afterbirth may have been retained and will have to be removed, or some of the parts may be displaced. Feed her laxative feed. Read the article on "Skin Diseases" in the Cultivator of November 1 on page 607. Also give her the tonic prescribed for that case.

Indigestion

Would like to know what to do for a cow that is bloated on the left side and when thumped it sounds like a drum. Have given her salts and oil but can not see any change. She eats and drinks the same as other cows. She was giving about five gallons of milk but gives very little now. Her droppings are like ground alfalfa. She does not chew her cud and seems to grind her teeth occasionally. — Subscriber, Lodi.

That is one of those stubborn cases of indigestion that needs prompt treatment and that followed up until relief is obtained. You should have called the nearest veterinarian at once. A reply through the Cultivator will probably be too late.

If you were going to treat her with salts you should mix two parts of epsom salts with one part of common salt and give one pound of the mixture about every six hours until the cow was relieved. Or if you used oil you should combine turpentine and aloin with it, using three ounces of turpentine and two drams of aloin to each quart of raw linseed oil and of that mixture give a pint every six hours until relieved. A teaspoon of powdered nux vomica added to each dose of either of the above mixtures would help it to act a little quicker and better. Do not use salts and oil in the same case. Either use one or the other and stick to it. By giving small doses of each you will get no action from either.

Sometimes it develops that such cases are brought on by a piece of wire or something of that nature being taken with the food, that has penetrated the walls of the stomach. In that case of course medicine is useless, but it is often caused by overeating and the third stomach refusing to act. It takes active work to start such cases. If you ever have another case of this kind you will know what to do.

In nearly every state the production of the late commercial crop of potatoes falls below that of last year. Pennsylvania is a prominent exception, with a gain of 1,030 carloads over last year, and yet that state produces, this year, less than 6 per cent of the total of all states. Maine has a prospect of 24,468 carloads, Minnesota 24,000, Wisconsin 20,800, Michigan 10,275, Colorado 10,030, New York 9,370, Pennsylvania 6,980, and Idaho 6,640 carloads.

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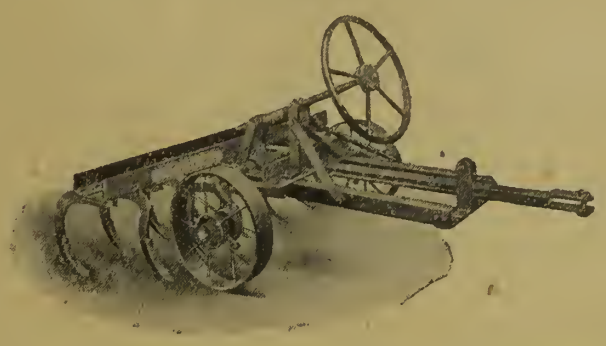

Why scratch the ground when with but little additional cost you can cultivate to a depth that will result in increased crops? Recent reports on this method of cultivation have shown that this can be done.

Our Extra Heavy Orchard Cultivator No. 4 is strongly built of the best high grade steel obtainable and will cultivate to a depth of eight inches, aerating the soil and breaking up any plow sole which may have formed, allowing the water to penetrate the ground instead of running off at the end of the furrow.

This Cultivator is built for use behind the medium-sized tractors; we also make this same cultivator in a lighter weight for the smaller tractors.

Write for booklet on Deep Tillage vs. Old Methods and see what has been accomplished by progressive, up-to-date ranchers who are using our implements.

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Spadra, Los Angeles County, Calif.

DUROC-JERSEY SWINE

Leading Breeders of the Big Type

The Diamond Bar show herd has been the sensational show herd in Pacific Coast Duroc circles for the year 1919—20 ribbons at Sacramento, and 19 ribbons at Los Angeles. A fine "scoop" at Riverside and San Francisco yet to hear from.

Ace of Pathfinders Mammoth Sensation 2d
California Great Wonder

The above are the three grand champion boars in service at Diamond Bar Ranch, a record unequalled in the United States. At the Los Angeles Livestock Show Diamond Bar Durocs won five championships, five firsts, two seconds, four thirds, two fourths, and silver cup for best display in Duroc section.

325 pigs to select from for the trade, sired by California Great Wonder and a son of Orion Cherry King 5th; also bred sows mated to leading boars of the breed. Write us or visit the ranch.

Walter T. Gatton, Manager Swine Department

Jas. J. Jeffries Holsteins

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35 daughters of this great sire in herd

Showing eleven head of the get of King Segis Pontiac Jannek at Los Angeles Livestock Show we won the following prizes: 1st and 3rd get of sire; 1st young herd; 1st calf herd; 1st junior bull calf; 1st and 4th junior heifer calf; 2nd senior bull calf; 2nd junior yearling heifer; 3rd, 4th and 5th junior heifer calf. Young bulls sired by King Segis Pontiac Jannek for sale at right prices.

Jas. J. Jeffries, Owner, Burbank
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3 Sensations 3

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swine are not bred in California than those found on our farm. Our tops sold for breeding all others go to the butcher. See that your next Duroc comes from the Thompson Herd.

Allen Thompson Tulare, Calif.

DON'T HANDICAP YOURSELF

by the purchase of an inferior breeding animal. We have some excellent young Duroc-Jersey boars that we will sell reasonable and will do you a lot of good.

RANCHO DEL SUR, Donald H. Graham, Lancaster, Cal.

Swine Exhibit at Los Angeles Show

By B. S. Bennett

Generally speaking, the show of swine was the outstanding feature of the Los Angeles Livestock Show. At least two breeds, the Duroc-Jerseys and the Hampshires, staged shows that were conceded to be the superior of any held in the state. The Poland China classes were light. Throughout the show the fact was made plain that Southern California swine breeders have declared for the "big type," and they had entries to prove that when it comes to size they have the equal of any. Many of the champions and class winners were declared good enough to be at home in the best shows.

The judging was done by recognized authorities and was instructive as well as satisfactory.

The Duroc-Jerseys

That the exhibit of Duroc-Jerseys was the largest and highest class of any show ever held on the Pacific Coast was the opinion of both the exhibitors and those at the ring side interested in this breed of swine. This breed of swine has made rapid progress the past year, a number of good herds having been established and foundation animals secured from some of the best eastern herds.

The Pathfinder bred boar, Ace of Pathfinders, was first senior yearling and later made senior and grand champion. Masculine in appearance, he stands on extremely large bone, has a high arched back and carries a deep, well set ham.

The Elliott-Brant entry, Mary Rose King, was first junior yearling boar and reserve senior champion. The senior boar pig class brought out the two outstanding animals, Great Orion Sensation Jr. from the Falfadale herd and Big Model shown by Conejo Ranch. These two young boars would do credit to the breed at any of our large shows as both are outstanding individuals. The Falfadale entry was awarded first place and later made reserve grand champion. The aged sow class brought out the undefeated Model Defender Lady exhibited by Winsor Ranch, that was easily first in class, senior and grand champion. This sow has now been shown for three years and as yet remains undefeated, and in the opinion of the judge is one of the really great sows of the breed.

One of the hottest contests of the show was made by the 16 junior yearling sows, and a number of high class animals were unable to get in the money. First in this class went to the Grand Model sow shown by Falfadale Farm, with the Conejo Ranch entry, Wonder's Belle a close second. Diamond Bar Ranch was easily first in the senior sow pig class with Pathfinder's Very Best, a gilt that would be a strong contender in any show, and was later made reserve grand champion. E. J. Barker of Thornton, Indiana, judged to the satisfaction of both the exhibitors and ring side. The awards follow:

Exhibitors: California George Junior Republic, Chino; Conejo Ranch, Newbury Park; Mrs. F. M. Connor, Pasadena; Michael Creamer, Los Angeles; Diamond Bar Ranch, Spadra; Elliott-Brant Rancho, Owensmouth; Falfadale Farm, Perris; Roy E. Fisher, Lincoln, Nebraska; Donald H. Graham, Lancaster; Hewitt Bros., Van Nuys; L. Leest, Van Nuys; E. F. Meyers, Lankershim; W. Moore, San Diego; E. Avery Newton, Los Angeles; C. T. Thompson, Bishop; J. E. Thorp, Lockeford; University of California, Davis; Winsor Ranch, Bonita.

Aged boar—1, Fisher on Critic Perfection; 2, Diamond Bar on California Great Wonder; 3, Winsor on Winsor's Giant Orion; 4, Creamer on Ireland's Orion Defender; 5, Thompson on Thompson's Pilot Defender. Senior yearling—1, Diamond Bar on Ace of Pathfinders; 2, Winsor on Model Defender 1st; 3, Winsor on Golden Defender; 4, Fisher on Moderows Top; 5, Conejo on Modern Lad. Junior yearling—1, Elliott-Brant on May Rose King; 2, Roy E. Fisher on Cherry Orion King; 3, Conejo on Giant Wonder; 4, Thorp on Freddy You'll Do; 5, Meyers on Model Wonder. Senior pig — 1, Falfadale on Great Orion Sensation Junior; 2, Conejo on Big Model; 3, Hewitt Bros. on Top Sensation 1st; 4, Winsor on Top Sensation 3d; 5, Diamond Bar on Great Sensation 2nd. Junoir pig—1, Conejo on Giant's Type; 2, Creamer on Ireland's Mike; 3, Meyer on Model Wonder Junior; 4, Newton on Arenal Critic; 5, Conejo on Wonder's Choice.

Aged sow—1, Winsor on Model Defender Lady; 2, Conejo on Grand Lady 66th; 3, Diamond Bar on Critic's Rose; 4, Falfadale on Bonnie Jean Again; 5, Moore on Defender's Ohio Maid. Senior yearling—1, Diamond Bar on Miss Orion Sensation; 2, Conejo on Great Wonder's Lady 17th; 3, Falfadale on Iowa Belle; 4, Fisher; 5, Thompson on Maud Queen. Junior yearling—1, Falfadale; 2, Conejo on Wonder's Belle; 3, Diamond Bar on Ohio's Sensation Lady; 4, Diamond Bar on Pathfinder's Orioness; 5, Thorp on Miss You'll Do. Senior pig—1, Diamond Bar on Pathfinder's Very Best; 2, Falfadale on Orion's Descent; 3, Thorp on Reggie's Twilight of M.; 4, Winsor on High Sensation Lady; 5, Winsor on Golden Sensation Lady. Junior pig—1, Thorp on Reggie's You'll Do; 2, Conejo on Giant Belle; 3, Conejo on Giant Belle 1st; 4, Falfadale; 5, Leest on Anceda Model Orion.

Senior champion boar, Ace of Pathfinders; reserve, May Rose King. Junior champion boar, Great Orion Sensation Junior; reserve, Giant's Type. Senior champion sow, Model Defender Lady; reserve, Miss Orion Sensation. Junior champion sow, Pathfinder's Very Best; reserve, Reggie's You'll Do. Grand champion boar, Ace of Pathfinders; reserve, Great Orion Sensation Junior. Grand champion sow, Model Defender Lady; reserve, Pathfinder's Very Best.

Aged herd—1, Diamond Bar; 2, Winsor; 3, Conejo; 4, Fisher. Young herd—1, Conejo; 2, Diamond Bar; 3, Conejo; 4, Winsor. Herd bred by exhibitor — 1, Thorp; 2, Winsor; 3, Graham; 4, Thorp. Get of sire—1, Diamond Bar; 2, Conejo; 3, Diamond Bar. Produce of dam—1, Conejo; 2, Conejo; 3, Thorp. Barrow—1, U. of C.; 2, Meyers; 3, Thompson. Pen three barrows—1, Meyers; 2, Thompson; 3, Thompson.

Poland Chinas

The Poland China show this year in no way came up to that of previous years. The lack of entries is to be regretted in view of the rapid progress this breed has made in the state the past few years. M. Bassett and Son of Hanford, who can always be counted on, had one or more entries in nearly all the classes, while the

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other entries were, in most cases, limited to young animals. Mrs. Viola L. Renwick of Santa Barbara won grand champion boar with El Profito. All the other championships went to the Bassett herd. C. R. Doty of Charleston, Illinois, gave entire satisfaction as judge.

The awards follow:

Exhibitors: Baldwin Park Pig Raisers' Association, Baldwin Park; M. & A. L. Bassett, Hanford; J. L. Hall, Lomita; M. L. Montgomery, Simi; E. Avery Newton, Los Angeles; Viola L. Renwick, Santa Barbara; University of California, Davis.

Senior yearling boar—1, Renwick on El Profito; 2, Bassett on King's Timm. Junior yearling—1, Bassett on Model Fel-

Champions at Los Angeles

Castleview Princess Belle, grand champion Berkshire sow, shown by Castleview Ranch, Santa Rosa.

Big Princess Model, grand champion Poland China sow, owned by M. Bassett, Hanford.

Model Defender Lady, grand champion Duroc-Jersey sow, owned by Winsor Ranch, Bonita.

Harvey's Choice, grand champion Hampshire boar, owned by Fairbanks Ranch, Redlands.

Ace of Pathfinders, grand champion Duroc-Jersey boar, owned by Diamond Bar Ranch, Spadra.

Grape Wild Emblem, grand champion Berkshire boar, owned by A. B. Humphrey, Escalon.

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E. M. DUNLAP, Hotel Land. Sacramento, Cal.

low Junior; 2, Bassett on Model Dreadnaught. Senior pig—1, Bassett on Golden Model; 2, Newton on Arenal Lass. Junior pig—1, Bassett on Big Smooth Gerstdale; 2, Bassett on Mammoth Gerstdale; 3, Viola L. Renwick, Price's Longfellow; 4, Viola L. Renwick on Aeroplane Price; 5, Hall on Hall's Meddler.

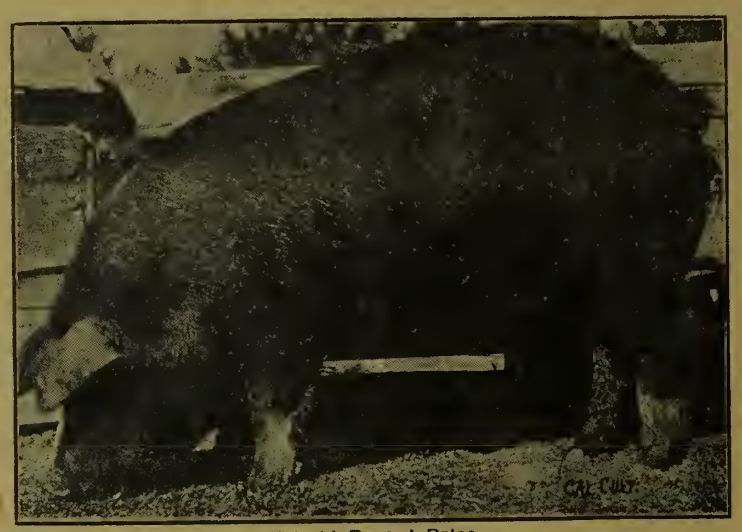
Aged sow—1, Bassett on Hopeful; 2, U. of C. on California's Pride 2nd; 3, Renwick on Big Helen. Senior yearling—1, Bassett on Jumbo Doris; 2, Bassett on Big Model Maid. Junior yearling—1, Bassett on Bobdale Edith. Senior pig—1, Bassett on Big Princess Model; 2, Bassett on Pig Princess; 3, Bassett on Big Model Daisy; 4, Newton on Arenal Blossom; 5, Newton on Arenal Girl. Junior pig—1, Bassett on Gerstdale's Best; 2, Bassett on Gerstdale's Queen; 3, Renwick on Big Bone Price; 4, Renwick on Miss El Profito.

Senior champion boar—El Profito; reserve, Model Fellow Junior. Junior champion boar—Big Smooth Gerstdale. Senior champion sow—Hopeful; reserve, Bobdale Edith. Junior champion sow—Big Princess Model; reserve, Gerstdale's Best. Grand champion boar— El Profito; reserve, Big Smooth Gerstdale. Grand champion sow—Big Princess Model; reserve, Hopeful.

Boar and three sows over one year—Bassett. Boar and three sows under one year—1, Bassett; 2, Newton. Boar and three sows bred by exhibitor—1, Bassett. Four, get of one sire—1, Bassett; 2, Newton. Four, produce of one dam—1, Bassett; 2, Newton. Barrow — 1, U. of C. 2, Bassett; 3, Bassett. Pen three barrows—1, Bassett.

Berkshires

Seven breeders exhibited Berkshires, and while numerically larger



World Record Price

Big Kate 4th, by Rossmead Bob, sold by Fred D. Ross in Kings County Poland China Breeders' Association Sale in Hanford, October 11, for $3,150 to M. Bassett.

shows have been held it was the universal opinion of the breeders that a higher class of animals had never been exhibited on the coast. In commenting on the show Judge Barker said that a number of the animals shown would have won at five of the larger eastern state fairs including the National Swine Show. Probably the outstanding animal of the show was Castleview Premier Belle, shown by J. Francis O'Connor, Santa Rosa, that was first senior sow pig, junior champion and later made grand champion. The judge in awarding her the grand championship stated that she was an outstanding animal and was by far the best he had seen this year. However the A. B. Humphrey entry, the junior yearling sow Emblem's Escalon Belle, was a strong competitor for the highest honors and was made reserve grand champion. A. B. Humphrey also won grand champion boar on Grape Wild Emblem and reserve grand champion on the senior boar pig, Escalon Type, a young boar of remarkable type and individuality.

F. L. Hall, Perris, won first senior yearling boar on Rose Crest Rival and made a very creditable showing in a number of other classes. The Italian Vineyards, making their first show, won reserve senior champion boar and a number of other prizes.

The O'Connor entry, Castleview Rival Duchess, was first junior sow pig and reserve junior champion. The Western Berkshire Congress offered special prizes for the best barrow farrowed after March 1, 1919. Humphrey was first; O'Connor, second; University of California, third; Humphrey, fourth and fifth. E. J. Barker of Thorntown, Indiana, did an artistic job at rating the various classes and his remarks as to why he placed certain animals as he did were appreciated by those watching the judging.

The awards were as follows:

Berkshires

Exhibitors: Mrs. F. M. Connor, Pasadena; F. L. Hall, Perris; A. B. Humphrey, Escalon; Italian Vineyard Co., Guasti; J. Francis O'Connor, Santa Rosa; University of California, Davis; Mrs. A. B. Walters, Perris.

Aged boar—1, Humphrey on Grape Wild Emblem; 2, Humphrey on GWE Leader. Senior yearling—1, Hall on Rose Crest Rival 3d. Junior yearling—1, Italian Vineyard on Choice Goods 10th; 2, Hall on Rose Crest Rival 6th. Senior pig—1, Humphrey on Escalon Type; 2, O'Connor on Rival's Leader 2nd; 3, Humphrey on Escalon Type 2nd; 4, Hall on Rose Crest Rival Laurel 4th; 5, Hall on Rose Crest Rival 7th. Junior pig—1, Humphrey on Grape Wild May Star; 2, Humphrey on Grape Wild May Star 2nd; 3, O'Connor on Castle View Rival Duke; 4, Italian Vineyard on Lee's Natomas; 5, Connor on Bellmore the Chief.

Aged sow—1, O'Connor on Leader's Invincible 2nd; 2, Humphrey on Leader's Janet 2nd; 3, Humphrey on Leader's Artful Belle; 4, Italian Vineyard on Wilsonia Princess Laurel; 5, Hall on Rose Crest Favorite 2nd. Senior yearling—1, Humphrey on Royal Polly 2nd; 2, Humphrey on Escalon Queen 2nd; 3, Italian Vineyard on Twin Oaks Star 2nd. Junior yearling—1, Humphrey on Emblem's Escalon Belle; 2, Italian Vineyard on Duke's Natomas Princess; 3, Italian Vineyard on Ruth of Twin Oaks 2nd; 4, Humphrey on Escalon Artful Belle 6th; 5, Italian Vineyard on Baron Duke's Princess 11th. Senior pig—1, O'Connor on Castle View Premier Belle; 2, Walters on Doon's Pig; 3, O'Connor on Castle View Rival Duchess; 4, Humphrey on Grape Wild Rose 6th; 5, Humphrey on Grape Wild Rose 7th. Junior pig—1, O'Connor on Castle View Rival Duchess; 2, O'Connor on Bellmore Marvel; 3, O'Connor on Double's Duchess; 4, Humphrey on Grape Wild Rose 8th; 5, Humphrey on Escalon Lady 11th.

Senior champion boar, Grape Wild Emblem; reserve, Choice Goods 10th. Junior champion boar, Escalon Type; reserve, Grape Wild May Star 2nd. Senior champion sow, Emblem Escalon Belle; reserve, Leader's Invincible 2nd. Junior champion sow, Castle View Premier Belle; reserve, Castle View Rival Duchess. Grand champion boar, Grape Wild Emblem; reserve, Escalon Type. Grand champion sow, Castle View Princess Belle; reserve, Escalon Emblem Belle.

Aged herd — 1, Humphrey; 2, Italian Vineyard; 3, Humphrey; 4, Hall. Young herd — 1, O'Connor; 2, Humphrey; 3, Italian Vineyard; 4, Hall. Herd bred by exhibitor—1, Humphrey; 2, Humphrey; 3, O'Connor; 4, Hall. Get of sire — 1, Humphrey; 2, Humphrey; 3, Hall. Produce of dam—1, Humphrey; 2, Humphrey; 3, O'Connor. Barrow, any age—1, Humphrey; 2, O'Connor; 3, U. of C. Pen of three barrows, any age—1, Humphrey.

HAMPSHIRES AT LOS ANGELES

By T. J. Hitte

With seven excellent herds in competition, the Hampshire swine exhibition at the Los Angeles Livestock Show flung wide its doors to the visiting public on Tuesday, the second day of the show. C. R. Doty, Charleston, Illinois, placed the awards quite to the satisfaction of all concerned.

The event proved itself far superior in point of number and quality to any of its predecessors on the coast. One of the pleasing features of the show was the very excellent exhibit made by Roy E. Fisher, of Lincoln, Nebraska.

A few of the more salient features of the show might be summed up as follows: The grand champion boar, Harvey's Choice is to be considered the pacemaker in size, type and completeness of fitting for the show ring; Fisher's great sow Flora S., was the outstanding senior yearling of the show; the five junior yearling sows shown by the Conejo Ranch were literally in a class all their own—they swept aside all competition. It was a conceded point by prominent showmen that no such lineup of high class individuals had yet been met in any show ring from a single herd. Four of these were of one litter—the get of the noted boar, Young Senator; the

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If your steer when he goes to market weighs 300 lbs. more than the average, you get, at current prices, about $40 to $50 for this extra weight. If he has quality, the result of good breeding, you get an additional premium.

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Registered Shorthorns and Berkshires---Both Sexes

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3 BULLS | No. 1 born Mar. 11, 1918. Sire, our Noble Mayfair Hero. | 3 BULLS

No. 2 born Oct. 1, 1918. Sire, our Kathie's Eminent. | All from high record cows in Arden herd. | No. 3 born Dec. 20, 1918. Sire, same as No. 2.

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reserve grand champion sow Wavelet from the Gilbert herd, now raising eight fine pigs, was one of a trio of aged sows fit to feature any herd of tops; it was a case of father and son alike in the limelight when Lookout Cherokee, last year's grand champion, now at head of the Denker herd, surrendered grand championship honors to his son Harvey's Choice. A single entry by I. F. Stone won first place in junior sow pig class and junior championship; aside from having a string of ribbons in his own belt, F. A. Langdon looked on complacently as honors were bestowed right and left, many of them going to off-shoots from the old pioneer herd.

Following are the awards:

Hampshires

Exhibitors: L. A. Denker, Saugus; Roy E. Fisher, Lincoln, Nebraska; C. J. Gilbert, Lancaster; Gordon & Langdon, Perris; Fairbanks Ranch, Redlands; Conejo Ranch, Newbury Park; Geo. I. Lytle, Perris; I. F. Stone, Perris.

Aged boar—1, Fairbanks on Harvey's Choice; 2, Denker on Lookout Cherokee; 3, Conejo on Challenger; 4, Gilbert on Harvester Again; 5, Denker on Simple Simon. Senior yearling — 1, Conejo on Liberty. Junior yearling—1, Fisher; 2, Conejo on Conejo Prince; 3, Denker on Sasin; 4, Gilbert on Quality Allen 2d; 5, Gilbert on True Allen. Senior pig—1, Denker on Chong; 2, Gordon & Langdon on Honest Lad; 3, Fisher; 4, Fairbanks on Golden Lad. Junior pig—1, Denker on Director Junior Pride; 2, Gilbert on Chief Harvester; 3, Gordon & Langdon on Jimmie Boy; 4, Denker on Jiggs; 5, Denker on Little Son.

Aged sow—1, Gilbert on Wavelet; 2, Gilbert on Mary Pickford; 3, Fisher; 4, Gordon & Langdon on Fern; 5, Gilbert on Leading Wave 3d. Senior yearling—1, Fisher on Flora S; 2, Denker on Dearie; 3, Conejo on Choice Maid; 4, Denker on Banzareta Giri; 5, Gordon & Langdon on Patience. Junior yearling—1, Conejo on Florine 2d; 3, Conejo on Florine 3d; 3, Conejo on Florine 4th; 4, Conejo on Florine 5th; 5, Conejo on Good Finish 2d. Senior pig—1, Fisher; 2, Conejo on Daisy C.; 3, Denker on Rose Junko; 4, Conejo on Miss Tipton; 5, Rose Tipton. Junior pig—1, Liano Vista Ranch on Mother's Choice; 2, Denker on Amena; 3, Fairbanks on Francis B.; 4, Denker on Mandy Lou; 5, Gilbert on Mary Again.

Senior champion boar—Harvey's Choice; reserve, Liberty. Junior champion boar—Chong; reserve, Director Junior Pride. Senior champion sow—Florine 2nd; reserve, Wavelet. Junior champion sow—Mother's Choice; reserve, Fisher's sow. Grand champion boar—Harvey's Choice; reserve, Chong. Grand champion sow—Florine 2d; reserve, Mother's Choice.

Aged herd—1, Conejo; 2, Fisher; 3, Gilbert; 4, Fairbanks. Young herd—Denker; 2, Fisher; 3, Gilbert; 4, Gordon & Langdon. Herd bred by exhibitor—1, Gilbert; 2, Denker; 3, Gordon & Langdon; 4, Fairbanks. Get of sire—1, Conejo; 2, Fisher; 3, Gilbert. Produce of dam—1, Conejo; 2, Gilbert; 3, Denker. Barrow—1, Denker; 2, Fisher; 3, Conejo. Pen three barrows—1, Gordon & Langdon; 2, Denker.

SERIOUS FIRE LOSS

A great loss has been suffered by A. W. Morris & Sons, Woodland, because of the burning of the big barn and four silos which had been recently filled with sufficient feed to carry the great dairy herd until other feeds could be grown. The loss is far greater than the invoice could show because it will compel the sale of a great number of choicest cows from the dairy. In fact, we believe the date of December 18 and 19 has already been chosen at which more than 125 choice cows and heifers will be offered.

VOCATIONAL REHABILITATION

The Vocational Rehabilitation Law was amended by Congress on July 11. Under the law as it now stands the Federal Board for Vocational Education, the agency charged with its administration, is not a free lance, as apparently many would have it be, but must work within the limits of the law. It may be interesting to note some of the duties of the Board in its dealings with disabled soldiers. The Federal Board can: Provide training for men whose disabilities due to service prohibit their return to the old jobs. It can provide maintenance for such men while in training. It can provide allowances for families of men in training under Section 2 of the Act; provide free tuition for men whose disabilities do not constitute a vocational handicap but who desire training for improvement; certify disabled men who are otherwise eligible for civil service positions; provide equipment—as books, tools, etc., for men in training.

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will keep your pigs in condition by acting on the liver, kidneys and blood. Will keep the stomach sweet, expel worms, aid digestion and prevent white scours and thumps.

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HAMPSHIRES

20 Ribbons at Los Angeles Livestock Show

Seven herds competing, our Hampshires have to their credit the largest number of winnings in the 1919 show ring, viz: 20 ribbons as follows: 2nd on aged boar Lookout Cherokee; 5th on Simple Simon (same class); 3rd on junior yearling boar by Director; 1st on senior boar pig, Chong, by Director; 1st on Director Jr. Pride, by Director; 4th on Jiggs, by Maloy's Controller; 5th on Little Son, by Director Jr.—all three in junior pig class; 2nd and 4th on senior yearling sows; 3rd on senior sow pig; 2nd and 4th on junior sow pigs; junior champion boar, reserve junior champion boar; senior champion boar, and reserve grand champion boar; 2nd on boar and 3 sows under year; 2nd on 4 animals, either sex, any age, get of one boar; 1st barrow any age; 2nd on pen.

High class young stock for sale at all times.

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Bred sowe and gilts $50.00 and up—well grown and well marked and bred to my herd boar General Excellence. A chance to get a etart in thoroughbreds or new vigorous blood for an etablieheb herd.

Also have eome fine eow and boar pigs two to three months old at $20 each. An opportunity to get thoroughbred etock with a small investment.

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LOOKOUT CHEROKEE
Grand Champion at Liberty Fair

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A. E. Harvey, Manager **Redlands, Cal.**

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Some extra good fall boars for sale now. Cholera immune.

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That's my motto. The kind of Poland Chinas bred by me is what's keeping me ahead. SMOOTH KING, by Kansas King, a boar of quality, has recently been added to my herd. My kind are your kind. A few choice young boars and gilts for sale. Write,

Eugene Miner **Lodi, Cal.**

YOUNG HERD BOARS SIRED BY THE YANKEE JR.

a Poland China boar with no superiors and few equals. Get an outstanding herd boar bred right and of the right type. The demand for the blood of The Yankee, Jr. is strong—some will be disappointed by not placing their order early as a number are already sold. Write for prices and full particulars.

John M. Bernstein **Hanford, Cal.**

Come and See Them

Our Big Type Poland-Chinas are the real kind of hogs. If you can't come write for what you want. We have them if you want the prolific, quick growing, big type kind.

Poland China Ranch H. B. Peake Mgr. **San Bernardino, Calif.**

WHIZ-BANG----I Will Sell

He's a grandson of Caldwell's Big Bob, is big himself and will meet the requirements if you want them big. My fall pigs will be by him. Can't use him longer. Two litter mates sold recently, just about a year old. Priced reasonable. Write for more information.

J. H. Cook **Paradise, Calif.**

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Breeding is the Basis for Performance

By Geo. H. Dacy, U. S. O. A.

WHY do some lots of cattle top the market while others sell at low prices? Why are some consumers willing to pay 60 cents a pound for prime beefsteak while they would reject from their table inferior steak at half the price? Why is it that some feeders finish their cattle or other animals more rapidly and economically than their associates?

Usually because "blood will tell." That is, the animals of the better breeding always achieve the more creditable performances, be it in the show ring, at the fair, in the feed lot, on the range, or at the butcher's block. Purebred aristocracy is not nearly extensive enough in the United States and with a view of extending the kith and kin of the first families widely over the country, the United States department of agriculture is launching its drive for better live stock, which was inaugurated October 1.

Purebreds for Profits

Purebred livestock is not the results of foible and fancy of the rich, for the leading foundation families of the various breeds, for the most part, have been produced and developed by practical farmers who farmed for a living in either the Old or New World. For example, Hugh Watson, the founder of the Aberdeen Angus, was a tenant farmer; Charles and Robert Collings, who sponsored the Shorthorn breed, were English countrymen of medium finances, while the Tomkins and the Hovers, who were the fosterers of the Whiteface in Herefordshire, England, were merely working to produce beef animals of superior type which would fatten more quickly and cheaper than their predecessors. In a word, purebred live stock from hogs, cattle, sheep, horses and dairy cows to goats and poultry, have all been developed for specific purposes, which are intimately associated with the stock farmer's needs and requirements.

Uncle Sam's big drive for better live stock similarly is a campaign to provide for direct and urgent needs. Farmers with surplus feed should desire live stock of the best type which will most profitably and economically convert these grain and forage surpluses into meat, milk, wool, mohair, and eggs. Eliminating the scrub and mongrel animal, live stock of "no account" family or breeding is one of the greatest improvement steps which possibly could be undertaken by the live stock breeding and raising fraternity of this country. Uncle Sam is enthusiastically behind the project and it remains for farmers interested in stock raising throughout the country, not only to boost for better stock, but also to buy and use farm animals of approved type and breeding, in order that our present live stock population, heterogeneous, harum-scarum, and topsy-turvy as it is, may be replaced by superior animals of type and breeding best fitted to supply the market and most suitable to consume profitably the surplus crops of the American farmer.

Why Good Cattle Pay

Just to illustrate that it is about as easy to discount the benefits of good blood in live stock breeding as it is to try to dry up the ocean with a sponge, here are some figures concerning the butcher standards of a good and a medium steer. In the case of a good steer the loin cuts, which are high priced, constitute 16¾ per cent by weight, as compared with 15½ per cent in a medium steer. The rib cuts compose 9¾ per cent in the better class of steer and only 7¾, per cent in the medium animals. The round, which is a medium priced cut, constitutes 21 per cent in a good steer and 26½ per cent in a medium steer, while the chuck, a low priced cut, composes 24 per cent of the good steer, and 27¾ per cent of the medium steer. The miscellaneous cuts in a good steer aggregate 13 per cent and only 11 per cent in the medium steer. These figures indicate that the good steer carries a greater percentage of the high priced cuts and a lower percentage of the medium priced and cheap cuts than does the medium steer, although the animals may be fed similar rations. This divergence in meat makeup at market time must be attributed to breeding.

Two shipments of steers which recently arrived on one of the large central markets also are of interest in disclosing the breeding facts. One lot of good steers weighed, on an average, 1,186 pounds and sold at $15.30 a hundredweight, their dressing percentage averaging 61 per cent. These steers carried 6¾ per cent of inside fat while their cost per pound, dressed and ready for sale to the consumer, was 22½ cents. The medium lot of steers averaged in weight 963 pounds and sold at $15.30. These cattle dressed 54 per cent, carried four per cent of inside fat, and cost 22 cents a pound when dressed and ready for consumption. Subsequently the meat from the good steers sold for one cent a pound more than that from the medium steers, which resulted in an increased profit for the butcher of approximately half a cent a pound, despite the fact that the good steers cost originally twe cents a pound more than the medium steers. Furthermore, the inside fat was worth considerably more in the good steers than it was in their lower quality mates. The well bred lot of cattle sold for an average of $181.46 apiece, while the poorer steers brought only $128.08 an animal, a difference of $53.38 a head in favor of the better bred cattle.

Every Farmer's Opportunity

There is no possible reason why farmers and stockmen should waste their time and tie up and jeopardize their capital in the purchase and feeding of inferior stock. The supremacy of the better bred animals is practically infallible. They, other conditions being equal, will yield dependable profits which are as certain as the coming of day after a night of gloom. It does not take much capital for any farmer, be he the owner of few head of stock or possessor of extensive flocks and herds, to begin improvement work to better his live stock resources. All that is necessary is that he purchase and use pure bred sires in the grading up and betterment of the progeny.

HAMPSHIRE ORGANIZATION

The California Hampshire Swine met at Exposition Park, Los Angeles, on Thursday, October 23.

An important feature of this meeting was the taking of preliminary steps to incorporate. Thirty directors are to be named and a branch recording office established in Los Angeles for the all around convenience of Pacific Coast patrons. This office is to be in charge of Secretary C. J. Gilbert at 428 Bradbury Building.

A FINE BROOD

George A. Patten, of Tomales, Marin County, sends photos of a fine bunch of Berkshires, photos taken at five weeks, the shotes weighing 2[illegible] pounds each. The litter is the first of a one year old sow and makes a most attractive looking bunch. We doubt not Mr. Patten's Berks will be heard from in some late state fair.

RYE GOES DOWN

Crop prices from Washington indicate the price of all grains in California except rye are higher than those of last year, the drop being 21 cents a bushel. Corn, wheat, oats and barley average two and one-half cents a bushel over 1918 prices.

The U. S. Civil Service announces competitive examination for dairy manufacturing specialist and for animal husbandman to take place in the near futuro. The animal husbandman commands $1800 to $2000 annual salary while the manufacturing specialist calls for $1800 to $2700 annual salary. Apply for form 2118, Secretary United States Civil Service Commission Washington, D. C.

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holstein Cattle

November 25. Registered Holsteins, California Breeders Sales and Pedigree Company, Tulare.
November 10. Diablo Stock Farm, dispersal, San Francisco.

Duroc-Jersey Swine

November 11. W. D. Hollingshead & Son, Orland.

Poland China Swine

November 19. Fresno County Poland China Breeders' Association, Fresno.

E. D. Barry, Jr., of Todos Santos Ranch writes: "King Hengerveld Honriette, the senior four year old Holstein cow that I purchased from A. W. Morris and Sons at the last Guaranty Sale at Sacramento, has just completed her eight months after calving test. This cow came from Woodland, September 17 and only had 14 days here before starting this test. Her seven day record at time of freshening was 684 pounds milk and 32.24 pounds butter. The Cultivator of April 19, 1919, has a full page cut of King Hengerveld Honriette on the front cover."

The Fresno County Poland China Breeders Association announces a public sale to be held on the Fresno fair grounds, Wednesday, November 19. The sale will consist of bred sows and gilts, open gilts and boars. The first sale of the association was held last August and was in every way entirely successful. Walter C. Ficklin, secretary, states that it is their intention to make this sale a better offering than the first. The sale will be made up of animals of various ages and sex that every one interested in Poland Chinas may find what he wants.

The reserve grand champion Jersey cow and the reserve junior champion heifer calf at the Los Angeles Livestock Show has been sold by Grant A. Brown, of El Monte, to J. E. Thorp, Lockeford.

R. K. Walker, manager of Winsor Ranch, breeders of Duroc-Jersey swine, announces a public sale to be held in Los Angeles the last week in January. The sale will be made up of bred sows and gilts by such noted boars as Great Sensation, Great Orion Sensation, Orion Sensation, Great Model, Great Wonder I Am and Orion Fancy King. They will be bred to the herd boars now maintained on Winsor Ranch, including Great Sensation III and Winsor's Giant Orion. Mr. Walker states that Winsor's Giant Orion is not only the largest Duroc-Jersey boar on the coast, but his get are true Duroc-Jersey type, grow big and are in heavy demand. This sale will be one of a series planned by Southern California breeders.

During the Los Angeles Livestock Show the Hampshire swine breeders met and organized the California Hampshire Swine Breeders Association. F. V. Gordon, of Los Angeles, was elected president; Francis T. Underhill, Santa Barbara, vice president, and C. J. Gilbert, Los Angeles, secretary. The association will be incorporated in this state and all animals will be recorded with the local secretary, duplicates being sent to the home office of Hampshire Recording Association, Peoria, Illinois. It is thought this will facilitate the recording and transfer of animals sold by California breeders and will save considerable time.

Donald H. Graham, Lancaster, has recently sold a fall Duroc boar by Orion's King, Gano, junior champion at the 1918 Los Angeles Livestock Show, to Fulger and Purkis, Santa Maria.

Castleview Ranch, Santa Rosa, sold the prize winning Berkshire sow, Wilsonia Laurel Villa, bred to their senior herd boar, Mayfield Rookwood, to the Italian Vineyard Co., Guasti. They also sold to Ernest Wickenden, Sisquoc, the second prize senior boar pig at the Los Angeles Livestock Show.

The Duroc-Jersey breeders of Southern California held a meeting and banquet at the Los Angeles Athletic Club Tuesday evening, October 21, to which were invited visiting breeders and the agricultural press. There was a general discussion of Duroc-Jersey affairs including general breed promotion. It was decided that instead of offering special prizes at the fairs this money should be spent for publicity for the breed.

D. J. Bastanchury, of La Habra, entertained at dinner Wednesday evening, October 22, the visiting Berkshire breeders at the Los Angeles Show. Mr. Bastanchury, besides being an orange and lemon grower, is an enthusiastic Berkshire breeder and has recently added a number of good sows to his herd. After the dinner had been served, means and methods for promoting Berkshires in Southern Cali-

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Duroc-Jerseys---

The record of Mossdale Durocs at recent fairs is proof of their merit. Freddy You'll Do, our herd boar, sired the winning get of sire group at the above fairs.

We can furnish young things of either breed at prices that are attractive. Write us your wants.

See Mossdale Exhibits at Los Angeles and San Francisco

J. E. Thorp Mossdale Farm Lockeford, Calif.

When writing advertisers, mention The Cultivator.

Our Second Big, Successful Poland China Sale

Fresno, Wednesday, November, 19th, 1919

Here's the blood you can buy in this sale---the 9 greatest the breed contains either East or West

Big Bob Wonder, Giant Jones, Giant Bob, Orange Boy, Evolution, King's Big Bone Leader, Model Fellow, King's Big Bone, Giant Buster, Big Orphan, Hather's Big Bob, President; 50 bred sows and gilts, open gilts for spring litters and young service boars. Twenty breeders are consigning to this sale and every animal has been carefully selected with the view of making this, our second sale, one long to be remembered as to quality and breeding. Sale will be held on Fresno Fair Grounds and will start at 12 M. Lunch served at 11 A. M.

Geo. W. Bell, Tulare, will be the Auctioneer. Write for Catalog to

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Roy Wood, of Chandler, Arizona, received $7,252 net from the grain on a 32-acre farm.

fornia were discussed. A local association was formed as a branch of the Western Berkshire Congress, and it was decided to hold a public sale of bred sows some time early in the coming year. Geo. A. Stingle, El Monte, was elected secretary of the local association.

Leest & Mounier, Van Nuys, have bought from the Roy E. Fisher herd of Durocs, Lincoln, Nehraska, the fine young brood sow, Queen of the Path, by Pathfinder's Pride, for $300. She is hred to Sensation Wonder for January iitter.

C. T. Thompson, Bishop, reports the saie of six gilts and two young hoars, while at Los Angeies Livestock Show, for $1500. These were the get of iast year's grand champion Duroc boar, Thompson's Pilot Defender. Six gilts and one hoar went to Fugler & Purkis, Guadalupe; one boar and two weanlings to Clyde Allen Whittier.

Dr. E. Avery Newton, Los Angeles, (ranch at Laukershim), has purchased from the F. C. Fairhanks Ranch, Redlands, the young prize winning Hampshire boar, Golden Lad. This young hoar was sired hy the grand champion boar, Harvey's Choice, and out of a Goldmine sow.

J. C. Craig has a fine litter of Durocs at his Owensmouth Ranch out of his 16 months daughter of Great Wonder I Am, the largest hoar of the breed. These pigs are sired hy Pathfinder's Likeness, and are a fine prospect for 1920.

J. C. Campbeli at Earlimart owns a good herd of Hampshires with the young hoar Senator Pickford from the C. J. Gilbert herd at head of herd.

Frank Reed Sanders, of Phoenix, Arizona, while at the Los Angeles Livestock Show, closed out his foundation herd of Dutch Belted cattle to J. M. Heaton, Las Vegas, Nevada.

That the Diamond Bar Durocs, owned at the big ranch at Spadra, constitute an aggregation of show and hreeding animals somewhat out of the ordinary was amply demonstrated at the big Los Angeles swine show. The great senior yearling boar, Ace or Pathfinders, figured as first in class, senior champion and grand champion boar of the show. Other winnings brought the total up to 19 rihbons The herd will he seen at San Francisco the coming week.

The one outstanding feature of the Duroc show at Los Angeles was again to be noted in the walk-away with grand championship honors in the female section hy the old show and brood sow Model Defender Lady of the Winsor Ranch herd at Bonita. As matters stand today Model Defender Lady hids fair to eclipse all show records of the hreed. But her record as a brood sow is equally as hrilliant.

W. T. Hollingshead & Sons of Orland are going to hold a hoar and gilt sale of 30 head November 11. It is the first saie of its kind in Northern California among Duroc hreeders Breeders and heginners will find it an opportunity to attend this sale as this herd is one of the foremost herds in Northern Caiifornia and contains some of the most popular hlood lines of today.

One of the most important Shorthorn transactions of the year was closed last week when the Edinger-Johnston Company, Hood, purchased from the Caledonia Farms, West Sacramento, 30 head of choicely bred cows, nearly all of which had heifer calves at foot and were hred back to the famous bulls at the head of the Caledonia herd. The Edinger-Johnston Company were among the heaviest purchasers at the H. M. Eiberg sale at Woodland recently and it is their intention to estahlish one of the best herds of the Sacramento Valiey

V. F. Dolcini, proprietor of June Acres Farm, Davis, has just received a Duroc-Jersey boar that is the litter mate to the Iowa junior champion. This hoar is sired hy Mahaska Wonder, the hoar that is making such a good record in the Waltmeyer herd in Iowa.

F. W. Ellehy, Jersey breeder of Modesto, reports the sale of the yearling bull, Captain John Polo, son of King Polo of Bleakhouse, and Moravias Gussie, a high producing cow now on official test, to Prof. V. C. Bryant of the University of California to head the dairy herd which Prof Bryant is estahlishing on his ranch near Escalon; aiso the sale of Wildwood Critic, a four year old Elden Fern Lad bull, to Leedon & Carpenter who are estahlishing a dairy near Modesto.

A. E. Harvey, manager of the Fairbanks Ranch Hampshires at Rediands, is setting a high mark in Hampshire breeding operations. The great herd boar Harvey's Choice, winner of grand championship honors at the Los Angeles show, is a point in evidence. Mr. Harvey has a lineup of great brood sows at the ranch, such as Velvet, Pansey II, and Calla, not to mention many others. No less an authority than F. A. Langdon puts Velvet down as one of the leading brood and show sows of the breed. The young stock at Fairhank's Ranch carries the extreme of bone, stretch, and ail that goes to make Hampshire type and character.

Up in Bouquet Canyon, 18 miles north of Saugus, is the L. A. Denker Hampshire Ranch. Surrounded by green alfalfa fields here is one of the ideal breeding grounds for the production of high class pure hred swine That Mr. Denker is making the most of his opportunities is evidenced by the string of 20 ribbons captured at the recent hig show at Los Angeles where the Hampshires were one of the leading attractions. The noted sire Lookout Cherokee, second in class at Los Angeles, has his home here. The first prize senior hoar Chong by Director, dam Little Mesa, was bred and shown hy Denker, as was also the first prize Director Jr. Pride in junior pig class. Little Mesa was left at ranch with fine litter of Lookout Cherokees.

The Fresno County Poland China Breeders' Association will hold their second public sale on the grounds of the Fresno District Fair Association Wednesday, November 19. Fifty animals have been seiected from the herds of 20 breeders and will consist of bred sows, bred and open gilts and

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Thousands of dollar's worth of Tractor Plows, Pumps, Drills, etc., have been sold and many great bargains yet remain. TO CLOSE OUT the following we will make greater reductions than ever on some of the items mentioned. We could not make these prices but for the fact that these implements were bought at a discount on pre-war prices. Don't miss these bargains then complain of high prices.

COMBINATION FEED AND BRUSH CUTTER

Freeman No. 13—Cutter will cut hrush, prunings, fodder, etc., capacity 3 to 6 tons green fodder per hour. Buy one and put your citrus prunings back on the land. Regular Price $103.00.

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Extension lamp cords, 4 ft., 50c; 6 ft., 60c; 8 ft., 70c; 10 ft., 80c.
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SEND YOUR CHECK FOR ONLY $17.50

and we will send you a new No. 40, 10-inch walking plow (wood beam) or send only $18.50 and we will ship steel beam (South Bend plows).

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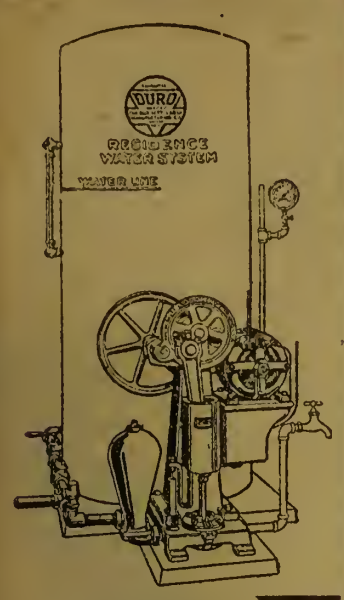

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Big orders a specialty; small orders appreciated.
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young service boars. Walter C. Ficklin, secretary, calls especial attention to the blood lines of this sale in which is included Big Bob Wonder, Giant Jones, Giant Bob, Orange Boy, Evolution, King's Big Bone Leader, Model Fellow, King's Big Bone, Giant Buster, Big Orphan, Hather's Big Bob and President.

In no previous sale has the blood of so many great sires been found and a large crowd of buyers is expected to be in attendance.

F. L. Hall, Perris, breeder of Berkshires, has sold his prize winning senior boar pig by Ames Rival 118th to J. Francis O'Connor, Santa Rosa.

H. F. Sheldon at Santa Barbara is the owner of some choicely bred Hampshire sows bought in the Underhill sale. These sows have succeeded in raising fine litters. It is the blood that will build up Hampshire interests wherever it may go. As weanlings, these pigs will furnish the opportunity to start with the best the breed affords at the very minimum of expense.

FARM BUREAU EGG LAYING CONTEST

In order to allow poultrymen from all over the state to make entries, the California Farm Bureau Egg Laying Contest will begin at Santa Cruz on November 15 instead of November 1 as previously announced.

New modern houses are being completed, and Max Kortum of Calistoga has been induced by Prof. J. E. Dougherty of the University of California to take charge of the contest. The contest is under the advisory supervision of the University of California.

Each entrant will send a pen of 12 pullets of one breed, two to be alternates, but all to be trapnested. This feature alone is worth the entrance fee of $2 per bird. Advertising the fact that he has good birds and knowing how much better his birds are than the average are both matters that the careful poultryman considers.

Detailed information can be obtained from S. L. Gibson, chairman in charge of the contest, Santa Cruz, or direct from the Farm Bureau office, 4 Cooper Street, Santa Cruz.

COURSE IN FRUIT CULTURE

A short course in fruit culture, to be held November 10 to 20 inclusive, will be given at the Chaffey junior college of agriculture at Ontario. The subjects to be covered are: Peach Twig-borer and Thrips; Cultivators and Cover Crops; Irrigation; Sprays and Spraying; Economics of Agriculture; Pruning (with pruning demonstrations); Insecticides and Fungicides; Fungous and Bacterial Diseases; Pollination and Thinning; Cooperation With the Canner; Improvement Through Bud Selection; Standardization of Fruits. Geo. P. Weldon, pomologist, will be in charge of the course and the principal speaker but others of note are on the program each day, among them Dr. Whitten of the state university, and A. D. Shamel of Riverside.

TEHAMA COUNTY FARM BUREAU

The meeting of the farm centers of the Tehama County farm bureau will be held at Antelope, November 11; Oak Park, 14; Richfield, 17; Corning, 19; Bend, 21; Los Molinos, 24; Proberta, 26.

The director's meeting will be held in Red Bluff, November 21, 1.30 P. M.

Professor J. W. Nelson, soil specialist will be in Red Bluff on November 13 to investigate the alfalfa situation in the Los Molinos section. Any parties desiring to get in touch with Professor Nelson will kindly communicate with the farm adviser at an early date.

HONEY FROM CALIFORNIA

This has been a decidedly off season with honey producers, but every ounce possible has been saved, and to date about 117 cars have been forwarded to Eastern markets. This is about 75 per cent of the output of the state. There has been a wide range in prices all the way from ten cents to as high as 30 cents per pound. With the sugar market in the condition it has been for the last few months honey will be higher before it will be lower.

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A weak heart in the wonderful engine called our body, makes a weak body, and so a spark from a Magneto can make or mar the efficiency of any tractor deriving its power from an internal combustion engine.

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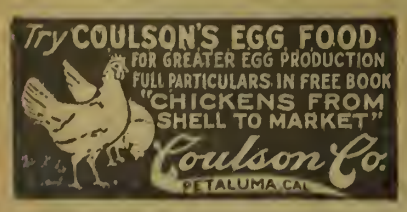

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Catalogue No. 3, free for asking.

KRESKY BROODER STOVE CO.
Petaluma Cal.

Making a Start With Chickens

By Jean A. Koethen

WE ARE sometimes told that one can start with chickens any time in California, and this is partly true, just as it is partly true that one can hatch any month in the year. A good many things are possible which are not expedient. Just as early spring is the best time for hatching, so is fall the best time for making a beginning with chickens. Houses can be built, chicks ordered or breeders purchased, and the incipient poultryman is ready to start off at a good brisk pace in January with his hatching and brooding operations. The following letter from a Calexico subscriber shows there are those who are beginning to count the cost and make preparations for getting into the chicken game another spring:

"Please tell me through your paper: How many chickens are enough for one man to take care of? How to make a chicken house to keep those chickens, supposing I have three acres of alfalfa and one and one-half acres yard? Where is the best location around Los Angeles for the poultry business? About how much money is needed to start with? Name and price of poultry book for California."

It is a pleasure to answer such businesslike questions as these, or at least to attempt to answer, for they are not all so easily answered. In times past a good many folks have gone headlong into poultry culture because they had been given to understand that the hens did all the work and all the poultryman had to do was to gather the eggs. Happily, that time is past, and we fully understand that success with poultry demands both capital and labor.

How Many Hens to a Man?

The number of chickens one man can care for depends to some extent on the man. On one ranch I visited recently I found a woman with the help of a boy caring for 1,200. On another three men were caring for 4,000. On another, a place comprising about an acre, a man employed during the day, with the help of his wife, was caring for 1,200. Another man and wife whom I called on a couple of weeks ago showed me with a good deal of pride 800 fine pullets they had raised since spring, when they made their beginning with little knowledge and less experience. A capable wife is a great asset in the poultry business—or anywhere else. In general, one man who devotes his whole time to his flock can care for about 1,200 or possibly 1,500 hens. It depends a little on how much of his feed he raises. If he raises nothing but green feed and is not afraid of work he may possibly care for 1,500.

Use the Long House

The cut shows the type of house in general use throughout Southern California. It is usually about 20 feet deep and divided into sections 16 feet wide, designed to accommodate about 150 hens each. A section 20 by 16 feet contains 320 square feet, which allows a little over two feet per hen for 150 hens. This is a smaller allowance than most books give and would be too little if the 150 hens were entirely confined to this small space. As a matter of fact, they have the run of the length of the house and so can spare a little from the regulation allowance of three square feet per bird.

For convenience most poultrymen prefer two houses of moderate length to one very long one, and so, for 1,200 hens, you might build two houses each 20 by 64. Each of these houses would be divided into four sections and would accommodate 600 birds.

The house in the cut has a shed roof and is about five feet high at the rear and seven feet in front—just high enough to allow the caretaker to work comfortably. Along the front of the roof runs a sort of wide eaves, penthouse or awning, sometimes of wood, sometimes of canvas, to keep out sun and rain. In some plans this is adjustable and may be raised or lowered or removed to suit the weather. There are several good designs for these awnings. Along the front of the house are the mash hoppers, covered to keep out rain and filth, and above these hoppers are the nests. The roosts allow from 12 to 16 inches of roosting space for each bird, and underneath are the droppings boards, about three feet from the floor. The entire floor is covered with straw for scratching, so that the hens may be kept inside in rainy weather.

Open-front Laying House
Section of house on Bell Poultry Ranch, Burbank.

The yards for these houses can be arranged to suit. Opinions differ greatly as to just how much yard space 150 hens need, some holding that they do just as well without any. The ideal arrangement is that of two yards to each house, the hens being confined in one yard while a green crop is grown in the other. This keeps the soil clean and sweet.

No Best Location

If I knew the best location around Los Angeles for poultry I should not dare to say, but I do not know. Chickens do well anywhere in California where there is sufficient water for growing greens for them. Don't let any one persuade you that soil that is good for nothing else and has no water is good for chickens. They must have green feed, and if you can raise a little grain, so much the better.

In Los Angeles County there are five communities in which there are poultrymen enough to keep up a poultry association. These are Pomona, Gardena, Van Nuys, San Gabriel and the Burbank district. The advantage of living in such a community is that the association arranges for having eggs collected and delivered to the Poultry Producers' Company in Los Angeles. Some of these associations, I believe, also buy their feed in carload lots. If you are looking for a location you should visit all these communities and some others. Your choice will depend on your taste in climate and surroundings and to some extent on your purse.

How Much Capital?

This is the crucial question and the one I hardly know how to answer

In the first place, you intend to buy your land, I presume. If there is any good community around Los Angeles where fair land with water can be had for less than $500 an acre I do not know where it is. Probably it will cost you more than this. You must therefore first allow at least $2500 for your five acres. Of course you do not have to pay all cash, but the more cash you do pay the better chance you will have to succeed.

We used to figure that a laying house like that described cost about one dollar for every hen it housed, but it costs more than that now, certainly not less than $1.50 per hen. If you did the work yourself you might possibly get something you could use for $1.50 per hen. If you hire labor it will cost more. So you will need to allow $1800 for your two laying houses. There will be a feed house also and a brooder house, and you will need coops for the young stock that have outgrown the brooder house. Runs into money pretty fast, doesn't it? I should hardly think you could put up the bare buildings for such a flock under $2,000. Then there are fences and a brooder and other equipment for raising chicks.

Your baby chicks will cost around $20 per hundred. Buying in large numbers you may get them for a little less. I hardly think you will wish to raise 1,200 pullets the first year. Suppose you raise only 600. Most poultrymen think they must hatch three chicks for every mature pullet that goes into the laying house in the fall. Some will die, half or those that live will be cockerels, and there are always some culls. To be sure of 600 pullets you will need 1,800 chicks, which will cost in the neighborhood of $350. The cockerels, which are sold for broilers as soon as they weigh one and one-half pounds, will pay for themselves and a little more, but they will not pay for raising the pullets. For their feed you must have ready cash, and that means nearly or quite $1,000 more. We used to figure that it cost $1 to feed a pullet from hatching till she began to lay, but war prices have upset all our calculations, and my allowance of $1,000 for 600 pullets is probably scant.

Three thousand for land, $2,000 for buildings, $350 for chicks, $1,000 for feed, makes $6,350, and we have made no allowance for your own house or living, nor for the brooder and brooder house. You can raise feed enough to bring down the allowance a little, and perhaps the sale of cockerels and cull pullets will come to more than I have allowed. It seems to me a person going into the poultry business in a large way, on new ground, with no income till his hens began to lay in the fall, could hardly do it with less than $10,000 if he paid for everything as he went. As a matter of fact, most men who begin with poultry begin in a small way, with a few hundred chicks, and earn their living at some other business till they have an income from their hens. When a man does this he can begin on very little.

If my figures are extravagant I hope someone will correct me. My own experience is that both building and poultry feeding always cost more than you think they will.

A Good Poultry Book.

"Poultry for Profit," published by the Cultivator for a dollar, is the book you need. It was written to meet California conditions and gives all the information a beginner requires as to housing, breeding, feeding and raising chicks.

DEMAND FOR RABBIT SKINS

In recent years several kinds of fur, formerly of so little value as to offer no inducement to the trapper, have been raised in price, and consequently collecting them has been made profitable. Rabbit pelts, which are extensively used by hat makers, are among these products. One Eastern concern has announced that it will need 10,000,000 rabbit skins during 1919 and 1920 and it desires as far as possible to secure them from American sources. This is an indication of a market which should interest many a farmer boy. This fall and winter dried, cased rabbit skins will probably bring a reasonably good return. They are sold by the pound, which will contain seven or eight skins. Many farm boys can readily acquire, in the course of the winter, large numbers of skins which will net them a tidy sum and, in addition, they will have the pleasure of trapping experience. The United States Department of Agriculture, Washington, D. C., will supply any inquirer with the names and addresses of possible purchasers of rabbit skins and other pelts.

POULTRY PRODUCERS ELECT

The annual meeting of the Poultry Producers of Central California, resulted in election of a new board of directors. They are: J. R. Corliss, D. B. Walls and J. J. Berstedt (all from Petaluma), Wm. Evart of Pengrove, Wm. Spiers of Santa Rosa, Joseph Broadley of Fair Oaks, H. C. Gilson of Palo Alto, F. E. Bartlett of Modesto, G. W. Woods of Santa Cruz and J. H. Barber of Livermore.

The directors organized and elected the following officers: J. R. Corliss, president; V. P. Walls, first vice president; Wm. Evart, second vice president; G. W. Wood, secretary; The Anglo-London National Bank, treasurer, and J. H. Barber, general manager. The executive committee was made up of the following members; Corliss, Barber, Wells and Berstedt.

STANDARD VARIETIES

The United States department of agriculture is issuing Bulletin 1052, "Standard Varieties of Chickens." Or rather, this is the third of a series on standard varieties. It treats upon English, Asiatic and French classes. Regarding these varieties the foreword of the bulletin says:

"The breeds of chickens included in the Asiatic, English and French classes are in the main of a relatively large size and have been developed primarily as meat breeds. They are not so commonly kept in this country as either the general purpose or the egg breeds. The best known meat breeds in the United States are those of the Asiatic class. However, the breeds of the English and French classes, while averaging somewhat smaller in size than those of the Asiatic class, were developed for their table qualities and therefor are popularly grouped among the meat breeds. In the opinion of many persons the Sussex and Orpington breeds, both English, are general purpose breeds. The Orpington, in particular, is a fairly common and popular farm fowl in the United States.

"The best known section of the United States in which large table fowls of superior quality are produced in considerable quantities is the South Shore district of Massachusetts, near Boston. The chicks are hatched in the fall or early winter, and both males and females are grown to a good size and marketed as South Shore roasters. The males usually are caponized but are marketed as roasters rather than capons, and the pullets are marketed before they begin to lay."

CAVIES

A writer calls attention to the value of cavies, or guinea pigs, making the claim that these attractive pets may be made most profitable as well as afford genuine pleasure in growing them. They are said to have a food value in addition to producing beautiful furs.

A writer in the Denver Field and Farm remarks that the laws governing high egg production are very plain and easily understood. It unfailingly results from mating two and three year old hens of proven high egg production to males of known ability to transmit high egg laying characteristics to their offspring. Breed only the most vigorous birds. High egg producing hens produce higher egg producing daughters, regardless of the males with whom they are mated. The late molter is the late layer, but becomes the early layer in the spring.

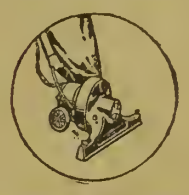
LOW SPIRITED

"Can you define a luxury?"

"No," answered the harassed citizen. "I used to think I had some idea of what constituted a luxury, but since I have to think twice before ordering pork and beans in a restaurant, I have about come to the conclusion that a luxury is anything that's for sale."—Birmingham Age-Herald.

Your Wife Should Be Considered

Washing Machine



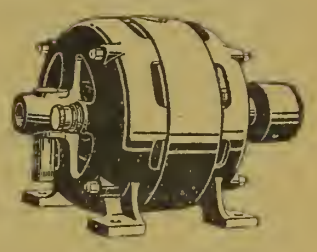
Vacuum Cleaner

Mr. Farm Owner:

You may have fitted up your farms and out-buildings with electric, labor-saving devices, but have you considered the ***lady of the house?***

An electrically driven washer, mangle, vacuum cleaner and other household devices will greatly lessen her work and add to her comfort.

A few words to your lighting company suggesting as a preference G-E MOTORS will repay you for the trouble.



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Los Angeles Office: Corporation Bldg.

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6656

This Folder Tells You How To Make Your Idle Land Earn Money

This is the day and age when you should make every foot of land produce profits for you. If you have any size tract ranging from 80 to 5,000 acres in the Western States that need development you should send for this book at once. It tells you the way to develop your property through the use of Hydro-Electric plants, gravity irrigation systems, pumping plants, grading, and buildings; in fact, it points out the various essentials that are necessary to make your ranch a producing property.

Now is the time to act, so that you can get a crop from your land next year. It is a certainty that crops will bring good prices next year, so take advantage of this condition and get your land under cultivation now.

Write today, stating location of land and number of acres.

Send for Your Copy Today FREE

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Renewed screw casing costs from one-half to two-thirds less than standard pipe. Large savings on standard pipe, fittings and valves; special fittings made to order. Pacific Pipe is thoroughly tested and guaranteed for 150 pounds working pressure; asphaltum dipped; serves every purpose. Let us save you money. Write!

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SPRING AND PEG TOOTH HARROWS

All sizes for field and orchard. Special alfalfa teeth, also special wide three-section bean harrows. We have largest assortment. Write today for free catalogue. Call at our store when in the city. Our harrows are stronger than the common type.

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Liner rates: Single insertion 3c per word; 35c per issue minimum charge.

FARM LANDS FOR SALE

BEST LAND BUY IN THE STATE first for opportunity of increase of values; second, income, this year from $200 to $400 per acre and this will increase as the property is developed. I have subdivided my 160 acre ranch in Coachella Valley and will sell on easy terms with abundance of cheap water. This is not a one crop valley but has different and valuable resources, including immense crops of the mild Bermuda onion, the first in the market, and bringing a return of as high as $1,000 per acre. Early grapes, the first in the market, full bearing vines average $800 per acre, but the most valuable of all is the date. This is the best section for dates not only in America but in the world. Our full bearing trees of best varieties bring net returns around $90 per tree. I have 10 acres started to this variety. This ten will be worth at least five times as much when in full bearing as it can now be bought for and will bring a good income while it is coming into full bearing. Much of this land is first class grape land and 4 year old vineyards on such land is worth four times as much as this land can now be bought for. 5 acres is in four year old vines and this year's crop brought $1,920; will double that when in full bearing. 50 acres is in cotton, the best cotton you ever saw grow. Took two first prizes on cotton at Riverside Fair. This land is all for sale on easy terms. I have other unimproved land here for sale. Write or come and see not only this land but what is being done in the valley. Deal direct with owner and save commission. Wm. H. Overholtzer, Coachella, California.

100 A. $3300; WITH PR. HORSES, 8 COWS AND Bull, heifer, pigs, tools and implements, hay, fodder included for quick sale, easy terms. Convenient R. R. town, high school, 6 churches, creamery, markets. 50 acres fertile fields adapted all general crops, 16-cow pasture, wood, fruit. Good buildings, 9-room house, large barn, granary, corn, poultry, hog houses. Traveling instructions to see this unusual bargain in equipped farm page 22 Strout's Fall Catalog, 100 pages Farm Bargains 23 States; copy free. STROUT FARM AGENCY, 831 A. G. New York Life Bldg., Kansas City, Missouri.

For Sale—$5,000. Clear. 104 acres Mattole Valley. Land of the big red apple, 8 acres bearing orchards, 50 flat bottom, million feet saw-pine. New bungalow and 6 other buildings. Spring water piped under pressure over premises. 14 acres under cultivation, 2 miles fine fencing, county road and Mattole River cross place. Fish and deer, 50 inches rainfall, no irrigation needed. Best apple proposition. No trades. E. T. Gray (owner), Box 524, Arcata, California.

Prune and Apricot Orchards for sale, all sizes; full bearing, well located, with improvements, for $1,500 to $2,000 per acre. DAIRY RANCH 170 Cows, 432 acres leased land, near town and depot. 70 ACRE MOUNTAIN ranch land; good; 1,000 cords oak wood, $40 per acre. 51 ACRE best pear land, house, barn, lots of water, good location; $375 an acre. Address John G. French, Santa Clara, California.

Snohomish County, Washington — 6000 acres of the finest dairy, berry or general high grade farm lands in the northwest; rapidly improving section; no drouths, bumper crops; tracts, 1 to 80 acres; ten yearly payments. This is your opportunity. Send for literature. Brownell Land Co., Birmingham, Washington.

120-Acre Fruit and Dairy Farm for lease, $750 per year, or sale $125 per acre; under Settlers' Water Ditch. 30 acres alfalfa, good sweet potato soil, in Kings County 5½ miles from Hanford. Apply F. E. Kilpatrick, Attorney-at-Law, Hanford, California.

For Sale—80 acres 2 miles east of Earlimart in Tulare county. Domestic well is only improvement. Splendid soil in settled section. $90 an acre. W. F. Marks, 226 So. Main St., Los Angeles. Phone Main 1499.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

Alfalfa Hay Today is worth $20 a ton in the field. I have for sale 60 acres good Kings County alfalfa land at $100 per acre. Would make a fine dairy and hog farm. H. M. Nelson, owner. Armona, California.

Stock Ranch. 880 Acres fenced and cross fenced, about 400 acres plow land, river, numerous springs, oak timber, buildings, etc., good feed country, outside range, fine climate. $16,000. W. W. Baldv. Madera County, Raymond, California.

40 ACRE PEAR ORCHARD
Seven Years old, adjoins Tehachapi, California. Must be sold to settle estate. J. F. Wilson, University Farm, Davis, California.

Almond Land in a proven district; low price, easy terms. Write William Metzner, 320 Market Street, San Francisco.

For Sale—Relinquishments from $50 to $1,000, also well drilling rig for sale or lease. Proven water district, fine opportunity for contract water well work. A. C. Vestal, Wagner, California.

Yolo County: choice fig land; fine climate. Price right; terms easy. William Metzner, 320 Market Street, San Francisco.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
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The Yellow Front. Established 1892
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CATTLE

Holstein Dairy Cow Auction. 160 high grade Holsteins, one of the best dairy herds in Sacramento County, at public auction, Wednesday, Nov. 12, 1919. Eighty-five cows in the lot, balance heifers and heifer and bull calves. If you want real dairy cows come and get them in this sale. Edinger-Johnston Co., owners, ranch 15 miles south of Sacramento; one mile north of Hood; 4 miles west of Franklin. Auctioneer Col. Ben A. Rhoades, Los Angeles; Sales Manager, C. L. Hughes, Sacramento.

REGISTERED JERSEYS FOR SALE
10 HEAD
I am offering my small but select herd of registered Jerseys, most all with first and second calf now on official test making from 1.20 to 2 lbs. fat per day. Heavy milkers, high testers. These cows have type and production sired by high class bulls. Come and see these cows. I will meet you at Modesto. F. W. Eileby, Carver Road, Modesto, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Registered Guernsey Bull—For sale or will trade for heifers or good fresh cow. Blackwood Ranch, Glendora, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Golden Glen Stock Farm registered Jerseys and Shropshires. Geo. W. Thomas & Sons, Riverside, California.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Nuevo, California. E. R. Stalder, owner.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

SEEDS AND PLANTS

For Sale—Gladioli Bulbs, America, Pink 5c; Autumn Queen, Yellow, 15c; Chicago White, 5c; Francis King, Crimson, 5c; Niagara, Yellow, 15c; Panama, Deep Pink, 10c; Mrs. Pendleton, Pink, red throat, 15c; Princeps, Red, white throat, 10c. Per dozen multiply by 10. Postage paid. Feijoa Sellowiana, the new Tropical Fruit now bearing, $2.50 each. HOPEWELL BULB GARDENS, 5210 Latham Street, Los Angeles. South 6485-J.

The Garden Beautiful in California by Ernest Braunton, a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant, also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also handpicked Seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

Cory Thornless Blackberry—Extra strong, well rooted tips. No order too small and none too large. Send for descriptive price list now. Place your orders early. Ekstein Nurseries, Modesto, California.

Cory Thornless Mammoth Blackberry—Order plants direct from Mountain Pass Ranch where originated. Dealers order early for January delivery. G. S. Wills, Jamestown, California.

Berry Plants—Strawberries, raspberries, blackberries, currants, gooseberries, dew berries and loganberries. Order now to assure delivery. Write M. J. Moniz, Berry Specialist, Sebastopol, California.

Write for Circular and Prices of Seeds. Wanted Sudan, Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

For Sale—Everbearing Strawberry Plants—Progressive, $1.50 per hundred; Superb, $2.50 per hundred, postpaid. G. M. Hawley, La Mesa, California.

For Sale—Grape cuttings, all standard varieties; also a limited supply of rooted grapevines, fruit trees, etc. Burke's Nursery, Lodi, California.

Napier Grass, 75c dozen; $3.00, 100 joints. C. L. Bennett, Valley Center, California.

Mammoth Jersey Kale seed, 2 oz. 15c, by the pound $1. A. P. Ward & Son, Calistoga.

Wanted—Avocado Seed, 1000 or more. G. P. Sherwood, 330½ South Hill Street, Los Angeles.

FOR RENT

Ranch for Rent—"Saito Ranch" on State highway, one mile east of Newbury Park, P. O. Ventura County, containing 954 acres, about one-half under cultivation, grain and bean land, balance good pasture, well watered, good family orchard and garden; garden irrigated with gravitation flow from creek. Good house of nine rooms and two baths. Well of good water and large cistern, barns, granary, milk house, blacksmith shop, etc. For further information call at ranch or address Walter L. Hunt, Santa Barbara, Cal.

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Young Berkshire Boars, big boned and smooth, by MAYFIELD ROOKWOOD II, sire of all Champion Barrows shown this year.

Our money back Guarantee makes mail ordering easy—and perfectly safe.

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We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Oriand, Cal.

A Sow That Farrows
10-11-15-17-11-10-9-10
Is worth her weight in gold particularly so if she is royally bred. This is the record of Symboleer's Belle. I have a boar pig from her last litter that is a dandy. If you act quickly you can have him for $75.00. SANDERCOCK LAND COMPANY, 23 Montgomery Street, San Francisco. In charge of Natomas Land Sales.

BERKSHIRES

are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. High class stock for sale at all times.
GEO. A. STINGLE El Monte, Calif.

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Ready for Service Boars—Big—smooth—stretchy pigs. Good feet and good backs. Sired by King's Big Bone Leader, grand champion at State Fair 1918. Also I have a few Pedigreed Airdale pups seven weeks old, for sale. J. S. Rogers, Chowchilla, California.

For Real Good Berkshires, cholera immune, write for my catalog that gives complete information. Frank B. Anderson, Box 724, Sacramento, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH. WILLITS. CALIF.

DUROC-JERSEYS

Durocs—A few very fine gilts and boars five months old, about 175 pounds, Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

Echo Ranch Duroc-Jerseys offer for sale two young boars and three gilts, February farrow; from crack litter of 11, nine raised; got by GREAT MODEL, noted sire of the Duroc-Jersey breed, dam by ORION MODEL. They are big, smooth and straight. Gilts priced open or will breed. Write J. L. Stevenson, Van Nuys, California.

Calineb Duroc-Jersey Farm. I won more prizes in classes entered at Glenn County Fair than all other exhibitors. Why? Big type with quality. A few spring gilts and two outstanding spring boars for sale. C. D. Bright, Tel. 598-M, Glenn, California.

Duroc-Jersey Swine for Sale. Anything you want. Spring boars and gilts from 800 pounds. O. C. K. breeding. Bred and open gilts, same blood lines, 12 great brood sows. The best breeders herd on the coast. Jersey Queen Farm, San Jose, California.

We Have 100 Young Gilts and Boars, bred in the purple, which we are selling for about half their value. Money back if not satisfied. Derryfield Farm, Capital National Bank Bldg., Sacramento.

Ireland Ranch Durocs—the big 1918 grand champion Cherry Volunteer II heads herd. Spring pig and bred sow prospects coming fine. Owensmouth, or 1219 Brockman Building, Los Angeles, California.

Big Type Durcos; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Bergiund, Dixon, California.

Our Faifadale Farm big-type Durocs, for 1919 are the best ever. Great Orion Sensation, Jr., at head of herd—a $2000 boar, with sows in same class. Write: B. H. Wilkinson, Mgr., Perris, California.

For Sale—One Yearling Boar, Duroc-Jersey. Wonder Model No. 265707. Big Type, satisfaction guaranteed. Address A. R. Bardrick, P. O. Box No. 5, Oceano, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co.. Address: R. K Walker.

For Sale—Pure bred Duroc weanlings, both sexes, big type. Wm. Corr, Madera, California.

For High Class Durocs write Leest & Mounier, Van Nuys. Blood of Orion King Gano.

RABBITS

Money in Rabbits—We are having a special sale of very fine bucks and does at reduced prices. Write us for particulars. H. E. Gibson Co., Arcadia, California.

Pedigreed Flemish Giant Does and Bucks, $5.00 each. Maud Beeching, 1578 W 46th Street, Los Angeles, California.

POLAND-CHINAS

Wondercrest, California's leading Poland-China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland-China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland-Chinas, Tipton, California.

President's Model by Big Bone Leader heads our big type Poland-Chinas. He was grand champion boar at Riverside. Daughters of Long Smooth Jumbo in herd. Plenty of good pigs for the trade. H. Christiansen, Riverside, California.

Two Fine 4 months' old boars, sired by the Grand Champion of the Los Angeles Stock Show, El Profito, and farrowed by Bonnie, a fine young sow of King Joe stock. $30 each. F. W. Newcomb, Carpinteria, California.

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Strictly Big Type Poland-Chinas; El Profito heads herd at 900 lbs.—a fine bred Big Timm. Viola L. Renwick, Santa Barbara, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Chico, California.

Poland-Chinas—Registered and well developed. Ranch adjoins town. Moramarco Bros., Van Nuys, California.

Pure Bred Poland-China pigs for sale J. R. Carhart, Fullerton, California.

HOGS

Chester Whites—Billiken Type. Big winners at the State Fair. 15 extra spring boars sired by the Grand Champion and out of Billiken sired sows. A few spring sow pigs, same breeding. Three bred sows—two bred gilts. Billiken blood. Write for special catalogue and price list. C. B. Cunningham, Mills, California.

Tamworth Hogs, Registered and true bacon type. C. E. MOYER, Hemet, California.

POULTRY

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
The male is half the flock, therefore he should be of the best breeding. We are offering 500 breeding cockerels; 350 from 200 egg hens or better, the other 150 the pick of all our regular pens. Prices range from $5.00 each and up. Discount on large quantities. Shipment to be made October 1st. No fall chix for sale. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trap nested S. C. White Leghorns every day in the year since 1912. Box B-337, Inglewood, California.

Baby Chicks For Sale—200,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock; 252-294 egg strain for delivery during November and December. November prices; 25, $5.00; 50 $10.00; 100, $18.00. Special prices 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Now booking orders for Spring 1920 chicks. Established 1898. Must Hatch Incubator Co., 438 Seventh St., Petaluma, California.

White Leghorns, chix and hatching eggs also a few cockerels from Curtis' heavy layers. We spare no expense to produce heavy layers with strong vitality. Any chick is good enough for some but the progressive poultryman demands the best. Spring orders are being booked now. All our chicks are hatched from eggs laid in our own yards. O. B. Curtis and Son Gardena, California. Route 1, Box 29.

Baby Chicks after January 1st. Book your orders, remembering "the early bird." Hatching R. I. Reds, Barred and White Rocks, Black Minorcas, White, Brown and Buff Leghorns. Large or small lots from first class breeding stock; hatched right and priced right. Circular free. Mission Hatchery, Box 27, Campbell, California.

Thoroughbred S. C. White Leghorn Chicks—In 100 and 1000 lots from our Hoganized and Trapnested Stock. Order now for spring delivery. Inventors and Distributors of "Forbros" Separator and Trapnest combined. Write for circular. Forster Brothers, 2918 Otis Street, Berkeley, California.

Poultry for Profit—A 225 page book, with 18 pages of illustrations, tells you how to successfully house, feed and raise chickens, ducks and turkeys in California. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 N. Broadway, Los Angeles.

Order Baby Chicks Now, for immediate or spring delivery. Several varieties. Safe arrival guaranteed. Write for free circular. R. I. Red, Buff Orpington and White Rock cockerels now ready for shipment. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto, California.

Single Comb White Leghorns and Barred Rocks—For sale, Hoganized and closely tested hens and 200 pullets, some laying. Also standard quality Barred Rock cockerels and pullets. Frank P. Penn, Portersville, California, care of White River Stage.

Weaver's Poultry Ranch—15 years a breeder of White Leghorns for egg production on a commercial scale. Just now some strictly A-1 March cockerels at $3 each, or lots of six for $25. Address Weaver's Poultry Ranch, 522 Chestnut Avenue, R. D. 1, Box 990, Los Angeles.

For Sale—Buff Leghorn cockerels and cock birds. A few hens and pullets. Mated if desired. The best stock in the West. W. L. Bartholomew, Chino, California.

Sly Offers Rhode Island Red Cockerels from special individual matings. Big husky fellows, exhibition stock. Sons of high-producing hens. Send for descriptive literature. Albert Sly, 1642 (B) Middleton Place, Los Angeles.

Petaluma Hatchery — Established 1902. Can ship day old chicks to points rented in three days. Four varieties. Why not have the best? Free fall circular. L. W. Clark, Petaluma, California.

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horoughbred Barred P. Rocks—egg rec ords, 190-210 per hen. Fertile eggs for atching $2.50 per 15. Warren Poultry ards, 36 Little Delmas Ave., San Jose alifornia.

lue Andalusian Cockerels—There is no better BLUES to be had. From heavy ying strain. Get your orders in early. ices reasonable. J. R. Huddleston, 342 lgeware Road, Los Angeles, California.

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ahajo Farm, P. O. Box 597, Sacramento, California, offer White Leghorns, Brown eghorn, White Rock cockerels and pul ts. High class standard-bred stock.

arred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonder I layers. Stock for sale. Charles H odden, Los Gatos, California.

Eastman's Bred-to-Lay" Hoganized and trapnested Barred Plymouth Rocks. Fall icks — Eggs — Cockerels. Fairmead oultry Farm, Fairmead, California.

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uff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S eservoir, Pomona, California.

WANTED

viss, 27. Desires position in northern county on large farm as assistant to rner, renter or manager. Grain farm th vegetable growing preferred. Has uropean university diploma and Euro an practical experience in grain farm g on sandy and heavy soils, potato and et culture, hog and cattle raising, dairy dustry, reliable and will do every work. ow at the Farmer's Short Course, Uni rsity Farm, Davis. Can start after No mber 7th. Address Box B. M., Cultiva r, Los Angeles.

anted—Salesmen and Agents. Exclu sive territory granted. Powerene is ual to gasoline at 5c a gallon. Is guar teed to be harmless, to remove and event carbon, doubling the life of all soline motors, saving repairs, adding ap, speed and power. An amount equal 20 gallons of gasoline will be sent to y address in the U. S. for $1.00. W. rter Barnes, Santa Rosa, California. pt. A-11.

all Ranch Wanted—Twelve to twenty acres. Myself and friend would take out forty acres but price must be right d on easy terms, soil and conditions vorable for English walnuts, fruit, etc. ould appreciate anyone advising me of od location at reasonable price and ms. Musical Director, Box 733, Oak id, California.

ddle-aged Man, five years' experience raising and irrigating rice. Would like altion as foreman or manager or would y an interest. Will exchange references. as. King, 1960 Michigan Avenue, Los geles, California.

anted—150 Rhode Island Red or Barred Rock pullets six mos. or older. Also 150 ode Island Red or Barred Rock year g hens. In lots of 25 or more. State west price, addressing C. T. Johnston, met, California, Route A.

anted—A Few Thousand Malaga and Thompson Seedless Grape Vines. Some ibrella Trees, Grape Fruit and Apricot ees. Imperial Valley Nursery and Seed use, El Centro, California.

anted—Black Walnut seedling nursery. Will buy or graft on shares. Have my n scions, Eureka and Placentia Perfec n. The Walnut Nursery, W. A. Litten. ox., Whittier, California. Phone 6294.

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For Sale—A new Belt-trail Tractor, only used 60 days; the reason for wanting to sell furnished to the prospective purchaser; also Knapp 3-disc plow and double disc cultivator. Address G. E. Jenkins or George Knudson, Yucaipa, California.

For Sale—Yuba Tractor, 12-20, just overhauled. Powerful little machine. Price $1000.00. L. B. Cadwell, Carpinteria, California.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

For Sale; Titan Tractor 10-20, good as new. Cheap, 901 E. Eighth St., Wardrobe Laundry, Los Angeles.

For Sale—Nelson Tractor in good condition. Mrs. Lena Clendenon, Palms.

LIVE STOCK

GUINEA PIGS OF QUALITY
40 entries at Los Angeles Livestock Show, Oct. 23, 1919, won 23 Firsts, 12 seconds, 4 Thirds. Special prices, 1 solid colored male and 4 broken colored female breeders all for $5. Angora and solid colored cavies $2 to $5 a pair. Also Flemish Giants bucks and does. Week days only. San Fernando Road, Eureka Rabbitry and Caviary, R. D. 1, Box 48, Burbank, California.

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

For Sale—One Standard Bred Jack or will exchange for span of young pure bred Percheron mares and pay difference. Will trade for cattle. Chas. Hubbard, Box 96, Riverdale, California.

For Sale—Big Handsome Jack, standard bred, 4½ years, valuable animal; price reasonable. Wm. A. Stocker, Route 4, Sebastopol, California.

For Sale—Registered Belgian stallion. Also grade horses. Apply Newport Ranch, Ethanac, California.

MISCELLANEOUS

Leaf Tobacco—We are growers of Tennessee Red Leaf Chewing and Smoking, aged in bulk, limited supply, order quick. 3 lbs., $1.80; 6 lbs., $3.30; 10 lbs., $5; Postpaid. Address Murphy Company, Martin, Tennessee. Reference, Peoples Bank.

For Sale: Rare books and papers on silk culture. Choice mulberry seeds from Europe. Drawings for the filature. Mrs. S. R. Bellamy, 256 5th Ave., San Francisco, California.

Made of Redwood, Hawley's Perforated wooden fell casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

For Sale—Wooden Storage Tanks 450 to 11,000 gallons capacity. Inquire 61788 or 15119. 547 Macy St., Los Angeles, California.

For Sale—2000 5 gallon cans, good as new, 2 in. screw top, in lots to suit. Phone Col. 811, 214 S. Lake Avenue, Pasadena.

Boys You Can Make Money saving pumpkin seeds. Write for particulars. Bomberger Seed Co., Modesto.

If You Want to sell or exchange your property write me. John J. Black, 116 St., Chippewa Falls, Wisconsin.

TREES

Nursery Stock. Apples, pears, peaches, cherries, prunes, plums, berries, etc. OURS IS MAIL ORDER SYSTEM. IT SAVES YOU MONEY. Write us now for Planters' list. 20 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

For Sale—3500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

GLENN COUNTY MEETINGS

November schedule Glenn County farm bureau meetings is as follows: Orland, Nov. 12; Jacinto, 14; Codora, 17; Capay, 17; Lake, 20; Plaza, 21. Directors meeting, 10 a. m. 22; Willows, 24; Elk Creek, 26; Grapevine, 26; Larkin, 28.

Report of the recent state conference will be made at each meeting during the month. The important topic of a state and national farm bureau will be presented during the month.

Household Department

WAITING

I could say nice things about him,
I could praise him if I would;
I could tell about his kindness,
For he's always doing good.
I could boost him as he journeys
O'er the road of life today;
But I let him pass in silence
And I've not a word to say;
For I'm one of those now waiting—
Ere a word of praise is said,
Or a word of comfort uttered—
Till the friend we love lies dead.

I could speak of yonder brother
As a man it's good to know
And perhaps he'd like to hear it
As he journeys here below.
I could tell the world about him
And his virtues all recall,
But at present he is living,
And it wouldn't do at all;
So I'm waiting, yes, I'm waiting,
Till the spark of life is fled;
Ere I raise my voice to praise him
I must know that he is dead.
—Edgar A. Post, in Service.

KOPECS, DOGS AND POETRY

AMERICAN soldiers who have just returned from six months 'service in northern Russia have brought back enough interesting impressions from Archangel and the surrounding country to regale their friends with for many a long day. An idea of what our fighting men, mostly from Michigan and Wisconsin, thought of Archangel, its girls, its customs and things in general at the top of the world is found in The American Sentinel, the newspaper published "up there" by the American Red Cross for their entertainment.

Copies of The Sentinel show that the Arctic weather was not severe enough to freeze the humor out of the soldiers or clog their rhyming apparatus. The following description of Archangel, pronounced by the editor of The Sentinel as "the best pen picture of the place written by an American soldier," proves that one of Uncle Sam's boys did not permit the job to get on his nerves:

"We are so far north that the dog-gone sun works only when it feels inclined to do so, and in that way is like everything else in Russia. The moon isn't so particular, and comes up, usually backwards, at any time of day or night, in any part of the sky, it having no set schedule, and often it will get lost and still be on the job at noon. Yes, we are so far north that 30 degrees below will soon be tropical weather for us, and they will have to build fires around both cows before they can milk them. Probably about next month someone will come around and say that we will be pulling out of here in a day or so, but then the days will be six months long.

Now, up here in this tough town there are 269,831 inhabitants ,of which 61,329 are human beings and 208,502 are dogs. Dogs of every description, from the poodle to the St. Bernard, and from the wolfhound to the half-breed daschund.

"The wind whistles across the Dvina like the twentieth century limited passing Podunk, and snow flakes are as numerous as retreating Germans were in France.

"We read in The Stars and Stripes that the boys in Italy had some tongue-twisters and brain-worriers, but listen to this. Centimes and sous and francs may be hard to count, but did you ever hear of a rouble or a kopec? A kopec is worth a tenth of a cent and there are a hundred of them in a rouble. As you will see, that makes a rouble worth a dime, and to make matters worse all the money is paper, coins having gone out of circulation since the beginning of the mix-up. A kopec is the size of a postage stamp, a rouble looks like a United Cigar Store certificate, a 25-rouble note resembles a porous plaster, and a 100-rouble note, the Declaration of Independence.

"Every time you get on a street car (tramway) you have to count out 60 kopecs for your fare and most of us would rather walk than be jammed in the two by four busses and fish for the money. Before boarding a car, each passenger usually hunts up a couple of five-gallon milkcans, a market basket or two, and a bag of smoked herring, so that they will get their kopecs' worth out of the ride, besides making the atmosphere nice and pleasant for the rest of the passengers.

"When a soldier in search of a meal enters a restaurant, he says to the waitress, "Barishnia, zakazetti bifstek, pazalouista," which means, "An order of beefsteak, lady, please." You see you always say "barishnia," which really means "girl," and until a young lady is married she is always addressed in that manner. She will answer the hungry customer with, 'Yah ochen sojalayu shtoo nas niet yestnik prepasov siechas" (a simple home-cure for lockjaw), meaning, 'I am sorry, but we are right out of food today."

"When a Russian meets another man he knows on the street, both lift their hats and flirt with each other. If they stop to talk, they always shake hands, even if they haven't seen each other for fully 20 minutes. Then they simply must shake hands again when they leave. When a man meets a lady friend, he usually kisses her hand and shows how far he can bend over without breaking his suspenders.

"Ah," he will say, "Yah ochen rad vas veedet, kak vui pozavayetie?" which, in the United States, means. 'How do you do?' To which she will reply 'Blagadaru vas, yah ochen khoroshaw," or "Very well, thank you." It is the knockout. A fellow has to shake hands so much that some of us are getting the habit around the company.'

Russian girls prompted the following tribute from one of the American boys:

I wonder, little sister, as I see you
pass me by,
With your coarse, ill-fitting garments
And your huge, ungainly feet,
If a lot of things aren't true of you.
The which your looks belie.
If some very minor changes
Wouldn't make you mighty neat.
I know a lot of damsels with twice
the chance you've had,
Who are twice as prone to grumble
as you ever seem to be,
Who are twice as quick to anger, and
every bit as bad,
As their husky, Russky sister ever
yet appeared to me.
If you could change your clothes for
some my Yankee sisters wear,
I imagine they would envy you the
roses in your face;
With proper Yankee foot-gear and a
ribbon in your hair,
You would spot them several tallies
and give them second place.
It's a weedy row you're hoeing, but
the way you hoe is great,
And I'm proud of your acquaintance, just as proud as I can be;
It is you, in my opinion, who will
build the future state,
Who will shape the greater Russia
as a true democracy.
—Red Cross Bulletin.

MORE GOOD CAKES

Mrs. Virginia Parker, Fillmore

I am sending some choice cake receipts for your approval and perhaps the approval of your subscribers. Each is tried and trusted and covers the average want for a good cake.

Spice and Fruit Cake. Good and very economical and keeps moist. Four cups flour, two cups molasses, one cup sugar, one cup lard, one cup buttermilk, one teaspoon salt, four eggs, one dessert spoonful soda dissolved in the milk, one teaspoon ginger, one-half teaspoon nutmeg, pinch cloves, one teaspoon cinnamon. Mix sugar and egg yolks, then lard, molasses, dissolve soda in the buttermilk and add one pound seeded raisins or any other fruits or spices you have. This is fine to bake in large flat cakes, two inches thick, in biscuit pan and ice with thick white icing Cut in squares or it makes a fine quantity muffin cakes.

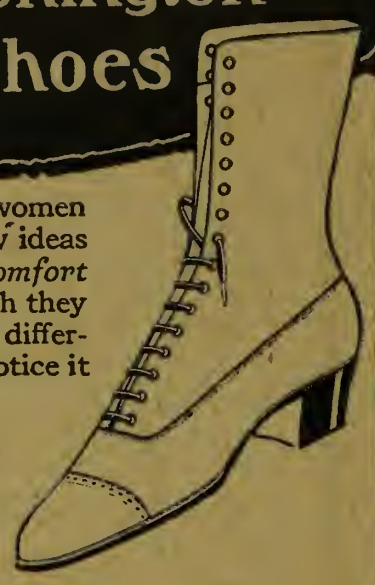
The One, Two, Three, Four Cake of our mothers is a good one, easy to remember without the book, rich if made with butter, and is fine as a loaf, as layers or for muffin cakes.

One cup butter (or substitute), two cups sugar; three cups flour, four eggs, one cup milk, two level teaspoons baking powder, one level teaspoon vanilla extract, or grated yellow rind, one-half lemon and a teaspoon of the juice , pinch salt.

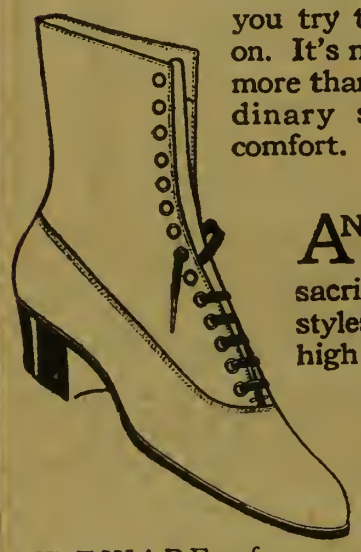
To mix One, Two, Three, Four cake:

Easy on Your Feet and Stylish

Mayer Martha Washington Shoes



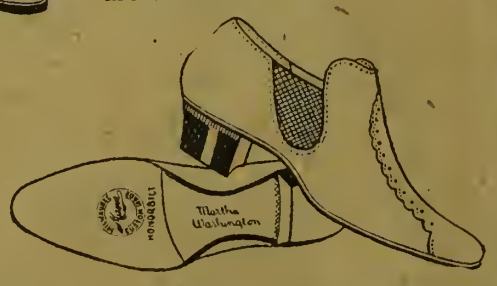
THESE fine shoes for women will give you some new ideas about comfort and style. *Comfort* was the original idea on which they were built—and they feel so different on your feet that you notice it the moment you try them on. It's much more than ordinary shoe comfort.



AND Martha Washington Shoes give you comfort without a sacrifice of style. All the latest styles are included in this line—high and low cut, lace and button.

You will notice they have an excellence of detail that gives them the stamp of quality. They wear as well as they look and feel. Martha Washington Shoes are built on honor!

BEWARE of imitations. The genuine have the Martha Washington name and Mayer Trade Mark on the shoe. If your dealer doesn't handle them, write us.



This shoe has been widely imitated. Look for the name and trade-mark on the sole or label in the top.

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The California Cultivator
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Separate eggs. To well beaten yolks add one cup sugar, cream butter or substitute and add one cup sugar. After well beaten put the two mixtures together. Sift flour, salt and baking powder together twice and add with milk and flavor. Lastly fold in the whites well beaten.

Brides' Cake. This is especially delicious and is old and tried for many generations.

Whites 20 eggs (whe-e-w!) one and one-half pounds flour, one and one-half pounds sugar, one pound butter.

Each part must be carefully prepared and well beaten. Eggs must be so stiff the bowl can be turned over without spilling. Mix lightly together. Flavor with one teaspoon lemon extract and one teaspoon almond. Bake in large pan with center pipe. Ice thickly with good, white frosting when almost cold.

Lord Baltimore Cake. One and one-quarter cups sugar, three-quarter cup Crisco, one-half cup water, one teaspoon vanilla, two and one-half cups sifted flour, two and one-half teaspoons baking powder, one-half teaspoon salt. Yolks six eggs beaten stiff. Cream Crisco, add sugar and cream together. Sift together three or four times all dry ingredients and add alternately with water and vanilla. Beat mixture thoroughly. Last fold in lightly beaten yolks of eggs.

Lady Baltimore Cake. One and one-quarter cups sugar, three-quarter cup Crisco, one-half cup cold water, two and one-half cups sifter flour, one teaspoon vanilla, one-half teaspoon salt, two teaspoon baking powder. Whites six eggs beaten stiff.

Mix same as Lord Baltimore Cake, using whites of eggs instead of yolks. These make fine loaf cakes iced, plain or layers.

Filling or Icing. Three cups sugar, two-third cup boiling water. Boil syrup till it will spin a thread four inches long from point of spoon dipped lightly in it. Don't stir or syrup will turn to sugar. Have whites of eggs beaten about half. Pour very slowly the cooked syrup over, beating constantly with other hand until cool and right for spreading. (This is for both cakes). Before dividing, take out six tablespoons plain for tops of both cakes. For Lord Baltimore Cake take one-half icing, add to it one-half cup chopped raisins, one-half cup chopped nuts, five figs cut small.

For Lady Baltimore Cake, use other half icing, add one-half cup candied cherries ,one-half cup candied pineapple cut fine.

Florence MacLean, Rialto

The following recipes are reliable to use for storing reserve supply, unexpected company, etc., and especially suitable for lunch boxes, because of their good qualities. Of delicious and appetizing taste, good keeping, and last, although not least, economical.

Rocks. Three cups of uncooked oatmeal (rolled oats), two cups flour. Rub into oatmeal and flour one cup lard and one-fourth teaspoon salt. Add two cups brown sugar, one cup hot water with one teaspoon soda, dissolved in it, one teaspoon cinnamon, one-half teaspoon cloves, one cup of raisins or nuts, or a portion of both to suit taste. Mix thoroughly, then drop the dough from a teaspoon in tiny cakes over the pan to bake in a quick oven till cakes are a golden brown color.

Ginger Wafers. One cup sugar and the same of butter creamed together, one cup molasses, one-half cup coffee (liquid), two teaspoons soda, one tablespoon ginger, use sufficient flour to make a dough stiff enough to roll very thin. Cut out and bake quickly.

Swiss Fruit Cake. One cup flour, one cup sugar, two teaspoons baking powder. Sift all together four times. Add one pound whole walnut meats and 15 cents worth of dates to the flour and sugar, dry thoroughly, then add beaten yolks of four eggs, mixing well, then last the beaten whites of the four eggs and a pinch of salt. Put this mixture in a loaf cake pan and bake in a moderate over 30 minutes.

WHAT'S YOUR LIMIT?

"How long do you suppose a man can go without air?"

"Hard to tell. The longest sleeping car trip I ever took occupied seven days."

A LETTER FROM JERUSALEM

Natives of Jerusalem declare that the Bibical prediction of a day when the lion and the lamb would lie down together has about reached this quarter of the globe. For the first time in the history of the Holy Land, Christians, Moslems and Jews are working side by side in industrial work rooms which were opened by the American Red Cross Commission to Palestine. Racial and religious hatred and suspicion are being forgotten by the men and women, refugees of the war, who are toiling there together

One of the greatest needs of the people of Jerusalem has been clothing. Another great need has been employment for religious pilgrims who were stranded in the historical city in 1914. The American Red Cross therefore arranged with the British Government to establish looms for hand weaving in an old street known as the cotton market. Fifteen shops and one large building, formerly a mill, were rented, and 28 looms were furnished by the Red Cross.

To put the work on a permanent commercial basis, a native, Shukri Batato, was put in charge of the enterprise. Cloth from Red Cross workshops at Gaza and weaving thread were supplied, and weaving was begun. The looms not only are giving employment to a great many persons, but are providing an output of cloth of good quality which can be sold at reasonable prices. Of equal importance is the spirit of good feeling which is growing up among the people of different religions and races.

Plans are being made to permit a certain number of apprentices to learn the art of hand weaving in the shops, and a special sum of money has been furnished by the British Government for this purpose. The sales from the shops have been good, and it is believed that the business will prove successful.—Red Cross Bulletin

SOME HOUSEHOLD HELPS

By Martha

To keep silver from tarnishing when it is to be laid away for some time rub the entire surface of each piece with fresh lard, then wrap each piece in old linen then in paper and lay away carefully. When needed for use the silver will come out as bright as when put away, and all it will need will be a plunge in very hot water with a little soda added, then in clean hot water and a rubbing dry with a soft cloth.

To keep nice steel carving knives and forks from rusting apply a preparation composed of one part rosin to two parts tallow. This should be melted together and applied while hot Let dry and wrap each piece separately before putting away. To clean brass handles on furniture unscrew and take them off, put them in hot suds and let remain for several hours, then scrub with a brush, rinse and dry thoroughly, and polish until they shine like new, then screw in place again.

Table cloths, doilies and napkins last twice as long if they are never rubbed hard in washing, and the best way I have ever tried for washing the pieces is to put them to soak for several hours in warm suds made with dissolved borax soap chips. A very little of this soap solution makes a nice soft suds that softens and whitens without injuring the fabric in the least. Dish towels boiled in this suds once or twice a week are kept soft and white as long as they last and to keep the inside of the coffee pot clean and in a sanitary condition fill with hot soap chip suds and let boil for half an hour, then rinse and dry out in the air and sunshine. The silver in every day use is kept bright and shining by washing through the suds, then drying and polishing with soft linen.

One may so arrange that it will take but a minute to prepare a glass of delicious lemonade. Make a thick syrup from five or six pounds of white sugar and a little water. Extract the juice from a dozen lemons and grate into the juice the rinds of half of them and allow to stand over night, then stir into it the syrup previously prepared, mixing thoroughly. When wanted, put a teaspoonful in a glass, fill glass with cold water and you will have a fine glass of lemonade. You can use oranges in the same way, except that less sugar is needed

The Cultivator Patterns

3013—Ladies Dress—Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires six yards of 44 inch material. The dress measures about two and one-eighth yards at hem of skirt. Price ten cents.

2660—Girls Dress. Cut in four sizes: 8, 10, 12 and 14 years. Size 12 requires four and one-eighth yards of 40 inch material. Price, ten cents.

3010—Ladies Apron. Cut in four sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size Medium requires three and one-quarter yards of 36 inch material. Price ten cents.

3026—Girls Gymnasium Suit. Cut in five sizes: 8, 10, 12, 14 and 16 years. It requires three and three-quarters yards of 27 inch material for the blouse, and three and three-eighths yards for the bloomers, for a 12 year size. Price ten cents.

3025-3008—An Attractive Costume. Waist 3025 cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3008 cut in seven sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. To make this attractive style for a medium size, will require five and three-quarters yards of 44 inch material. Width of skirt at lower edge is about one and three-quarters yard. Two separate patterns, ten cents for each pattern.

3030—Girls Dress. Cut in four sizes: 6, 8, 10 and 12 years. Size 10 requires three and three-quarters yards of 40 inch material. Price ten cents.

2675—Ladies House Dress.. Cut in seven sizes: 31, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires six and one-eighth yards of 36 inch material. Width at lower edge is about two and one-third yards. Price ten cents.

3028—Girls Coat. Cut in 3 sizes: 10, 12 and 14 years. Size 14 requires 3½ yards of 44 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest Chicago styles, all pattern orders are filled in Chicago. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
California Cultivator
Los Angeles.

THIS WEEK'S PATTERNS

This week's patterns show four good styles for young girls, three of them suggesting combinations of materials that are good for make overs. No 2660 would be particularly suitable for a "best" dress with collar and cuffs of detachable embroidery or of same material as jumper embroidered in simple design with heavy yarn or silk. The tiny buttons, covered with material make a very attractive finish. If the guimpe waist is of silk of daughter's favorite color she will be a pleased and happy little girl.

The school dress opposite is pretty and practical in wool or heavy wash material such as Devonshire or gingham. Many new patterns in the latter are being shown in the stores for fall and winter wear.

Coat 3028 of heavy jersey will be very comfortable and stylish. If of closer woven material and lined it will be warm enough for riding in cold weather.

A word about linings. Their price is one of the most appalling features of the present day dressing problem. The sateens and other cotton mixtures wear well and are satisfactory except for relining a rather snug fitting garment. Many an economical woman has purchased a sateen lining for an old coat and cut and fitted and sewed it in only to find that it made her comfortable old coat too tight to button and the arm's eyes too tight to wear. I have found pongee the best solution, that is the real Chinese pongee of raw silk. As yet it has not soared upward on the high price wave, being purchasable at half the price of cotton sateens. If the color is objectionable, being of silk it readily takes on color from the practical soap dyes we now have. Brown, green, red or gray will darken and change the color very satisfactorily.

Work apron 3010 is the practical slip-on-in-a-hurry style that has long been popular. No. 2675 with deep arm holes and long sleeves is one of the best work dresses we have seen. If opened down to the hem it will be easier to iron.

The gymnasium suit 3026 gives patterns for blouse and bloomers both for ten cents, surely a bargain.

TO CLEAN ZINC JAR TOPS

My latest discovery is a way to clean zinc jar tops. Scour with Lighthouse Cleanser or Old Dutch, wet with gasoline. Heat caps, it facilitates the cleaning.—Jessie S. Purrier, Bonsall.

* * *

To Cultivator Readers:

Send in practical hints such as the above. Subscription credit will be extended if you send name and address of one to whom you wish credit given.

CORRECTION

In the recipe for hot water cake by Mrs. S. D. Bickford, published in the Cultivator of October 11, the amount of hot water was omitted. The recipe should read: Four eggs, two cups granulated sugar, two cups flour, two teaspoons baking powder, one teaspoon vanilla. Beat eggs, add sugar and beat again, add flour, lastly hot water. Bake about 40 minutes in moderate oven.

THE DOCTOR'S ORDERS

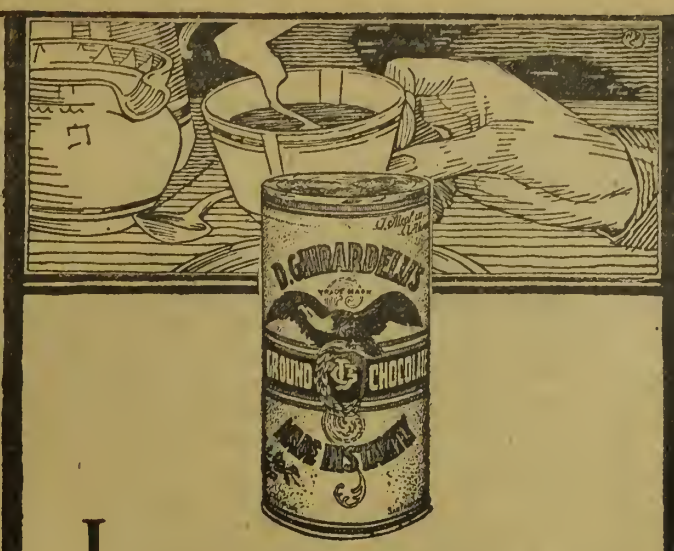
She was the sort of woman who always tells everybody her business. With a cheery smile she settled herself at the counter and began: "My husband has been very ill—very ill—so I have to do his shopping, and I want a shirt."

"Certainly, madam," said the salesman, courteously, "stiff front and cuffs?"

"Oh, no!" she exclaimed ,in horrified tones, "the doctor says he must avoid anything with starch in it."—Pittsburg Chronicle-Telegraph.

OH, FOR AN ACCIDENT!

Some diplomatists seem to achieve great success simply by sitting tight and letting matters take their own course, something after the manner of the Arkansas farmer who retired in disgust, saying he believed he could make more money by accident than he could by farming.—Kansas City Star.



LOTS of chores about the farm—up late and early—out in all sorts of weather. Farm folks need a food-drink like Ghirardelli's Ground Chocolate—delicious, rich, strengthening! A steaming cup of Ghirardelli's has saved many an exposure from developing into a serious illness. Made in a jiffy, too!

Never sold in bulk—but in cans only.
In ½ lb., 1 lb. and 3 lb. sealed cans—
at the store where you do your trading.

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Since 1852 San Francisco
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Keeps baby warm and happy

Pearl Oil in a good oil heater keeps dampness and chill from the home. It gives warmth and coziness without smoke or odor, dust or dirt. Portable. Economical.

Pearl Oil is refined and re-refined to be pure and clean burning. Sold in bulk and five-gallon cans. Save money by buying in bulk. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters

STANDARD OIL COMPANY
(CALIFORNIA)

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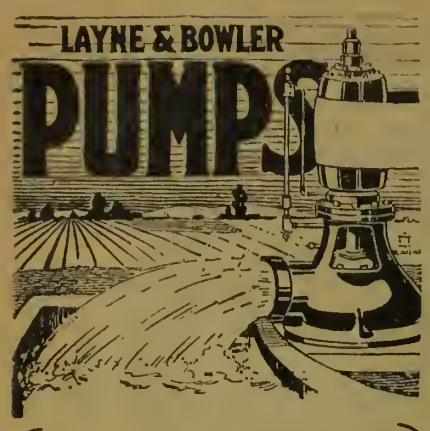

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Ask for Folder No. 30

Layne & Bowler Corp.

900 Santa Fe Ave.

Los Angeles California

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Sulphate of Ammonia

Watch for our talks on Top Dressing with ARCADIAN Sulphate of Ammonia. You will find them interesting as well as instructive.

ARCADIAN Sulphate of Ammonia is for sale by: CALIFORNIA: San Francisco; Hawaiian Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Pacific Guano & Fertilizer Co., Western Meat Co., California Fertilizer Works. Los Angeles; Pacific Guano & Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Agricultural Chemical Works, Hauser Packing Co. OREGON: North Portland: Union Meat Co.

For information as to application, write

The Barrett Company

Agricultural Department
510 First National Bank Bldg.
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Citrus Trees

Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.
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Wholesale Implements
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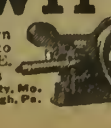


WITTE ENGINE WORKS
3100 Oakland Ave., Kansas City, Mo.
3100 Empire Bldg., Pittsburgh, Pa.

Los Angeles Markets

Los Angeles, November 5, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 65 lb.

Dairy Exchange prices last week on extras:

Oct.	29	30	31	Nov.1	3	4
'19 ...	74	74	74	74	..	65

CHEESE

Brokers' prices:

California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 75 dozen; case count, Produce Exchange closing price 70 dozen; pullets, Produce Exchange closing price, 60 dozen. Pewee pullets, 49.

Dairy Exchange prices last week on extras:

Oct.	29	30	31	Nov.1	3	4
'19 ...	70	70	70	70	..	75

POULTRY

Prices to producers: Hens, lt. 32; heavy, 33; colored over 4 lbs., 36; broilers, 43@44; fryers, 33; roasters, 33; old roosters, 19; ducks, old, 23; ducklings, 30; ducklings, Pekins, 3½ up, 32; geese, 25; turkeys, 35@43; squabs, 43.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 13.00; 150 to 225 lbs., 13.50.

Cattle (on foot, gross weights): Steers, good, 10.50@11.00; medium, 9.50@10.00; heifers, good, 8.50@9.00; fair, 7.50@8.00; cows, fair to good, 7.50@8.00; bulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00@13.00; 175 to 225 lbs., 10.00@11.00. 14.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@14.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock November 4, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate. New stock, Stockton; Burbank, best, 3.35@3.50; others 2.75 per cwt.; Russets, 3.00@3.35 per cwt. Local: Lug boxes, 1.15@1.25.

Carlot Sales: Demand and movement moderate, market firm, little change in prices. Stockton: Burbanks, sacked, per 100 lbs., fancy, 3.00@3.10; choice, 2.75@2.85. Idaho: Russets, very few sales, holding for higher prices, sacked per 100 lbs., fancy mostly 2.85.

Sweet Potatoes: 80 per lug; 2½@2¾ per lb.

Carloads, f. o. b. usual terms. Demand and movement moderate, market steady, per cwt., 2.10@2.25, mostly 2.10@2.15.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, lug, 1.25; per cwt., 4.25@4.50; Brown and Yellow varieties, 4.50@5.00 per cwt.; lug boxes, 1.50.

Garlic: Local, per sack lots, 30.

VEGETABLES

These are the actual prics obtained November 4, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Green pods, lb., 8@9; fancy shipping, 11@12; Limas, 9; shipping, 10@11.

Cabbage, lb., 1½@1¾; crate, 1.50@1.75.

Carloads, f. o. b. usual terms. Demand and movement moderate, market steady. Winningstadt and Cannonball, mostly 26.00.

Carrots, doz., 35@40; lb., 3; sk., 1.25.

Cauliflower: Local, per doz., 1.60@1.65; field crates, best, 3.00@3.25; other 2.25@2.50.

Carloads f. o. b. usual terms. Demand good, movement increasing, market firm, prices slightly higher. Crates, Snowball, 1.75@1.90, mostly 1.80@1.90.

Cucumbers: Local stock scarce, lug boxes 80@1.00; shipping stock, lug, 1.40@1.50.

Celery: Local stock 1.15@1.25 per dozen bunches. Crates, 4.00@4.50; fancy shipping stock, 4.50@4.75; celery root, dozen, 1.10.

Carloads f. o. b. usual terms. Demand moderate, movement limited, supplies scarce, market steady. Crates, Golden Heart, mostly 4.50, few high as 5.00.

Chicory, dozen, 45@50.

Corn: Roasting ears, lug of 3 dozen, 90@1.15; mostly 90@1.00.

Eggplant, best, lb., 4@5.

Peppers: Bell, 75@85 per lug box; Chili, 45@50; shipping high as 1.00; lb., 4@6; Bell, 5@9.

Peas, local, lb., 10@12; best, 15.

Lettuce, local, cr., 1.75@2.00; doz., 65@70; shipping, 2.50@2.75.

Carloads f. o. b. usual terms. Demand active, movement moderate, market strong, prices slightly higher. California crates, Los Angeles or New York market (Iceberg), 2.80@2.90, poorer low as 2.60, few best high as 3.00, in mixed cars.

Pumpkins, 1½@2 lb.

Peas, local, lb., 10@12; best, 13@15.

Parsnips, lug, 85@1.00; sk., 2.25.

Romaine, doz., 45@50.

Rhubarb: Local, box, 1.00@1.35.

Squash: Summer, lug, 75@1.00; Hubbard, 1¼@2.

Spinach, doz., 30@40.

Tomatoes: Lug boxes, ripe stock, best 1.00; others 90; poorer 60@75. Shipping stock, 1.25@1.35.

Carloads: Demand good, movement moderate, market strong, prices slightly higher. Lug boxes, Stones wrapped, pinks and greens, in straight cars, mostly 1.65, few 1.75; in mixed cars, 1.75@1.90, mostly 1.75.

Turnips, doz., 40@45; others, 30@35.

FRUITS

These are the actual prices obtained November 4, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms; Cash on the walk.

Apples, California: Bellefleurs, 4 tier 1.85@2.00; 3½-4½ tiers mostly 1.70@1.85; Delicious, 3.50@3.75; loose, 5@6 per lb. Northern: Jonathans, extra fancy, 3.15@3.25; fancy, 2.90@3.00; choice, 2.50@2.60; loose, 6@6½ per lb.; Newton Pippins, lb., 4@5; Spitzenburgs, extra fancy, 3.00@3.25; fancy, 2.75.

Bananas, 9@10.

Cranberries: Barrels, 12.00@12.50; boxes, mostly 4.00; lb., 12½@13.

Grapes: Demand and movement good, market firm. Local and Northern stock: Per lb.: Tokays, 6½@9; Muscats, 7½@8; Malagas, 7@9; Black Cornichons, mostly 7@8; Red Emperors, 7@9½.

Nectarines, lb., best 6@7; others, 5@6.

Pears: Northern Bartletts, No. 1, 8@9; No. 2's, 5@6 per lb.; lug boxes, 2.00@2.50; best packed boxes, 3.25@3.50.

Persimmons, lb., 9@12.

Pineapples, lb., 19@20.

Pomegranates, lb., 6½@8.

Quinces: Local lug, 1.00@1.25; lb., 4@5. 6.25@6.50; loose, 5.00; local, packed, 3.50@4.00; best, 4.00@5.00; loose, 3.00@3.50.

Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1, small ½ lb.

Lemons: Fancy packed, 6.25@6.50; loose, 5.00. Local: Packed, 3.50@4.00; best, 4.00@5.00; loose, 3.00@3.50.

Oranges: Valencias, medium fancy, 4.75@5.50; best brands, 5.50@5.75; local pack, 2.50@3.00.

Grapefruit: Local stock, mostly 5.25@5.50; fancy, 64's-80's mostly 6.00@6.50; 46's and 96's, 4.50@5.00; choice, 2.50 up; seedlings, 4.50@5.00.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.

No. 2, 26.

Diamond Brand Buds, 34.

Golden State Buds, 34.

1918 No. 1 price was 28; fancy budded 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14½; baby, 13.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	21.00@24.00
Barley	17.00@22.00
Alfalfa	20.00@25.00
Fertilizer Bean Straw	9.00@11.00
Barley Straw	9.00@11.00

GRAIN AND FEEDS

Price local grain exchange, September 24:

Oats, Red, Rustproof, 3.17½.

Barley, 3.25.

Corn, Yellow, 3.05@3.12½; White, 3.11¼.

Egyptian, 3.35.

Kafir, Eastern, 2.90.

Feterita, 3.20.

Alfalfa molasses, 30.00.

Alfalfa meal, 29.00.

Cotton seed meal and cake, 65.00.

Eastern Milo, 2.64@2.66¼.

Wheat, field run, price to retailers per cwt., 4.00; recleaned, 4.75 f. o. b. cars U. S. Grain Corp. Sonora, 2.20 per bu.

San Francisco Markets

San Francisco, November 4, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	66½
Firsts	Nominal

Prices extras last week and year ago:

Oct.	28	29	30	31	Nov. 1	3
'19 ...	66	65½	65½	65½	65½	66½
'18 ...	60	60	60	..	60	..

Rcts., wk. ending Nov. 3, 2,610 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	34
Cal. Y. A.	36½
Ore. Triplets	34
Jack, full cream	33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	89
Extras, Pullets	68½
Undersized	64

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago

Oct.	28	29	30	31	Nov. 1	3	89
'19 ...	86½	84	86½	87½	87½	89	
'18 ...	88	88	88	..	86½	..	

Rcts., wk. ending Nov. 3, 173,130 dozen.

POULTRY

Wholesale prices are:

Hens, 32; Leghorn, 30@32; colored, 35@36; roosters, young, 30@32; old, 20@22; broilers, 42@43; fryers, 33@34; turkeys, live, broiler, 40@45; old, 38@40; turkeys dressed, young, 45@47; old, 45; geese, 23@25; ducks, Indian Runner, 18@20; Pekin, 24@26; squabs, 50@60.

Belgian hares, live, 16@17; Jack Rabbits, doz., 1.50@3.50.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass stters, No. 1, weighing 1,000 to 1,200 lbs., 10½@11; do, 1,200 to 1,400 lbs., 10@10½; do, second quality, 8½@9; do, thin, 6½@7½.

Cows and heifers: No. 1, 8½@9; second quality, 7@7½; common to thin, 4½@6.

Calves: Light weight, 11; medium, 10; heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 9@9½; ewes, 6½@7.

Hogs: Hard, grain fed, 100 to 225 lbs., 14; do. 225 to 300 lbs., 13½; 300 to 400 lbs., 12½.

Moran & Co.'s livestock market delivered and weighed off cars at their plant in South San Francisco:

Cattle: Good grass steers, 1,000 to 1,200 lbs. and over, 9½@10; good heifers, 1,600 and over, 8½@9; good cows, 1,000 and over, 8@8½; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs: Top packer hogs, hard and well finished, 150 to 225 lbs., 13; 250 to 300 lbs., 12; over 300 lbs., 11½. Usual dock and pricc discounts for other weights and kinds.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs., Rivers, fancy, 2.50@2.85; choice, 2.50@2.75; sweets, 3½@4 lb.

Carloads, Stockton: Demand and movement good, market firm. Quality and condition generally good. Carloads f. o. b. usual terms, 100 lbs. sacked, Burbanks, fancy, 2.65@2.75.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 4.00@4.25; choice, 3.75@4.00; Yellow, 3.75@4.00; Whites, 3.00@3.25; Garlic, lb., 18@20.

Carloads, Stockton: Demand and movement good, market firm. Quality and condition generally good. Carloads f. o. b. usual terms, 100 lb. sacks, Australian Browns, 4.00@4.10; Yellow varieties, 3.75@4.00; White Globes, supplies light, 3.50@3.60.

VEGETABLES

Wholesale selling price:

Beans: String, 12½@15; Lima, 12½@15.

Carrots, per sack, 1.00@1.25.

Caulliflower, doz., 1.25.

Cabbage, doz., 40@45.

Celery, doz., 35@40.

Cucumbers: Per box, 1.00@1.50.

Corn, sack, 2.00@2.25.

Eggplant, southern, fancy, box, 75@1.00.

Lettuce, cr. of 3 doz., 1.25.

Peppers, Bell, lb., 85@1.00; Chili 75.

Peas, lb., 11@18.

Pumpkins, per sack, 1.00@1.25.

Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 1.00@1.25; Bay, 60@1.00 box.

Squash: Summer, cr., 1.25@1.50.

Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:

Apples: Greenings, 1.50@1.75; Bellflowers, 1.50@1.75; Winter Bananas, 2.50@2.75; Newtown Pippins, 2.00@2.25; Jonathans, 2.00@2.25.

Avocados, doz., 5.00@5.50; Cal., doz., 75@1.00.

Bananas, 8@8½.

Cantaloupes: Per crate, 75@1.00; pony crate, 40@50; Casabas, doz., 50@75.

Crandberries, 4.50@5.00 per standard box; barrel, 13.50.

Figs, double or single layer, 1.00@2.00 box.

Grapes: Malaga, 2.00@2.50 per box; Muscats, 2.00@2.50; Tokays, 1.25@2.50; Isabellas, 1.25@1.75 per crate.

Huckleberries, lb., 13@15.

Peaches: Sacramento 1.25@1.50 per crate; 1.00@1.50 per box; Cling, 1.00@1.50 per box.

Pears, box, 1.25@2.00.

Persimmons, box, 1.25@1.50.

Plums, 1.00@2.00.

Prunes: Fancy, 2.50@3.00; choice, 1.00@1.80.

Pineapples, doz., 4.00@5.00.

Pomegranates, 1.50@2.00 box.

Quinces, box, 1.00@1.50.

Raspberries, ch., 11.00@13.00.

Strawberries, ch., 13.00@15.00.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 7.00@7.50, choice, 6.00@6.50; standards, 4.00@4.50. lemonettes, 4.00@4.50; grapefruit, fancy. 6.00@6.50; choice, 4.00@5.00; oranges, fancy, 5.25@5.75; choice, 4.25@4.75; limes. cr., 2.00.

ALMONDS

California Almond Growers Exchange opening prices:

Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HONEY

Jobbing prices: Extracted, Water White, 20@22 per lb.; Light Amber, 15@17; Amber, 13@14.

BEANS, PEAS

Wholesale selling prices:

Beans: Per cental: Small White, 7.25@7.50; Large White, 6.50@6.75; Lima, 14.50; Baby Lima, 13.00; Pink, 6.75@7.00; Cranberry, 7.25@7.50; Blackeye, 6.00@6.50; California Bayos, 6.75@7.00; Mexican Red, 6.00@6.50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 5.75, in bond.

Dried Peas: Old crop, green, lb., 7½@7¾.

HOPS

1919 contracts per lb. around 60@70.

RICE

Prices per 100 lb. bag:

California: Fy., 10.50; ch., 10.25; flour, 5.25.

GRAIN AND FEEDS

Wholesale selling prices:

Oats: Red feed, 3.00@3.05; black, 3.00@3.10 per cental.

Corn: California yellow, 3.40@3.55 cwt., Egyptian, 3.25@3.35; Milo Maize, 3.07½@3.15.

Rye, 3.25@3.35.

Barley, feed, 3.15@3.20; brewing, 3.25@3.30.

Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles Terminals:

	Per Bushel	Per Cental
Hard Wheat—		
No. 1	2.20	3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 1-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.09	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or

smutty wheat will be purchased according to merit.

Mill Feed (per ton): Bran, 43.00@44.00; mill run, 42.00@43.00; Rolled Barley, 52.00 @54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

Under date of November 1, Scott-Magner & Miller says:

Receipts past week 885 tons. As can be readily noted there has been a big drop in the last three weeks, this is caused by the fields having become cleared and the car situation having become more acute. It is almost impossible to get a car at any of the loading points to ship hay to San Francisco. Considerable hay changed hands in the country districts during the past week at advanced prices over anything reported heretofore. The dry weather has caused this trade to improve considerably. Fancy wheat and red oat hay are in good demand, as is also a good grade of stock hay if free from foxtail. There is considerable call for alfalfa. Export trade is practically nominal, owing to the stevedores' strike on the waterfront.

We quote today wholesale prices in carload lots as appear from dealers transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy wheat hay
(light 5-wire bales) .....21.00@23.00
No. 1 Wheat or Wheat and
Oat hay .....18.00@22.00
No. 2 Wheat or Wheat and
Oat hay .....17.00@19.00
Choice Tame Oat hay .....20.00@23.00
Other Tame Oat hay .....17.00@20.00
Wild Oat hay .....16.00@10.00
Barley hay .....16.00@20.00
Alfalfa hay .....18.00@23.00
Stock hay .....13.00@16.00
No. 1 Barley straw, bale .....50@80

Citrus Markets

November 5, 1919.

The citrus shipping year ended Friday night, October 31. It will be noted that the shipments were far more than twice as great as last year. Also while last year ended with practically every Valencia cleaned up this year ends the shipping season with more than 2,200 cars of Valencias still to go forward. In 1917 there were 1,500 cars of Valencias yet to go on November 1.

Shipments Year 1918-19

Southern California: Oranges, 35,436 cars; lemons, 9,441; total, 45,177 cars. Last year: Oranges, 14,346; lemons, 6,197; total, 20,543.

Central California: Oranges, 3,737; lemons, 264; total, 4,001. Last year: Oranges, 2,536; lemons, 115; total, 2,651.

Northern California: Oranges, 256; lemons, 5; total, 261. Last year: Oranges, 203.

Total shipments from all California for year 1918-19: Oranges, 39,429; lemons, 10,010, or a total of all citrus shipments for shipping year, 49,439. Total of all citrus from state for year 1917-18, 23,397. The year 1916-17 all citrus 54,504.

Shipments for year ending October 31, 1916: Southern California, oranges, 31,757; lemons, 6,940; total, 38,697; Central California: Oranges, 5,416; lemons, 69; total, 5,585; Northern California: Oranges, 610; lemons, 1; total for the year, 44,893.

Shipments for the year ending October 31, 1915: Southern California, all citrus fruits, 40,160; Central California, 5,893; Northern, 632; total, 46,685.

Shipments for the year ending October 31, 1914: Southern California all citrus fruits, 41,978; Central California, 5,951; Northern, 409; total, 48,338.

Shipments This Year

Shipments of oranges from Southern California to date since November 1, 1919: Oranges, 230 cars; lemons, 46; total, 276. To same date last season: Oranges, 11; lemons, 94; total, 105.

AT THE AUCTIONS

October 28

New York: 18 or., 4 lem. Val., 3.20@7.70.

St. Louis: 2 or., 1 lem. Val., 4.65@4.70; lem., 4.55@5.15.

October 30

New York: 20 or., 1 lem. Val., 3:30@7.90; lem., 4.75@5.30.

Boston: 8 or., 1 lem. Val., 2.65@7.40; lem., 4.70@5.90.

St. Louis: 2 or. Val., 3.85@4.90.

October 31

New York: 16 or., 3 lem. Val., 2.80@9.25.

Cleveland: 5 Val., 3.75@5.05.

Boston: 6 or. Val., 4.10@7.05.

November 3

New York: 33 or., 6 lem. Val., 2.85@8.00; lem., 4.25@6.50.

Boston: 13 or., 4 lem. Val., 2.90@6.70; lem., 1.25@6.60.

Cleveland: 4 or., 1 lem. Val., 2.40@4.40; lem., 3.95@7.10.

November 4

New York: No sale account election.

Boston: 9 or., 3 lem. Val., 2.95@6.00; lem., 3.55@6.15.

Philadelphia: 5 or., 2 lem. Val., 4.90@10; lem., 3.15@6.30.

St. Louis: 2 Val., 3.85@4.90.

WRONG NUMBER

"Auntie, did you ever get a proposal?"

"Once, dear. A gentleman asked me to marry him over the telephone, but he had the wrong number."

THAT'S RIGHT—ROAST 'EM

Socrates lifted the cup.

"What is this stuff?" he asked.

"Hemlock."

"Oh! that's all right. I thought it was one of those substitutes for coffee."—Cartoons Magazine

BLASTING ALLUVIAL SOILS

Like 'dobe soils, alluvial soils are made up of exceedingly fine particles which readily puddle. In an ordinarily good condition of tilth, however, there is no benefit to be derived from deep loosening by blasting or other treatment, since the drainage, root penetration and other features would be rather harmed than benefited.

Before making a general rule that all alluvial soil should not be blasted, however, it is well to consider two or three conditions which call for just this treatment. For instance, one of the characteristics of the soil is an abundance of organic matter. Should this supply become depleted by careless farming, a series of evils result. The particles puddle, the soil becomes hard and solid, drainage and moisture storage become poor, plant food, even that applied in commercial fertilizer, quickly reverts to insolubie forms, and roots fail to penetrate.

As time passes this condition grows worse instead of better unless some means is found to get into the soii that one original factor which is lacking, the organic matter. Now, if the tight soil is well loosened, and at the same time a heavy-rooted crop is planted, immense quantities of roots are introduced deep into the soil, and further large quantities can be plowed under. Then conditions may be expected to take a turn for the better. The loosening, however, is a vital step. Until it is done roots will not penetrate, owing to the inhospitable conditions prevailing in the undersoil.

Sometimes an alluvial meadow is used for pasture, with the result that it becomes badly tramped and packed. Or a road may be used across land it is later desired to cultivate. The puddled, bricky condition of the undersoil at such points will respond slowly if at all to any treatment till it is first broken up, aerated and fined by blasting.

The productiveness of alluvial soil lies in its natural open, granular condition. Every effort should be bent to keeping it so with proper rotation of crops, and when this is done no blasting will be needed.

EUCALYPTUS FIBER

An Australian who has been working on the matter for 15 years claims to have discovered a process of utilizing eucalyptus bark for commercial purposes. He now has for inspection at his factory near Melbourne, samples said to be equal to the best flax and jute, at but half the cost of those materials. The factory samples shown include twine, binder twine, light and heavy rope, and bagging from which bags for cereals and vegetables may be made. It is said that every particle of the fiber can be used for these purposes, for furniture stuffing, fibrous plaster work, packing refrigeration chambers, etc. It is claimed this product meets the three great demands—staple of good length, strong and durable product, and low cost of manufacture. If so it will prove a great industry as raw material in inexhaustible supply may be had for the harvesting.

MARK FRUIT PACKAGES

Fruit shippers must have a care and see that all packages shipped from one state to another conform to the amendment to the federal food and drug act in giving exact weight and contents. This law has been in force for some three or four years, but during the war many of its provisions were ignored because of fear that the fruit packing industry might be embarrassed by rigid enforcement. The food administration now serves notice that all packages of fruits and vegetables shipped from one state into another must be marked plainly and conspicuously on the outside of the package in terms of net weight or dry measure or numerical count denoting exact contents. Packages such as hampers and crates may be marked showing either net weight or dry measure or numerical count. Barrels should be marked "One U. S. Standard Barrel." Sacks containing vegetables should be plainly marked showing the net weight of contents—preferably in uniform quality.

HOW TO MAKE HONEY AND CARE FOR BEES

The University of California announces a beekeeping short course to be held at the university farm at Davis, November 10-22. The first week will be given to instruction in the art of handling bees and the second week will cover material of special value to commercial honey producers.

The commercial course will be repeated at Fresno, November 24-29; Riverside, December 1-6; San Diego, December 8-13. Beekeepers desiring more information regarding these courses should write Dean of University Farm, Davis.

DISCRIMINATING

Two political candidates were discussing the coming local election.

"What did the audience say when you told them you had never paid a dollar for a vote?" queried one.

"A few cheered, but the majority seemed to lose interest," returned the other.—Harper's Magazine.

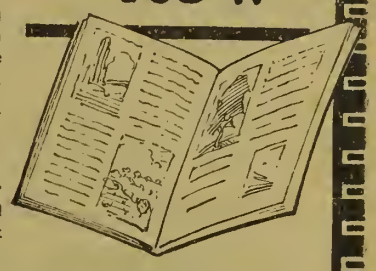
WEATHER REPORT

San Francisco, California, Nov. 1, 1919.

Stations.	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.23	1.94	4.07	60	32
Red Bluff	.00	.98	2.45	72	38
Sacramento	.00	.55	1.47	72	40
San Francisco	.00	.66	1.63	68	48
San Jose	.00	.52	1.31	70	34
Fresno	.00	.68	1.00	68	28
San Luis Obispo	.00	.52	1.85	78	36
Los Angeles	.00	1.84	84	76	50
San Diego	.00	1.31	53	72	46

BE READY
When Planting Time Comes
SEND for OUR CATALOG NOW

We specialize in fruit and nut bearing trees. We know how to grow them and exercise great care to insure stock being received in good condition.



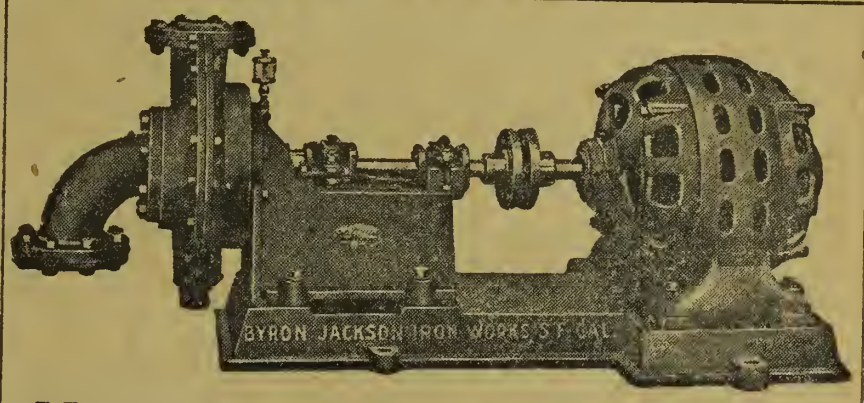
$1,036,336 for Shelled Almonds

The above amount was paid for almonds imported into the United States during April. California fruit growers should plant more almond trees and keep this money at home.

Write to us about best varieties to plant.

"From the Roots Up" Is Our Motto

The Fresno Nursery Co.
P. O. Box 615-C FRESNO, CALIFORNIA



Have You a Producing Ranch?
If not, Why not?
The difference between a "live" and a "dead" Ranch is "Water" and "No Water."
"Byron Jackson" Pumps meet every water condition
Write us giving your water conditions and requirements.
Our New Catalog No. 60-B for the asking.
Byron Jackson Iron Works, Inc.
Los Angeles San Francisco Visalia
Portland Salt Lake

CASH FOR TURKEYS
AND ALL POULTRY

Be fair with yourself. You have used great care and hard work raising your flocks. Why not use the same careful methods in marketing them?

Take no chances but sell direct to the largest exclusive Poultry House on the Pacific Coast, whose responsibility is unquestioned, and be sure to get the highest market price.

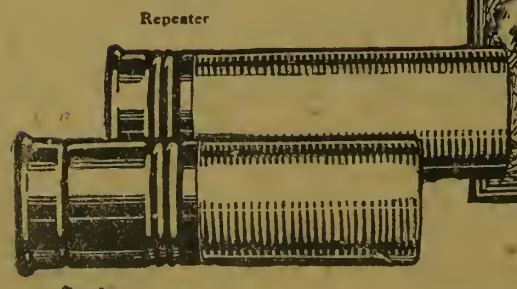
Our reputation is built on fair dealings, honest weights and quick remittances covering a period of 12 years.

References: Citizens' National Bank of Los Angeles, Cal., or your own Banker can tell you who we are.

National Poultry Company, Inc.
608 East Third Street Los Angeles, Cal.

The hard-hitting Winchester pattern is evenly distributed. No game gets through and no game is mutilated

A patchy pattern often means a miss, many times a cripple, and sometimes badly mutilated game



GAME GETTERS

THE steady game-getting qualities of Winchester Loaded Shells have made them the favorite shells of experienced shooters.

Under all weather conditions they play true to form, shooting a strong, even spread of shot. The Winchester waterproofing process prevents swelling from dampness; special lubrication of the paper fibres prevents brittleness and splitting in dry weather.

The secret of the famous Winchester Shot Pattern is in the control of the gas blast from the exploding powder. This in turn depends upon the wadding in the shell.

The Winchester gas control system

The Winchester system of wadding and loading is the result of repeated experiments to determine the most effective control of the gas blast. The base wads of Winchester Shells are constructed to give what is known as progressive combustion to the powder charge. The ignition spreads to the sides, in all directions, as well as forward.

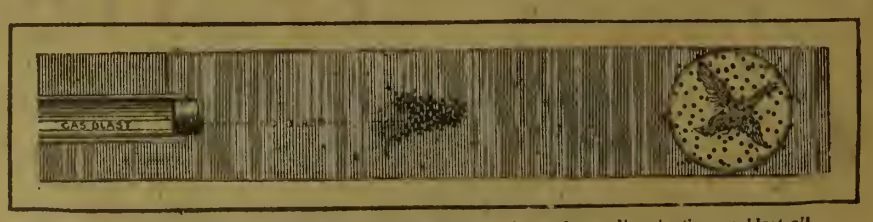
Under the heat and pressure of this progressive combustion, the tough, springy driving wad expands and fills the bore snugly, completely sealing in the gas behind. In being driven through the bore this wad offers just enough resistance to the gas blast to insure complete combustion of every grain of powder, so that the full energy of the whole powder charge is developed at the muzzle. Thus none of the shot charge leaves the gun until it is being driven by the maximum energy and velocity possible from the load.

At the muzzle, the expanded, snug-fitting driving wad is slightly checked by the muzzle choke or constriction, while the shot cluster travels on unbroken by gas blast or wadding, making the hard-hitting uniform pattern for which Winchester Shells are world famous.

Uniform shells. From primer to crimp, Winchester Shells are so balanced in construction as to insure the maximum pattern possible from any load. The broad fish-tail flash from the primer gives even and thorough ignition; the driving wads completely seal in the gas behind the shot; the stiffness of the crimp or turnover at the shell head is varied exactly according to different loads, great care being taken never to stiffen it to such a degree that it offers undue resistance to the powder explosion.

Clean hits and more of them

To insure more hits and cleaner hits in the field or at the traps, be sure your shells are Winchester Leader and Repeater for smokeless; Nublack and New Rival for black powder. Leading hardware and sporting goods dealers in every community carry Winchester arms and ammunition. They will be glad to assist you in determining the particular load best suited to your purpose. Upon request, we will send you, free of charge, our interesting booklet on Winchester Shotguns and Loaded Shells.



The Winchester system of wadding. The wadding expands evenly, sealing in the gas blast all the way to the muzzle, where the wadding is checked by the "choke" or constriction. The shot cluster travels on ahead unbroken. Actual test target 320 pellets out of 431 or 74% of the shot charge (1¼ oz. of 7½ chilled) inside a 30-inch circle at 40 yards.

Winchester Repeating Arms Co., Dept. 307 New Haven, Conn., U. S. A.

WINCHESTER

World Standard Guns and Ammunition

CA

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — November 15, 1919 — No. 20

otato Growers Studying Methods in the Field

It pays to ask questions, and the busiest bunch of questioners we have seen for a long time was photographed in this potato field. Note the row of automobiles at the extreme left of the picture, and these were hardly half of the machines required to carry the potato conference which is described on the third page of this week's Cultivator.

The Car For Rough Roads—New Overland 4 With Three-Point Suspension Springs

BOUNCING, jolting and swaying are replaced by a wonderful new riding comfort—the kind that cushions road bumps; that absorbs shock and vibration.

It is the new riding comfort of Overland 4 with Three-Point Suspension Springs—the greatest improvement to riding since the introduction of pneumatic tires.

These Three-Point Suspension Springs are attached at the ends of a 130-inch frame, giving Overland 4 long wheelbase road steadiness. Yet they preserve the lightness, driving ease and economy of 100-inch wheelbase.

Many other notable advantages result from these springs. Every part of the car has longer life with correspondingly lower upkeep cost because shielded from constant road blows. Tires have greater mileage. Light weight effects economy in fuel and oil.

Overland 4 is a sturdy, serviceable car of highest quality as well as handsome design and attractive appearance. Equipment is complete from Auto-Lite Starting and Lighting to Demountable Rims.

Have the Overland dealer show you this remarkable car. Ask for Booklet. Overland 4 Touring, $845; Roadster $845; Coupe, $1325; Sedan, $1375. Prices f. o. b. Toledo.

WILLYS-OVERLAND INC., TOLEDO, OHIO

Sedans, Coupes, Touring Cars and Roadsters. Prices Subject to Change Without Notice.

Willys-Overland, Limited, Toronto, Canada

California Cultivator

Vol. LIII, No. 20 | Los Angeles, November 15, 1919 | One Dollar Yearly

California Will Grow More and Better Potatoes

Editorial Correspondence

THE CULTIVATOR has received from Genasci Farm a letter dated November 1 which refers to this as a banner year for potatoes in Willow Valley, Nevada County. And Nevada County is one of California's banner producers when it comes to average yield per acre, 235 bushels. The Statistical Number of the Monthly Bulletin, issued by the former state board of horticulture, gives the average potato yield for various counties of California as from 85 to 300 bushels per acre, most counties ranging around 130 to 150 bushels. Our Nevada County subscriber gives as his production from some hills 30 to 38 pounds, or an average of 400 sacks per acre. Presumably these were selected hills but they indicate wonderful producing capacity. Unfortunately that county has little more than 200 acres in a normal year. We hope she will produce more during the coming year, which will be, we predict. California's greatest potato producing year.

Our biggest producing potato county is San Joaquin with 25,000 acres. This has a long lead over all other counties of the state. The next two in line are Contra Costa and Los Angeles, each with 8,000 acres. Los Angeles County's average is only 130 bushels. If we may be pardoned for making another prediction, this average will be materially raised another year. That prediction is made because of an event of last week. It was a potato growers conference arranged for by the Los Angeles County farm bureau. Many years ago a farmers institute conducted by Dr. A. J. Cook was held in an orchard in Riverside. Section after section of the place was visited and different problems taken up on the ground, with explanations and suggestions made by practical men. We referred to this at the time as one of the most helpful institutes ever held in the state. The idea has been carried out many times since, and the conference held by the Los Angeles County farm bureau last week was similar to the old time field institute but vastly more effective and of more practical value. This was in part due to the modern automobile, for the conference, which began at ten o'clock in the morning and extended till after dark, made necessary travel from farm to farm covering a distance of nearly 70 miles.

The first place visited was the Pasadena sewer farm in charge of E. D. MacSweeney. There are something like 150 acres of potatoes planted on this farm, of the White Rose, British Queen and Harvest King varieties. They were nearly ripe though another irrigation will be given, and it will be at least a month before they will be dug. These potatoes were planted on August 24. Other places visited were those of Thomas Lambert and Mr. MacSweeney. These in the El Monte section and before luncheon.

Dip to Prevent Scab

On one of the places visited the potatoes showed a very serious infestation of scab. The seed planted had been apparently perfectly free from the scab so that the planter thought it unnecessary to dip. The field had been in alfalfa and the entire growth was plowed under for green manure only a short time prior to the planting. Other fields which had been treated similarly, that is as to the green manure crop but with dipped seed, showed practically no scab. But the one most important lesson of the day was this, that no matter how clean the seed, dipping in bichloride of mercury solution is the only safe procedure.

Cold Storage Seed

Another question in securing seed for the fall crop is how best to secure 100 per cent germination. Usually the spring crop is used for fall crop seeding. Mr. MacSweeney's place showed one plot planted to cold storage potatoes, that is, the fall potatoes kept through fall and early summer in cold storage and planted. When planted directly from the cold storage the germination was low, but if given two or three weeks exposure in shade and at ordinary temperatures of the air almost perfect germination was secured.

A new disease, or rather a condition, was noted which caused some comment as to whether it might mean reduction of yield. This was a curl leaf or roll of the leaf, but neither insect nor fungus seemed to be present which might be the cause of the trouble. The general opinion was that this might be caused by over-irrigation or some physical condition.

Hand Cutting

The human hand and a good knife seem to be the choice of most potato growers when it comes to cutting seed potatoes. A machine was exhibited at the sewer farm but it was taken from the farm junk pile where it had been relegated, not because it did not work, but while it was little more rapid than the human hand it was otherwise in no sense satisfactory. A good cutter can handle about 20 sacks per day.

To San Fernando Valley

After the various ranches in the El Monte and south Alhambra sections had yielded their lessons the procession of automobiles wended its way to Burbank in the San Fernando Valley. The Women's Club and the ladies of the farm bureau in that section served luncheon.

Discussing the Conference

Adviser Hodgson and Assistant Adviser Gordon planning the next step in the potato conference. Group of inquirers and specialists in background.

Potatoes Good to Eat

Just a word about the luncheon—no criticism intended for it was exceptionally fine. There was fruit and nut salad; there was apple pie and cheese, meat and potato and other solids. But we recall having criticized a banquet held at the Panama-Pacific Exposition when the Swine Breeders of California ate roast mutton and various other products of the ranch, but not a taste did they get of roast pig. The potato growers got little more than a taste of real potato. We want to see our potato growers stage a dinner some time in which the real importance of the potato as a human food may be demonstrated. We would have potato soup, potato bread, potato salad and baked potato. Then there certainly would be a potato pudding—and we know it would be right tasty—and, in addition of course, sweet potato pie.

But short as potatoes were on the menu, they were in very good form in the conference which followed the luncheon.

Methods in the Delta Section

Prof. S. S. Rogers of the University of California was first called upon by Adviser Gordon who acted as conference master. Prof. Rogers gave a plain every day talk on procedure as usually followed by potato planters in the Delta section. The planting there is usually the last of February or first of March and the potatoes are dug in June or July. The time of digging, however, is not governed by the calendar but by the tops. The tops are allowed to lose their dark green, to yellow up a little and later take on a brownish cast. They are not dug until this brown appearance comes.

Handling Seed Potatoes

If they are for seed great care is used not to permit them to burn in the sun. They are not sacked immediately they are dug, but are left for possibly two hours, in any case 30 minutes, in the open sunshine before gathering. They are then placed in long piles in the shade. These are sometimes 15 or 20 feet long. Buckets of cold water are dashed over them and they are covered with a couple of feet of straw which is usually plentiful in the Delta section. Every two or three days the throwing of buckets of water over the entire pile is repeated. They are allowed to remain in these piles ten or 12 days, care being taken that they are not drowned out with too great a quantity of water, but sufficient must be used to maintain a moist, cool condition of the entire pile.

After taking from the pile and drying they are dipped in a corrosive sublimate solution. This dipping should be in the shade, and the seed absolutely must not be placed in the direct rays of the sun after dipping After drying they are cut and at once planted. Seed ripened in this way will give almost 100 per cent stand. but Prof. Rogers hastened to add that the half of the story is not yet told The successful growing of potatoes calls for thorough preparation of the land.

Preparation of the Land

The first step here has to do with irrigation. Put on all the water the land will hold, "then irrigate again." plow and plow deeply; harrow and make a perfect seed bed; plant; give best of culture and harvest a big crop. Only a hint of the details as given by Prof Rogers has here been given, and he summed the whole matter up by saying: "Do not omit one step in this method of work or the entire season's effort may be lost."

Fertilizer Experiments

Adviser Hodgson referred to experimental plots of which the farm adviser's force had oversight during the past year. These plots have been tested with different forms of fertilizers, and the results will later be given out by the bureau. One point made by Mr. Hodgson was in effect that application of superphosphates has shown little returns. Two hundred pounds to the acre of nitrate of soda. however, had shown marked improve-

Continued on Page 654

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture, and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

Vol. LIII No. 20

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Copy for change of advertisements must be in the office on Saturday preceding date of issue. New advertising copy must be in the office on Tuesday preceding date of issue to insure insertion.

Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to livestock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member Associated Farm Papers

Eastern Offices:
Tom D. Costello, Steger Building, Chicago, Ill.
S. E. Leith, Fifth Avenue Building, New York
C. A. Cour, Globe Bldg., St. Louis, Mo.

Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday Nov. 15, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The most practical answer to practical questions is given in the field by the soil and by the crops. The cover photograph shows potato growers asking these practical questions. An entire day was given by them to visiting from field to field. Answers to their questions were given by soil and crop and hy experts from our state university and elsewhere, and these answers will be exemplified in the crops gathered a year later. It appears now that California will produce its banner potato crop in 1920. This scene was taken on the farm belonging to the city of Pasadena, where there are growing at the present time over 150 acres of potatoes.

INCREASE THE LIMIT

There is an effort being made to correct a defect in the federal farm loan act. This is the provision which limits the maximum loan to $10,000. It is hoped to increase this to $25,000. We believe the reason for establishing the $10,000 limit at first was that the measure was intended to benefit the small farmer, but in these days of the 50 cent dollar a $10,000 farm deal is not a fair limit to place upon a class from which so much is expected. If the farmer is expected to produce more and lower the cost of living, lower the cost of his money and increase his opportunity. $25,000 is none too much.

AND SON

The Cultivator carries advertising for livestock breeders—especially we recall advertisements of swine breeders—with name of advertiser ending in "& Son." In one case we have in mind, the "Sou," in another, the "Sons," are graduates of our state agricultural schools. It seems to us that this is a common sense recognition of the euergy and ability of the youngster who has finished school and is ready to enter life. He has been made a part of the firm; he has an interest. Give him a responsihility and a name, and if he has any initiative and pep he will make good.

Give the boy a chance.

STEADY THE BOAT

Chas. S. Barrett, one of the representatives at the industrial conference and president of the Farmers Union, has issued an appeal to farmers to awake to the peril which confronts our nation at this moment. The industrial conference failed to accomplish any concrete thing in adjusting the differences between lahor and capital. The farming interests were represented in that conference, hut only in name. Meantime the lahor question continues a serious one, and somebody is rocking the boat. Open threats of revoiution are made. In New York right under the nose of the authorities the Boishevists hold meetings in which they display the red flag. They sing songs in which they laud revolt while they in concert ridicule and execrate the American flag.

In war or in peace, when trouble comes, the farmer is appealed to to steady the hoat, for he is known as the great stahiiizer, the nation's baiance wheel. He began by carrying his rifle as he followed the plow; in every emergency since he has been appealed to for help, and today, 40,000,000 strong, he is asked to take a controling hand in the affairs of the nation. Mr. Barrett voices this appeal:

"We are asking farmers to rise in their inteliectual and moral might. We are asking them to take their rightful place in the nation. We are asking them to recognize the fact that collectively their power for good is irresistible and we know that their power for evii will never be exercised. They are imbued with justice, inspired by lofty patriotism."

$60 A HUNDRED

Never in the history of California until this year have peach trees commanded $600 a thousand. The demand will be great. The supply is exceedingly short, longer in this state than in most others; still there is a shortage which will make it necessary for the intending planter to get busy if he wants to be sure of stock for the coming planting season.

Apricot trees are not quite so high yet, but almost, and the suppiy is very limited. Aimonds, prunes, pears—all along the line there is shortage.

The price which fruit has commanded this season is one of the causes of the increased demand, and war labor conditions are one cause of the shortage of trees. The wise farmer is scratching his head and asking how long will the demand for fruits continue and can he afford 60 cents for a peach tree.

The Cultivator is not a prophet, but on the general principle of advancement and having faith in the future we would say: "Equip, increase efficiency, reduce labor expense so far as possihle; produce to the limit."

We say this in face of the fact that we recently saw this statement, or practically this, so far as we can remember: "Money is cheap now; huy money with products; hold until the dollar returns to its fuli vaiue; then buy the wherewith to produce more." This may sound logical, hut the world was never advanced by such a doctrine. Besides, "when will the dollar return to full value?" We don't know.

THE FARMER GETS THE BLAME

About January 1919, congress started various and sundry investigations with the object in view of trimming H. C. L. They appointed various committees and suh-committees and are working hard and faithfully, yet H. C. L. continues to rise—AND THE FARMER GETS THE BLAME.

January hogs sold in Chicago around $22.00 per hundred. Today they are seiling from 25 to 30 per cent lower. yet hacon refuses to be coaxed off the top shelf—AND THE FARMER GETS THE BLAME.

Cattle bring the farmer about 75 per cent of the price they did in January, and the packers say they cannot sell the hides. Yesterday daily papers carried a news item stating shoes are to be $1 per pair higher —AND THE FARMER GETS THE BLAME.

Congres passed a law fixing the price of 1919 wheat at $2.26 per bushel—not to benefit the farmer but to keep the speculator from putting up the price of flour. Recently the newspapers announced an advance of one cent per loaf in San Francisco—AND THE FARMER GETS THE BLAME.

The price for wool for 1919 was fixed at 68 cents per pound, hut by the time it goes to the mill it costs $1.80 per pound—AND THE FARMER GETS THE BLAME.

We might go on down the line "From Soup to Nuts" and the answer would always be the same—THE FARMER GETS THE BLAME.

TRUCKS—ROADS

Trucks are constantly becoming a greater factor in the transportation of farm products, in fact so great that road builders are considering the necessity of protecting roads from overloaded heavy weight trucks. Some counties have already made most stringent regulations which have prevented fullest utiiization of the highways. Perhaps some of these regulations are not so wisely considered as they might he, but it goes without saying that we must have some regulations or else the foundation of our roads must he constructed along other lines than at present. Truck manufacturers have taken pride in advertising the capacity of their trucks and making it plain that the truck will stand up under heavier weights—ail of which is found to be true, but these extreme loads are cailing immediate attention to regulation.

The California Taxpayers Journal recently referred to investigations of R. M. Martin, Sacramento County Highway Engineer. This report shows that the use of trucks is advancing very rapidly. In 1917, 128,157 motor trucks were built. In 1918, 227,250 trucks were sold, and the production for the present year is estimated at 327,930. The trucks huilt this year will have a total tonnage capacity of 550,000 tons. Two hundred and seventy-one thousand, or 83 per cent, will be of the two ton size and less, and their capacity will be ahout 59½ per cent of the total truck capacity to he built. Trucks from two to four tons capacity will constitute 11 per cent of the numher, and 21 per cent of the total capacity. Trucks of five tons will constitute five per cent of the numher buiit and 16 per cent of the total capacity. Trucks to carry more than five tons will constitute one per cent of the number huilt and include only three per cent of the total capacity.

Farmers with iarge amounts of produce to move to market may regret to see rigid restrictions made, hut for their own preservation it will he best that reason prevail and that some regulation be made.

EVERYBODY RIDES

It is said that the seating capacity of the automobiles of the United States is 30,000,000 while the total seating capacity of the 55,705 railroad cars is but iittie more than 3,500,000. In war or in peace the auto has become our greatest force.

ARTIST FARMERS

While at the Southern California Fair at Riverside we saw a wonderful display of richiy colored apples from the foothill section of San Bernardino County. They were the kind of fruit of which there has never been sufficient produced to giut any market in the world. It is the kind of fruit for which people will deny themselves other necessities in order to have more. Two men were talking regarding this same exhibit. One of them remarked, "Only an artist can produce such fruit."

BRITISH LIFT THE BAN

As a matter of self protection Britain had placed an embargo on American fruits, or rather on the importation of all fruits for a period after the war. This embargo has finally been lifted and dried fruits may now be shipped to that country. This will make an immediate outlet for dried apricots and peaches, which it is expected will clear the market of any surplus.

AIRPLANE IN AGRICULTURE

The use of the airpiane in agriculture is increasing and airplane service is now a continuous performance over the rice fields of the Sacramento Valley. This is not for the purpose of discovering insect pest extension, as was the case with the boll weevil in the cotton fields, but with the intent of preventing depredations of wiid ducks. It proves effective but rather expensive, and airpiane construction has not yet arrived at a point of perfect safety. One of the Texas cotton patroi recently dropped to his death in the performance of his duty.

STOPPING BOLL WEEVIL

Arizona cotton growers are taking keen interest in a campaign to uproot and totaiiy eradicate the wild cotton which grows in the foothill canyons of the Santa Cataiina mountains near Tucson. This wild cotton is known to harhor the boll weevil and afford it opportunity to spread. The cotton industry is becoming one of Arizona's most important. The state entomologist is not supplied with sufficient funds to make the campaign effective, so individuai cotton growers, as well as supervisors of various counties, are uniting in voiuntary suhscriptions or appropriations to strengthen the arm of the state official. Arizona has learned the lesson of losses which may result from a hit of neglect in pest controi, and she has determined that the boil weevil shall have no welcome within her borders

First California International Livestock Show

By R. P. Royce

THERE is slight doubt of the truth that great institutions develop from small beginnings but such development requires time, and characteristic of the California spirit the promoters of the California International Livestock Show decided to take time by the forelock and stage the initial show on a scale seldom reached by similar shows of more maturity.

Aside from the attendance, there wasn't anything small about the San Francisco show. The extent, completeness and quality was nothing short of a real surprise, and visitors, especially those from the East, and there were many of them, found it difficult to realize that the show was the first of its kind. It was so well conceived, so balanced and so finished that it had all the earmarks of the older and larger livestock shows of the Middle West. It was not the greatest or largest livestock show ever held, but, as one distinguished Eastern visitor put it, "it was as large as it needed to be."

In allotting credit for the success of the show, the business interests of San Francisco who made the show possible by liberal financial backing, the breeders who made the show a fact by sending their herds and flocks, and Gordon H. True, the manager, and his assistants, who worked tirelessly for months, can lay claim to all credit.

The show was held in the California building on the P. P. I. E. grounds, and the fact that it was necessary to provide outside accommodations serves best to indicate the proportions of the show. The building, which by the way is being permitted to fall into a sad state of disrepair, was remodeled to suit the requirements of the show. A large arena for showing and judging, with a ring side seating capacity of over 5,000, was constructed in the east wing. The horse, cattle, sheep and swine stalls and pens were built in the main room. Other rooms contained the poultry and rabbit shows. Still others were used to house the varied commercial exhibits and the exhibits of the different organizations having to do with agriculture and animal husbandry. And in passing it may be said that the support tendered the show by the different organizations such as the college of agriculture, the department of agriculture, the Milk Producers' Association, the Dairy Council and others went far toward making the show a real educational institution.

And that is what the show is planned to be—an educational institution. It is not a money making proposition for San Francisco, it does not exist simply for the pleasure and profit of the breeders or for the entertainment of the San Francisco public, but it was planned to encourage the wider use of better livestock on the ranges and ranches of California. That the show did serve such a purpose well or that it will continue to there is not the slightest doubt. To date there has been no more effective agency developed calculated to hasten the general adoption of better livestock practices than the California International Livestock Show.

Beyond a doubt the outstanding feature of the show was the surprising quality found in all the classes and the extensive entries in the carload classes.

Class after class appeared in the arena that would do credit to any show and in a number of classes the quality ran so high as to bring forth enthusiastic appreciation from the judges, several of whom declared they had seen nothing better at any show this year. For instance, not to cite many examples, the class of aged Holstein cows was declared to be a stronger show than seen at the National Dairy Show and the fat classes were headed by a cross bred heifer, raised and shown by the University of California that is rated as perhaps the most remarkable seen at any American show. In referring to this heifer the judge remarked that he had never seen her equal and believed that she could win in any show ring.

With such quality produced in California, with the enthusiasm for better livestock that exists throughout the state and the inspiration born at this show, California livestock interests can view the future with the highest satisfaction and confidence.

Other features of the show that added much to its success were the meetings of the various livestock associations for the discussion of the problems affecting the industry and apparent broad-guaged appreciation of the common interest the show held for all.

The one big question asked by everyone during the week was, "Will the show be made permanent?" The Cultivator feels that there is just one possible answer—it will be made a permanent show. As to the ways and means for putting the show on a permanent basis, we do not speak with a definite notion, but there will be found a way. It is inevitable and logical that there will be an annual livestock show at San Francisco. If the backers of the first show fail to appreciate the importance of establishing such a show others will not. If San Francisco business men fail to catch the vision, then the livestock interests of the state will do for San Francisco what she fails to do for herself. San Francisco is great, not because of San Francisco, but because of the agricultural resources back of her. Any show held there will not be a San Francisco show, but will be a California show, and some way the right organization of wide-visioned, broad-guaged men will be found who will put the show across. In this connection it might be well to suggest that inasmuch as it requires the cooperation of livestock breeders to make such a show possible it might be well to give those interests a wider representation in the management. If such a plan was adopted it is certain that a more successful show could be held than otherwise. The livestock industry is a business peculiar to itself and a city business man rarely has the correct viewpoint.

If there were any rough places in the first show, they were small compared to the many and great obstacles that the management had to overcome. However, there was one very serious feature of the show that must be corrected before another year, if the 1920 show is held at the same location. Reference is made to the unsatisfactory transportation service to the show.

A feature of the show that proved one of the greatest attractions was the horse show held each night and Wednesday and Saturday afternoon. Astonishingly large classes — a few contained as many as 34 entries—were the rule.

All in all the first California International Livestock Show was above all expectations. It was a credit to every factor participating and in a most convincing manner pointed to a brilliant future for California and the Pacific Coast.

THE BEEF CATTLE

The best showing of beef cattle ever made in California best describes the showing made by the Shorthorns, Herefords and Aberdeen-Angus. Not only were the breeding classes the strongest ever seen in a California show ring, but the classes for fat stuff, both single and carload classes, were far ahead of any former show. The showing made in this division served to impress those not familiar with California conditions or the rapid progress made during the last few years, with the remarkable future this state is certain to attain as a breeding ground for the best beef cattle produced.

While the Shorthorn interests staged the larger show in the breeding classes, the Hereford camp pointed with pride and enthusiasm to the fact that, with one exception, the carload classes were Herefords, and in total number overshadowed all other breeds.

Each of the judges and many of the visitors from the East admitted their surprise at the quality of the show and stated that many of the classes were equal to those seen at the larger shows.

The Shorthorns

The show of Shorthorns was conceded by all to be the strongest yet made in this state. Eight of the top herds of the state furnished practically all of the competition, the herd of William Henn of Kansas City showing only in the bull classes. Four of the herds made their first show of the season and succeeded in changing the ratings of the herds that have been seen at the earlier shows.

Three aged bulls started the judging program on Tuesday. Hallwood Flash held his accustomed place at the head of his class but met a new contender in Crescent Dale, shown by H. M. Elberg. The latter bull was shown in excellent condition and is one of the smoothest, thickest bulls in the state, with a hide that handles like a glove, but he lacked the scale of the bull ahead and the judge faulted him somewhat on his head. Henn was third with Cumberland's Goods.

The two year old class was one looked forward to by Shortborn interests as this class brought out for the first time Gainsford Matchless, recently installed as one of the herd bulls in the Caledonia herd. Gainsford Matchless towered above his class. His extreme scale, his attractive front and head of character, his rare quality and thickness, his width and depth made him a marked bull from the first and there was slight question that he would be declared champion. Barring a tendency toward an easiness of top and a flank that needs to be let down a trifle the Caledonia bull can be rated one of the great bulls of the West. Pacheco Marshall stood second over Matchless Elite.

The senior yearling bulls staged one of the hottest fights of the show and caused the judge no little thinking. Roselawn Champion, junior champion at the 1918 state fair, showed for the first time against Bashan Augusta, junior champion at the 1919 state fair and the 1918 and 1919 Los Angeles shows. Both are whites and both are top bulls. The former is a massive, wide, deep youngster carrying considerably more condition than the Dibblee entry, but the judge preferred the head of the latter coupled with a wee bit stronger top and better handling, and despite the fact that he was worried as to the serviceability of the underpinning sent the Dibblee bull to the top. Dalmeny Count, shown by Pacheco, was placed third.

The five junior yearlings were led by a very attractive roan calf from the Miller herd. This youngster with a good head, level lines and even balance, only lacked condition to have been a strong contender for the junior championship. A stall mate, the white Orden's Sultan, was second over Cumberland's Gloster, shown by Bond. The Missouri calf, Lord Julian's Type, was fourth and Ormondale Radium was fifth.

Miller had things pretty much his own way with his two senior calves by Secret Stamp, taking first and second with Dibblee, Glide and Pacheco filling out the class as named.

The university calf, a low set sappy youngster, won over three other good juniors.

For the first time this season, Spicy Lady, owned by Glide, had competition in the aged cow class, but her sweet character, levelness, swoothness and quality won for her over the Ormondale entry.

The two year olds yielded top honors to Little Sweetheart, the sensational Glide heifer. In placing this class the judge paid the winner the compliment of wishing to see him line up with the two top two year olds of the East. Meadow View Village Girl fell handily into second place by virtue of her sweeter head, neater horn and smoother covering than Pacheco Lass 118th, whose scale carried her above the attractive Elberg entry.

The senior yearlings stood practically the same as at former shows, the light roan King's Countess standing above the three from the Dibblee herd.

Next to the senior yearling bull class, interest centered in the rating of the eight junior yearling heifers Rosie Mayflower, that recently sold for $2,200, defeated three daughters of Golden Goods, one a full sister to the grand champion. Glide was fifth.

While Pacheco held her usual place at the top in a class of nine seniors of very high order, Pacheco Doris won the junior class for Pacheco.

A feature of the Shorthorn show were the group classes. Never before in this state have as many high class herds made entries in the breeders classes. Two aged herds, five calf herds and six entries in the get of

Continued on Page 660.

Agricultural News Notes of the Pacific Coast

Northern California

Fresh eggs sold last week in San Francisco for $1 a dozen.

Lincoln, Placer County, shipped 18 cars of oranges this season.

The price paid for hops at Santa Rosa last week was 85 cents.

Yolo County will plant walnut trees along its 175 miles of improved highway.

Rice in Colusa and Glenn Counties is bringing $6.25, with extra good at $6.35.

Pleasanton, Alameda County, shipped 150 cars of beets to November 1.

No more grapes may be shipped east in box cars, owing to cold weather.

Oroville, Butte County, olive growers have disposed of their crop at $200 a ton.

Six cars of almonds, valued at $44,000, were recently shipped from Chico, Butte County.

Carloads of northern grapes sold in eastern markets last week from $2,500 to $3,500 each.

There are 200,000 bags of rice piled in the fields of Colusa County because of car shortage.

The celery acreage of Northern California is 3,200 acres, of which 3,000 are in the delta district.

Celery from the Walnut Grove district in Sacramento County is now going east in carload lots.

Shasta County supervisors have limited to ten tons the loads that may pass over wooden bridges.

J. C. Kelley of Livermore, Alameda County, sold 1,000 breeding ewes last week for $13 and $14 a head.

The output of the Oakdale Almond Growers Association in Stanislaus County was 13 carloads of nuts.

Northern California citrus shipments for this season were 244 cars of oranges and four cars of lemons.

Near Meridian, Sutter County, a 210 acre rice field averaged 61 sacks to the acre, nearly double the usual yield.

Up to November 1, the deciduous fruit shipments of the state totaled 25,091 cars, 2,000 more than on same date 1918.

Sacramento reports that the total deciduous fruits shipped eastward to date represent a value of more than $25,000,000.

The Schuckl cannery at Niles, Alameda County, turned out 3,000,000 cans of fruit the past season, making 125 carloads.

On the Natomas Company's 60,000 acre tract just north of Sacramento this year food crops produced are valued at $4,000,000.

A. B. Caldwell of Soulsbyville, Tuolumne County, has Winesap apple trees over 50 years old from which he picked 25 boxes to the tree.

Truckmen are quitting the northern rice fields rather than pay the state tax of $20 a ton on the capacity of their trucks. A truck shortage has resulted.

The highest contract price offered for the 1920 hop crop in the Sacramento Valley is 42 cents; three year contracts are offered at 34 cents a pound.

Central California

Porterville reports a labor surplus but orange picking may absorb it.

Fresno reports there is still a marked shortage of layer raisins.

The Bruml fig orchard at Cercs, Stanislaus County, sold for $1,000 an acre.

The Sierra Vista ranch near Delano, Kern County, sold last week for $700,000.

The first soldier settlement lands will be 8,000 acres near Delhi in Merced County.

Salinas will build a fruit and vegetable cannery paid for by popular subscriptions.

A Dinuba banker recently paid a $300 fine for speeding on Tulare County roads.

A trial plat of cotton at Alpaugh in Tulare County gave a net return of $90 an acre.

The first two cars of lemons from Central California left Porterville the last week in October.

The first picking of lemons in the Terra Bella district of Tulare County yielded 108 boxes to the acre.

The railroads have promised the Lodi section grape growers 100 cars a day to the end of the season.

The record price for alfalfa land in Merced County was reached last week when 40 acres sold for $500 an acre.

A shipment of 25,000 pounds of cantaloupe seed from Rockyford, Colorado, has reached Turlock, Merced County.

Independent buyers are offering $2.80 a box for new navels at the packing houses in Porterville, Tulare County.

The record price of $4,073 was received in Boston for a carload of Tokay grapes from Lodi, San Joaquin County.

At a farm auction near Turlock, Merced County, a grade Holstein cow brought $202.50 and eight cows averaged $141.25.

Fumigation of citrus orchards began in Tulare County July 2 and closed October 6, a total of 1887 acres being treated.

An auction sale of 269 hogs was held at Tulare last woek at which the top price was $14.85, an advance over late prices.

M. A. Boulware of Terra Bella, Tulare County, picked 9,400 picking boxes of Valencia oranges from his 40 acre orchard.

H. R. Leek of Alpaugh, Tulare County, harvested 30 tons of honey sorghum to the acre, some of which was 15 feet high.

Governor Stephens has appointed Mrs. Ellabeth Phillips of Porterville, Tulare County, to a place on the state board of education.

Pomegranates from Porterville brought a net return to the grower of more than six cents a pound. They were shipped to Chicago.

Fifty citizens of Earlimart, Tulare County, visited prospective sellers of lands to Japanese and all but one agreed to cancel the deals.

The Turlock and Delhi sections on the border line of Merced and Stanislaus Counties will grow a greatly increased acreage of sweet potatoes next year.

Southern California

There are more than 20,000 hives of bees in Ventura County.

Palo Verde, Imperial County, is to have a $50,000 gypsum mill.

The Anaheim walnut growers will creet a new packing house.

San Jacinto will have a new cannery before next season's fruit crop is ripe.

The Anaheim brewery will be turned into a citrus by-product plant.

Three boys at Santa Ana stole eight sacks of walnuts and sold them for $70.

A San Pedro firm contemplates erecting a fish cannery at the Salton Sea.

There are still 1,000 cars of Valencias to be shipped from Southern California.

San Diego reports 960 acres near the city in cucumbers, peas and winter vegetables.

Yucaipa, San Bernardino County, shipped 50,000 boxes of apples to November 1.

The Imperial County farm bureau is probing the cotton gin war now raging in the valley.

Walnut shipments, by reason of large crop and early rains, are very late this year.

The Coachella Valley will next season grow treble the usual acreage of Bermuda onions.

Cotton at Palo Verde, Imperial County, sold last week for the record price of 45 cents.

Gay Owen of Brawley, Imperial County, sold a hog last week that weighed 815 pounds.

More than 7,575 acres of lettuce have been contracted in the Imperial Valley for this winter.

Brawley growers are planting white bush squash and will protect them from frost with paper covers.

Orange County faces the problem of exterminating the Russian thistle and has a crew of destroyers out.

F. D. Young, government frost specialist, has arrived at Pomona for his third year's observation of frost fighting.

San Diego and Imperial Counties will celebrate the completion of the San Diego and Arizona Railway December 1-6.

After a course at the university farm at Davis, four Los Angeles boys purchased the 160 acre Moran farm at Tipton, Tulare County.

The Kirkpatrick Thompson Company of Riverside has grown 12,500 crates of sweet Spanish onions on the Santa Ana River bottom land.

The California Lima Bean Growers Association has adopted the names "California Seaside Lima Beans" and "Baby Limas" for their output.

There are 750 acres of celery in the El Monte district of Los Angeles County, 175 acres in Orange County, and 100 acres in other districts.

Green vegetables to the number of 276 carloads were shipped East from Southern California the last week in October, also eight cars to local points.

J. P. Hatzfield sold his ten acre Valencia orchard noar Placentia, Orange County, for $50,000, the record price for California. No residence is on the land.

The Coast and General

Fruits shipped from Yakima, Washington, this year totaled 29,400 cars.

Palmetto, Florida, is shipping 25 cars a week of Parson Brown oranges.

Growers in Marion County, Oregon, received over $100,000 for their apples.

Grapefruit is being harvested in the Salt River and Yuma Valleys of Arizona.

Skagit County, Washington, raised $600,000 worth of cabbage seed this year.

Hood River Valley in Oregon shipped over 2,000,000 boxes of apples in 1919.

Manitoba lost about 2,800,000 bushels of potatoes that were frozen in the ground.

The largest walnut orchard in Oregon is 100 acres, owned by Thomas Prince, Dundee.

Ranchers at Bend, Oregon, expect to ship 8,000 sacks of Netted Gem potatoes this season.

A recently organized company will plant 2,000 acres to vegetables near Auburn, Washington.

Forest fires near Lynden, Washington, destroyed many ranch buildings, livestock, machinery, etc.

Stock range conditions in Arizona and New Mexico, owing to heavy rains, are the best in many years.

Because of a shortage of workers the packers of Hood River Valley, Oregon, will conduct a packers school.

Districts in Oregon are short of range feed and hundreds of thousands of sheep have been shipped to winter ranges.

A mysterious disturbance in Diamond Lake, Klamath County, Oregon, killed thousands of fish and discolored the water.

The Hood River, Oregon Canning Company has more than doubled the capacity of its plant to care for next season's run.

John Brown of Sheridan, Oregon, picked 45 tons of loganberries from ten acres of land and sold them for eight cents a pound.

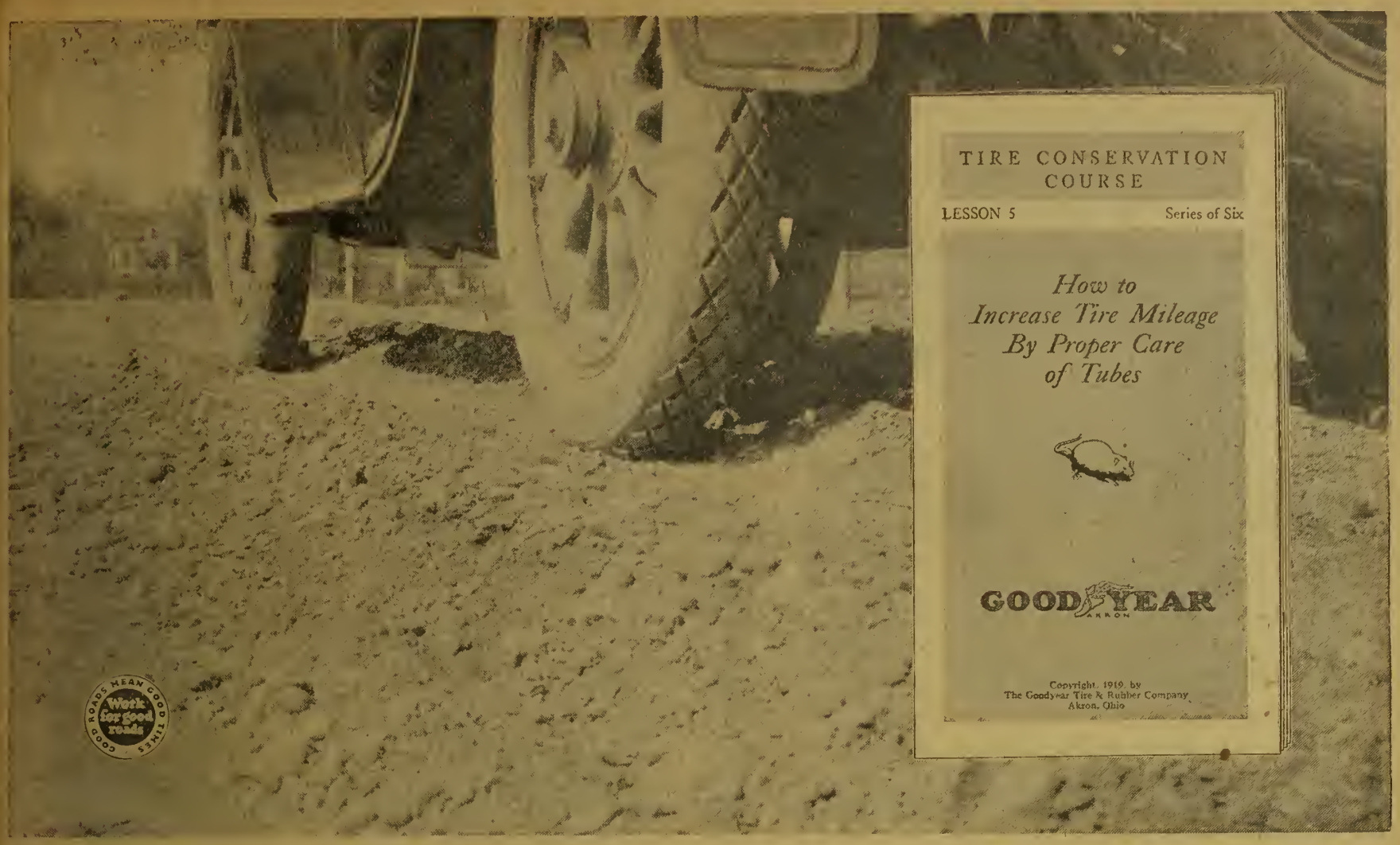
There were 2,169 bales of cotton ginned in Maricopa County, Arizona, to September 25, as against 498 bales for same period last year.

Shipments of oranges from the Salt River Valley of Arizona will begin about November 1. The shipments are expected to total 100 cars for the season.

Twenty years ago the eastern shore of Maryland shipped 200 cars of peaches. The "yellows" gradually reduced the crop until this year but one car was shipped.

Arizona cattle growers along the border of Utah and the cattle growers of southern Utah are said to be making war on the wild horses which are becoming a decided menace to the ranges.

Representatives of the California highway commission met recently at Phoenix with representatives of the Arizona highway commission and business men interested in a through road from San Diego to El Paso, to try to reach a plan agreeable to both state commissions and to the highway commissions of the several counties to be crossed.


TIRE CONSERVATION COURSE
LESSON 5 Series of Six
How to Increase Tire Mileage By Proper Care of Tubes
GOODYEAR
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GOOD ROADS MEAN GOOD TIRES
Work for good roads

A Few Hundred Yards May Cost 10,000 Miles

A MAN with a new car had one of his tires blow out. He didn t have a spare, so he decided to run a few hundred yards to a friend's house. When he got there he discovered that neither the tire nor the tube was worth repairing, for running on the rim had fractured the casing fabric. And the tube was riddled with holes caused by being pinched against the rim. Those few hundred yards of running on the rim probably cost him 10,000 miles—miles that could have been saved by properly caring for the tube. Proper care of tubes saves miles in many other ways—not only in emergencies, but all the time. Ask your Goodyear Service Station, or write to Akron, for Lesson 5 of the Goodyear Con ervation Course—telling how to increase tire mileages by proper care of tubes.

Repairing a tube with the Goodyear Tube Repair Kit

PROPER care of tubes increases by thousands of miles the life of even the best of tires. For whenever a tube fails, the casing is seriously damaged by being run flat.

Only a few hundred yards of such running may utterly spoil the tire; and even if the tube merely has a slow leak the tire will suffer the inevitable injuries due to under-inflation.

Take care of your tubes, if you wish to get the most from your tires.

Tubes inserted in the casing without being properly talced, either stick to the casing and tear because of the lack of French Talc or—when too much of this lubricant is used—they are injured because the talc collects in puddles and hardens.

Tubes must be properly inserted in the casing; otherwise they will be pinched against the rim, or—if the valve stem is at an angle—they may be torn.

Lesson 5 of the Goodyear Conservation Course gives simple but detailed directions for making your tubes serve your tires.

It also tells how tubes can be repaired permanently and in a few minutes with the Goodyear Tube Repair Kit.

Ask your Goodyear Service Station to show you one—and ask also for the other lessons of the Goodyear Conservation Course.

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Akron, Ohio

The tube repaired and ready for talcing

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The New

GRANT SIX

If by any chance you have not yet seen the *new* Grant Six, we suggest that you make a special effort *now* to see this car.

It has taken the country by storm. The factory has been literally flooded with orders since its announcement.

Recognition of the new Grant as a truly fine car, a car much better, much larger, much more powerful—and far more beautiful than people looked for at its price, was instantaneous.

Each mail brings new stories of appreciation. The long low lines of the New Grant Six body with sport model smartness and touring car roominess pleases everybody.

The quick, responsive motor which takes the car as fast as most men dare to go satisfies—thoroughly.

The beautiful body trim and complete equipment exceeds expectations.

The easy handling of the car, its short turning radius and its easy riding qualities over all kinds of roads always provoke favorable comment.

So does the clean cut sturdy chassis with its extra deep frame, its high grade transmission, its big, smooth operating clutch and its large strong axles of highest quality.

Thousands *have* seen it, but, if *you* haven't seen the new Grant Six plan to inspect it at your earliest opportunity.

You will than understand the keen enthusiasm of others for this car.

You will then understand why it is important for you to get your order in months ahead of your actual delivery requirements.

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Write for literature giving full information, and name of nearest Grant Dealer.

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FOR SALE CHEAP

One Thousand

5 Gallon Smudge Pots

in perfect condition **Used only once**

T. J. WALKER

First National Bank Building **San Fernando, California**

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Live Farm Bureau Meeting

THE farm bureau gives evidence of becoming the most potent force in American agriculture. The war gave impetus to the movement, in fact, made it essential that the farm bureau or similar activity should bring the farms in closest touch with its prosecution. The farm bureau fulfilled its mission, but far from ended it, and while its activities have been somewhat decreased because of decreased appropriations, they have been taken up by the individual members and centers and county bureaus as never before.

One of the largest county farm bureaus in the United States is in Los Angeles County, and this is most fitting for Los Angeles County, as shown by the last census, was the greatest crop producing county in the United States. This bureau was one of the last to be organized in California, but its activities have more than justified its organization. Its semi annual meeting was held on the Santa Anita Rancho east of Pasadena on Wednesday of last week. Retiring President Volney H. Craig made report of the work of the delegates in forming a state organization and gave of his impressions as to the opportunity before the national organization which is being formed in Chicago this week. Mr. Craig was elected one of the delegates to this national organization and at last week's county meeting was made county representative in the state organization.

Adviser R. W. Hodgson made his annual report, and the importance of the work is slightly indicated by the fact that members of the staff traveled during the past year over 89,000 miles, mostly by auto. There were spent 1,102 days in field work and 3,416 office calls were answered. He stated that 1,900 farm calls were made and 431 meetings attended. There were 138 regular center meetings held and 153 demonstrations given.

J. B. Vail of San Dimas was elected president. Other officers are: Vice-president, Robt. H. Neely; second vice-president, H. S. Bissell; secretary, W. B. Rosecrans; treasurer, Ralph McNees; directors, A. W. Frye of Hynes, O. W. Maulsby of Whittier, Volney H. Craig of San Fernando, Grant A. Brown of El Monte and George P. Clements of Los Angeles. Mr. Vail presided at the meeting.

In addition to the regular business meeting of the bureau the farm home department, under the direction of Mrs. Jessica Hazard, held a business session, elected officers and discussed matters pertaining to the home.

At noon there was basket luncheon with coffee and doughnuts furnished by the farm bureau. Afterwards there was a livestock judging contest, and some of the classiest animals in California were supplied for this purpose by Mr. Taylor, manager of Mrs. Baldwin's ranch.

Amongst other addresses made was one by Carlyle Thorpe in which the present financial situation and the duty of the farmer was so clearly set forth that we quote:

A PRODUCER LOOKING FORWARD

By Carlyle Thorpe, Secretary-Manager California Walnut Growers Association

I'M GOING to talk to you folks briefly about a calamity that's about to befall this country. We seem to be facing a most serious shortage—not of coal, not of sugar, but of profiteers.

For profiteering the farmer gets the gold watch, the brown derby and the green bicycle. If we believe what we read in the papers or what most city folks tell us, the farmer as compared with the steel trust, the miners' union or the meat packers, makes a Sells-Floto three ring circus look like an indoor meeting of a childless mothers' club.

Still, I say we are facing a shortage of profiteers It hardly seems believable with all the golden opportunities at hand, so few of the city toilers fall for the "back to the soil" idea. But as long as I've started to address this millionaires' club with a weighty topic, maybe we'd better carry on and see if there is no solution for our present dilemma.

In the first place we'll all agree that there is no monopoly on farming. Most anyone who wants to try it, can. There are still millions of acres of good undeveloped land in America only awaiting tilling to make them productive, millions of such acres even here in California. Why, I personally know of some of the finest irrigated bean lands in the state that can be leased on the most favorable crop rental terms with an option to the tenant to buy at any time. Here is an opportunity that requires but little capital, still there are no takers. Thus, any man who is willing to work can easily find a good farming layout; the trouble seems to be that not enough of us care to do real work but on the other hand we are ready and willing to criticize the man who by hard work succeeds.

With the average man the idea is becoming prevalent in this country that he should work shorter hours and receive more money. That is a happy and popular thought with workers, but unfortunately the theory is all wrong. The facts are that a man must work long enough to produce as much as he and his family consume He is just breaking even then. If he expects to get ahead he must produce more than he consumes. The only way we can produce more and at the same time shorten hours of labor is through the employment of labor saving devices. Further inventions along these lines will tend greatly toward shorter hours of labor. This has already been done to a certain extent, so that we may ultimately expect to get on to a seven hour day or possibly a six hour day, but as yet the time for that has not arrived, the contention of the coal miners of this country to the contrary notwithstanding.

To illustrate my point, it has not

A Farm Bureau Annual

Former President Volney H. Craig reporting transactions at the state farm bureau organization meeting and enumerating some of the valuable features hoped for in the national organization. This scene is on Santa Anita Rancho at the time of the annual of the Los Angeles County farm bureau.

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Hardy Northern Grown Trees Give Results

Bartlett Pear
French Prune
Apricot, Apples
Almonds and
All Other
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Albany Oregon

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In This Interesting Contest

TO THE BOY who can think of the most interesting uses for the popular AUTO-WHEEL COASTER, for earning money and for play, we shall award one of our large m dels absolutely FREE. It's a mighty generous prize for a few minutes' work. And the following eleven valuable prizes will be given to those send.ng in the next best uses: **Camera, Camping Tent, Mess Kit, Scout Knife, Flastwing Steering Sled, Compass, Ingersoll Watch, Axe, Bank, Electric Flashlight, Poncho.**

INFORMATION ABOUT CONTEST

1. Any boy or girl not over 15 years may compete.
2. Contest will be judged by three men well-known in the Boy Scout organization.
3. Write to Business Idea Dept., Buffalo Sled Co., for pamphlet explaining the Contest, and colored catalog telling all about Anto-Wheel.
4. At end of letter write names of three Coaster Wagon Dealers in your town. If any carry the Auto-Wheel put an "x" after name.

YOU can do it. Here are a few pointers: The Anto-Wheel is a strong, speedy wagon for work or play. Has roller bearings, steel axles and tires, body of white ash, maple gear. See the Auto-Wheel dealer in your town for ideas.

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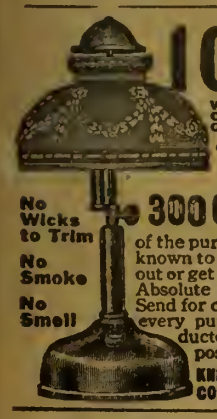

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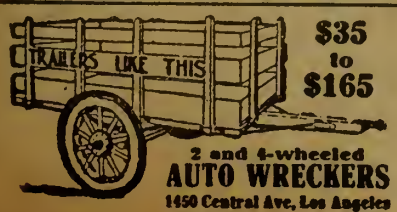

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2 and 4-wheeled AUTO WRECKERS
1450 Central Ave, Los Angeles

been many years since the country's grain was harvested with a scythe. Today the combined harvester, hauled by a tractor, displaces the labor of possibly 100 men. Still those of us operating farms have not a six hour day nor even an eight hour day. When work is to be done it is from daylight to dark, and a full season's labor and expenses may be entirely wiped out by unfortunate climatic conditions. Again, we must risk our season's operations and expenses on market conditions. We occasionally have to sell a bounteous crop at prices that do not return us the actual out of pocket cost of production. I can illustrate this point by telling you of my personal experience during the last two seasons. In 1918 I produced a fine crop of Lima beans on a 250 acre tract and sold them at a fancy price. Everything was rosy. This year on the same tract, through lack of sufficient rain and unfortunate weather conditions, I did not produce enough beans to harvest. I am plowing the whole crop under. Again, many growers of beans were unable to get them to warehouses in shape for delivery last year in time to obtain attractive prices. The market went to pieces and a large percentage of producers hardly received the cost of production for their product. Thus we find that farming is a hazardous business. It entails a lot of hard work and is constantly at the mercy of old Dame Nature and is affected favorably or unfavorably by the general market conditions. So when a producer is able now and then to take a fancy profit he certainly is entitled to it.

If, instead of accusing the farmer of profiteering, a larger percentage of our population would engage in agriculture, a greater production would naturally result and perhaps would slightly lower the level of prices but would also lower the average production cost, which in the end would mean greater prosperity and less agitation.

Over half the wealth of this nation is invested in farming. The value of farm property is over twice that of manufacturing, nearly three times as great as the capital invested in railroads and ten times as great as that invested in mines and quarries. Notwithstanding this the population of the United States is increasing about six per cent faster than the acreage of improved farm lands. If this ratio continues the price of farm products must continue to advance, for each acre of farm lands will be called upon to supply more people.

Again, the population of the United States is increasing at the rate of 21 per cent every ten years while the farm population is increasing at the rate of only six per cent every ten years and in the last analysis this means that the average farmer must produce enough for more people every year. If these conditions continue farm products and the price of farm lands must continue to advance indefinitely. The only way to check this trend is through the development of more acreage and inducing a larger percentage of our population to engage in the farming industry. If something along these lines cannot be accomplished we must eventually adopt a rationing system to prevent certain classes of people consuming more than their share of our farm products, in order to keep others from starving. We will not only see restrictions on the consumption of sugar and other essentials but on all articles which are basically products of the farm, including cotton and woolen goods. We cannot keep on consuming more than we produce. This rationing system may not be necessary for some time to come, but it is bound to develop as time accentuates the scarcity of farm products.

I think there is a solution for our short production difficulties. This solution lies in greater publicity. Public sentiment has always been the strongest factor in our national lives. The coal miners will not win in their strike because public sentiment is against them. The steel strikers have practically lost out for the same reason. If these labor organizations had taken the public into their confidence and through the press advocated the justice of their ideas, if there was any justice to them, there is hardly a

Continued on Page 673.

"Pretty Good Growth"

"You can see for yourselves that they grow better when they're planted in blasted holes. Those trees will be bearing soon *and they'll pay for the work of planting before our neighbors' trees, planted in spade dug holes, have begun to blossom.*

"It's not only easier and better for the trees but good hard business sense to plant orchards with

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Thousands of fruit growers owe their success to the fact that they planted "Fancher Creek" trees.

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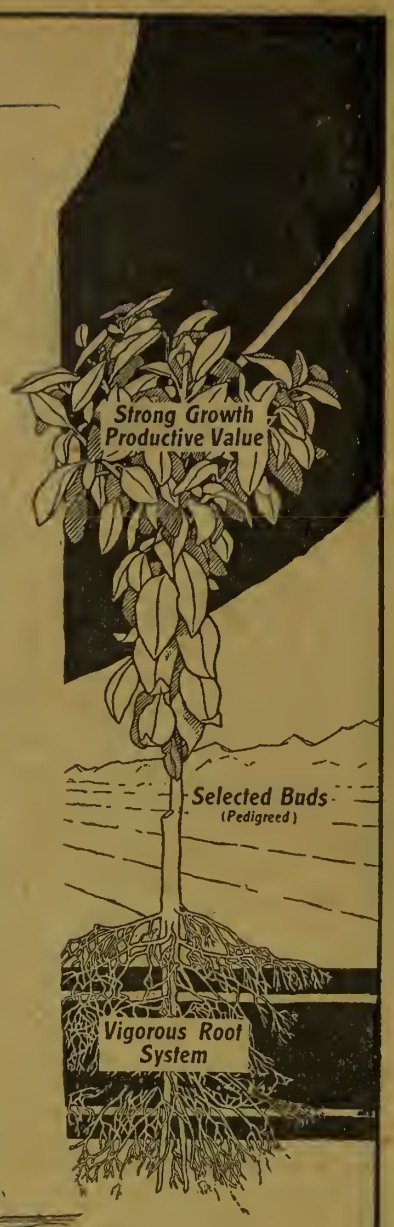

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Curing Olives

HOME cured olives have a quality which is sometimes impossible to secure in those bought on the market. The question continually comes to the Cultivator as to best methods of home curing. There is slight variation in methods from year to year, so at the expense of repetition we give from an article written for the Cultivator last year by Prof. Cruess and printed in full in the issue of November 30. Practical suggestions by Prof. Cruess are:

Choose olives that are black, red, or have at least begun to show some pinkish or light red color. Overripe olives will be soft; underripe olives will be tough and tasteless. Pick them carefully, avoiding bruising. Shallow boxes are better than deep ones.

The olives should be pickled within two or three days after picking. If they are to be held for a week place them in a barrel or large pot and cover with cold water. Change the water daily. If they are to be kept longer than a week, make a brine of six ounces of salt per gallon of water and store the olives in this until they are to be pickled. They will keep several weeks in such a solution.

First Lye

Place olives in stoneware jars, in wooden open barrels or agate ware pots. Under no circumstances should a galvanized or tin container be used; poisoning might result from the solution of tin or zinc.

To make the lye solution first obtain a pound or two of Babbitt's Lye or Greenbank's Lye or Red Seal Lye or any other reliable brand from the grocer. For each gallon of lye solution to be made weigh out three ounces of lye. This corresponds to one pound of lye per five gallons of water. The writer has found it more convenient to make up this quantity rather than to try to weigh out three ounces of lye on the kitchen scale. Three ounces of lye is roughly five level tablespoons of dry granular lye. Use level tablespoon in measuring by this method.

When the lye is well dissolved and well mixed, pour it over the olives, covering them completely. Stir them every half hour in order that the lye may act evenly.

Leave them in the lye until the lye has penetrated about one-sixteenth of an inch into the flesh or until it has "cut" through the skins of all the olives. About once each half hour remove several olives and cut one or two with a sharp knife. The flesh will be turned yellowish or discolored to the depth to which the lye has penetrated. Under ordinary conditions three hours will be sufficient time; but the time will be shorter than this if the weather is hot or the solution is warm; and longer if the solution is cold. The lye should not be allowed to penetrate more than one-half the distance from the skin to the pit; one-fourth the way to the pit is the usual distance. Too deep penetration results in loss of color.

Exposure to Air

When the lye has penetrated pour off the lye solution. The lye may be saved and used for the second treatment. Leave the olives exposed in the air until they have assumed a good black color. Stir them at least twice each day. This can be done by pouring them from one jar or pot to another. Unless they are stirred frequently the color will be spotted. Usually three days will be sufficient time to permit coloring; some olives require less time; others may require four or five days.

Second Lye

When the olives have acquired the desired amount of color, prepare a lye solution of one and a half ounces of lye per gallon, that is one-half pound of lye per five gallons of water. Cover the olives with this solution. If one wishes to be economical with the lye, the lye used for the first treatment of the olives may be returned to them.

Allow the lye to remain upon the olives until the lye has reached the pits of the olives. This can be determined by removing a sample occasionally and cutting it to the pit. The progress of the lye will be evidenced by discoloring of the flesh. It will require about eight hours under ordinary conditions for the lye to reach the pit of the olives. If the lye does not reach the pits the olives will remain bitter; little harm will be done if the lye is left upon the olives several hours after it has reached the pits.

Removal of Lye

When the lye has reached the pits of the olives remove it and cover the olives with cold water. Stir the olives once every two or three hours during the day. Change the water at least twice each day; for example night and morning. Three changes per day will give better results. Continue this process until all of the lye has been removed. This will usually require about six or seven days. By tasting the olives once each day the final disappearance of the lye is easily determined.

Sterilizing

When all of the lye has been removed by the wash water the olives are ready for canning or putting up in jars.

Prepare a brine of five ounces of salt per gallon of water or of one pound of salt per three gallons of water.

Pack the olives into glass jars or wax top cans. Prepare the wash boiler sterilizer by placing a false wooden or wire screen bottom in it, adding three or four inches of water, and heating the water to nearly boiling.

Heat the brine to boiling and fill the jars or cans of olives with the boiling hot brine. Place the jars or cans in the boiler at once and cover them with scalded rubbers and caps. If wax top cans are used, simply place the tin caps on the cans but do not add wax. Heat the water in the boiler to boiling and then continue the boiling for one hour with the lid placed tightly on the boiler.

After one hour at the boiling point remove the jars or cans and seal them at once. If cans are used seal the caps with sealing wax as soon as they are removed from the sterilizer. The lids of Mason and glass top jars are tightened and the jars turned upside down to cool. Economy jars are left in an upright position, the only precaution necessary being to ascertain whether the lids are resting evenly upon the tops.

Storage: Store the olives in a dark closet or wrap the jars in several thicknesses of paper if they are stored in a light room. Light causes the color to fade.

Pickling Green Olives

Picking: Olives of the Sevillano (Queen) variety, because of their large size are preferred for green pickling. However, any variety can be used. The olives should be full size but still hard and green. Avoid bruising in picking.

Lye Treatment: Only one lye treatment is necessary for green olives. Prepare a lye solution of three ounces of lye per gallon of water. Place the olives in any sort of container at hand except one made of galvanized iron or of tin. Wooden containers or stoneware crocks are best.

Leave the lye upon the olives until it has reached the pits. This will usually require about 12 hours' treatment; for example, treatment over night. Cut several olives to be sure that the lye has penetrated to the pits. It will discolor the flesh of the olive to the depth penetrated.

Washing: When the lye has reached the pits place the olives in cold water and discard the lye. Change the water at least twice daily until all of the lye perceptible to the taste has been removed.

One week's washing in this way will usually be sufficient to remove the last trace of lye.

Brining and Fermentation: Prepare a brine consisting of nine ounces of salt per gallon of water. Place the olives in a wooden keg or if this is not on hand place them in glass top fruit jars. Fill the keg or jars with the brine and seal them. The containers should be filled to overflowing

Cletrac

TANK-TYPE TRACTOR

(Formerly known as the Cleveland Tractor)

No "Off Season" for the Cletrac

THERE is no "off season" for the Cletrac. It is a season 'round investment—paying you a steady interest 365 days in the year.

When it is not necessary in the fields, it never need be idle. For it is a master at belt work and knows no equal at dragging dead weight.

Grade with the Cletrac. Haul with the Cletrac. Use it to pull your logs and stone boats. Saw with it. Run the feed mill with it. Let it do *all* the work that you formerly did with your stationary engine and horses.

And then when it comes time for field work again remember that the Cletrac *does far more than merely plow.* It is the one tractor that successfully goes through with the *entire preparation of the seed bed*—plowing, harrowing, planting—*without* sinking in—*without* packing down the soft earth.

No power wasted

The Cletrac runs on metal tracks like a locomotive. No extra power is required to push it *through* the soil. It rides on its tracks *on top of the ground* and consequently most of the power goes *into drawbar pull* where it should go.

This track-laying, tank-type of construction permits the Cletrac to go over uneven ground, soft sandy soil, and even the muck of the Southern rice fields without slipping, sliding or floundering. It permits side hill work ordinarily considered dangerous for tractors.

It is ideal for orchard work

Because of its small size, its short turning radius and its power, the Cletrac has become the standard tractor among orchardists.

The Cletrac operates on a very small amount of distillate, kerosene or gasoline. It does *more* work, *more* days in the year and does it *better, cheaper* and *faster.*

Every Cletrac dealer is a service man. When you buy a Cletrac, you are assured of a service fully in keeping with the excellence of the machine—a service backed by The Cleveland Tractor Company itself—a service that is prompt, courteous, efficient and economical.

Order your Cletrac *now* for prompt delivery. Cash in on it *now.* Have it ready for field work when the time comes.

Write today for a copy of our interesting thirty-two page illustrated booklet "Selecting Your Tractor." It gives you in addition a rich fund of information on every phase of the tractor situation.

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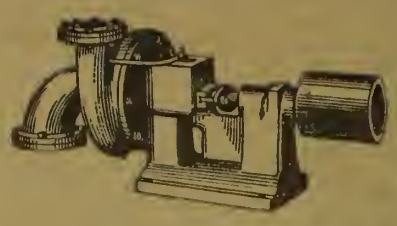
The largest producers of tank-type tractors in the world

End Pump Troubles



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THE "Bean" Universal Pump—belt driven—eliminates pump troubles. It's a twenty-year development, the ultimate in centrifugal design.

Stuffing box troubles are minimized by a perfect water seal. The shaft where it enters the case is ever completely surrounded by a water bath.

The danger of loss of priming is minimized. And you don't have to cinch the packing down so tight that you cut the shaft.

We designed this pump especially to overcome these trouble sources.

Then we added all the other advantages in pumps that our experience of 20 years evolved.

The result is the perfect pump. Don't overlook it in making your selection.

Hundreds of men who have examined all kinds are putting in the "Bean." Let their decision guide you.

(Clip Out and Mail)

Distance to water below surface of ground.....
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If water is to be raised above surface of ground, how high? (Length and size of pipe line).....
Volume of water desired (Gals. per min.).....
(Inches) .....
If you have pit, give width..... length.....
depth.....
H. P. of motor or engine if you have that equipment.....
Give total depth of well.....
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Is well straight and true?.....
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Name .....
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The "Bean" is provided with automatic water balance and an extra heavy outboard bearing which is oversize. It gives insurance against vibration. Belt changes are easily and quickly made.

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before sealing; air is detrimental to the color. In making green pickles we aim to keep the olives green in color; should we have air present or should we expose them to the air they will become gray or brown in color. The changes that give green olives their desirable flavor can only take place in the absence of air. Therefore there are two good reasons for excluding the air.

Store the olives for about two months before use. They will during that time develop a mild acid flavor characteristic of the green olive of commerce. No sterilization is necessary.

If a keg is used the olives should be transferred to bottles or jars after they have reached the proper flavor. Glass top and not Mason jars should be used because the brine and acid will act upon the zinc tops of Mason jars and cause the olives to absorb dangerous amounts of zinc.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tamworth Hogs

To settle an argument will you kindly tell the color of the Tamworth hog; also if it originated from the Duroc-Jersey?—Subscriber, Maxwell.

From "Types and Breeds of Farm Animals" by Plumb we quote:

"The native home of the Tamworth is the counties of Stafford, Leicester, Northampton and Warwick in central England, but notably in Stafford. * * * The ancestry of the Tamworth pig is obscure. Tradition and history refer to a pig of Tamworth type existing early in the last century. Most writers on the pig say but little of this breed and we know almost nothing of its early development. * * * The early type of Tamworth was long of leg and snout, narrow of back and shallow of body, slow to mature, very active and hardy, and usually of a sandy or reddish color."

According to the same authority Duroc-Jerseys or, rather, "the red or sandy colored pig," in America dates back many years. When pigs of this color were first imported is not recorded. The book quoted refers to the Guinea breed, to Berkshires which were sometimes red, to the Portuguese and Spanish Reds, to the Jersey Red, as all affording foundation for the Duroc. While some of these breeds were brought to America as early as 1804, the Jersey Reds do not seem to find a place in authentic history until the National Swine Breeders Convention in 1872. The Duroc Reds were established in Saratoga County, New York, as early as 1823.

Squirrel Poison

Will you please tell me the government formula for poisoning squirrels? Subscriber, Pomona.

The so-called government formula is given in our special pest control number of August 9, 1919. However. for those who have not filed that valuable number we reprint:

Barley (clean grain) 16 quarts; strychnine (powdered alkaloid), 1 ounce; bicarbonate of soda (baking powder), 1 ounce; thin starch paste, ¾ ounce; heavy corn syrup, ¼ pint; glycerin, 1 tablespoon; saccharin, 1-10 ounce. Mix thoroughly 1 ounce powdered strychnine and 1 ounce common baking soda. Sift this into ¾ pint of thin, hot starch paste and stir to a smooth, creamy mass. (The starch paste is made by dissolving 1 heaping tablespoon dry gloss starch in a little cold water which is then added to ¾ pint boiling water; boil and stir constantly until a clear thin paste is formed.) Add ¼ pint heavy corn syrup and 1 tablespoon glycerin and stir thoroughly. Add 1-10 ounce saccharin and stir thoroughly. Pour this mixture over 16 quarts of clean barley and mix well so that each grain is coated.

Resetting Orchard Trees

I want to move some 50 or 60 peach and apricot trees which were planted last February. They will only be moved about 300 feet. Will it be necessary to ball them? Will it set them back much? When is the best time to move them? How old a peach tree would it be practicable to move? When is the best time to prune peach and apricot trees?—Subscriber, Pasadena.

Ordinarily we would much prefer trees grown this past year and sent direct from the nursery, but with this year's scarcity and possible inability to have desired varieties at any price, it might prove advisable to attempt moving these trees. Wait until perfectly dormant, say early in January, then lift carefully, apply water to settle dirt about the roots as soon as possible. The best time to prune peach and apricot trees is late December to the first of March.

Stem End Rot

For the past three years our potatoes have been much affected with a dry rot at the stem. On digging now we find some have just a little dark spot around the steam while in many the whole end is covered with rot. We bought new seed last spring and planted in another field in April but they were no better. They have a fine flavor but there is such a loss.—Subscriber, Dobbins.

Apparently this is a case of stem rot, or sometimes called stem end rot, which is the fusarium or wilt disease. Unfortunately it is very difficult to control and about the only remedy is a long term crop rotation, at least four years rest of the soil from tubers and then a selection of absolutely clean seed. In planting watch every piece of seed to see that there is no indication whatever of this dry decay around the stem end. Where these potatoes have been grown the land should now be planted to crop other than potatoes or tomatoes and in four more years will probably be fitted for growing good healthy potato crop.

Lemon Extract

Is there a method of using lemon or orange peel which will take the place of extract for home use? —Subscriber, Chula Vista.

Lemon extract was one of the cheapest and best flavoring extracts to be had when alcohol was to be secured and when it had not been denatured. The peels were immersed in alcohol which dissolved the oil in the skin and made a perfet flavoring. We do not know whether there is any substitute for alcohol and ask our subscribers who may have experience to give us suggestions.

Warbles

I have a cow that has lumps on her back as big as walnuts. These lumps feel as though some sort of grub might be in them. Can you tell me what the trouble is and what I can do for it?—Subscriber. Van Nuys.

These lumps are caused by warbles. See article on another page of this issue.

Grubs In Lawns

I have a lawn which died out completely, though well watered. I found

that a large number of grubs, such as cut strawberry roots, had eaten off the grass roots, leaving a mass of dead grass and sod about three inches thick, which I could roll up by hand. Is there any remedy for this, as I am making a new seeding?—Subscriber, La Mesa.

These gruhs are the larvae of May beetles or June bugs and it is not advisable to reseed the lawn without first destroying them. As they are but a few inches below the surface, a stirring of the soil and killing of all grubs in sight would help much. A flock of any kind of poultry would be pleased to assist in harvesting the crop. Strawberry growers and others using infested land are forced to practice crop rotation, using crops grubs will not attack. Liming avails little or nothing. It is recommended that bisulphide of carbon or kerosene emulsion be used. The latter is diluted about ten times and poured over the soil before rainfall. If no rains come within a day or two a copious watering should be given to wash the emulsion down. This is used in some states and the Cultivator would be pleased to know if it has been found effective in California.

Oak Root Fungus

In further answer to query as to oak root fungus in Cultivator of October 25. page 549, Prof. Wm. T. Horne of the University of California writes:

I am in receipt of a letter from P. M. Paulson of the San Francisco Sulphur Company saying that one of your subscribers asks certain questions about the oak root fungus. "Is oak root fungus transferred where one is spading around fungus infested trees and later works up soil about a healthy tree? If foots are injured will fungus be transferred by the shovel? Is there any advantage in the control of the oak root fungus by the application of sulphur, carbon bisulphide, or other chemical?"

It is possihle that oak root fungus might be transferred hy spading in affected ground and then in unaffected ground. However, this could only take place if pieces of roots should be transferred with the soil sticking to the spade, since the oak root fungus does not live for long periods of time except in pieces of root or other wood lying in soil. It is possible, of course, that rhizomorphs of the fungus might be transferred in living condition in the soil and with ahundant moisture the fungus might grow out from these and become estahlished in pieces of root or other wood lying in ground in the new situation. If the spade or shovel is reasonahly well cleaned I think the danger of transferring the fungus will he small, since so far as we know no ahundant spore formation takes places in pieces in the ground. There is, of course, the possibility also of the soil sticking to the shoes of the workman and carrying with it pieces of roots or rhizomorphs. I think, however, that with reasonahle precautions this danger is very small. Unfortunately we have never been able to carry out careful experiments on the precise hehavior of rhizomorphs as to how long they live in the soil. It is certain, however, that they are quickly killed hy drying. So far as we know, there is no effect on the fungus by the application of sulphur. Carbon bisulphide may be used to kill the fungus, but our results with it thus far have not heen successful, owing to certain difficulties. Doubtless other chemicals may be used, but we have not made sufficient experiments to have this matter in hand. I think it probable that more can be done in some cases by removing the soil from the main root of tree and cleaning off the affected part of the root as would be done in any sort of tree surgery.

Apricot and Peach Crops

What are the returns from full bearing peach and apricot orchards?—Subscriber, Pasadena.

Leaving out the neglected orchards from which fruit is sometimes sold, the average return for apricots per acre is one ton of dried fruit, or 350 crates of fresh fruit, 30 pounds to the crate. In peaches the yield is about one ton dried or 400 boxes fresh to the acre. The price of course varies, though ton prices are steadier than box prices. The prices during the season just closed were: Apricots, fresh, $60 to $110 a ton; peaches, $60 to $90 a ton, but as high as $115 was paid for some extra choice Phillips and Tuscans by a few canneries.

Ant Poison

The daily papers have published as a news note the fact that sodium arsenite is being effectively used to kill the Argentine ant, and our readers are writing to know how it is used and where procured. The news items are misleading for sodium arsenite is but the killing agent in an ant poison into which several other ingredients enter. This was recently published in the issue of August 9, 1919, but is here reprinted for the benefit of those who did not keep this "pest fighting" number. This poison is also put up by some commercial houses and sells at about 60 cents a pound:

Prepare syrup of 15 pounds granulated sugar, seven pints water, one-fourth ounce tartaric acid (crystallized). Boil for 30 minutes. Allow to cool. Dissolve three-fourths ounce sodium arsenite (chemically pure) in one pint hot water. Cool. Add poison solution to syrup and stir well. Add to poisoned syrup one and one-half pounds honey. Mix thoroughly.

GOVERNMENT LAND FOR SALE

Six thousand acres of citrus land are to be sold at auction by the reclamation service at Yuma, Arizona, November 10. The sale hegins at ten o'clock in the morning. These lands are located on what is known as Yuma Mesa near the city of Yuma. The government will construct the necessary irrigation works and all necessary canals for the irrigation of these lands, the estimated cost of which is placed at $200 per acre, with $25 per acre added for the land, making the minimum bid $225 per acre. Address Reclamation Service, Yuma, Arizona, for further information.

FARM CENTER MEETING

Members of the Roosevelt farm center have invited other members of the farm bureau of the Antelope Valley to meet and picnic with them on the fair grounds at Lancaster, Saturday of this week. T. B. Tuohy is to be the chief coffee maker.

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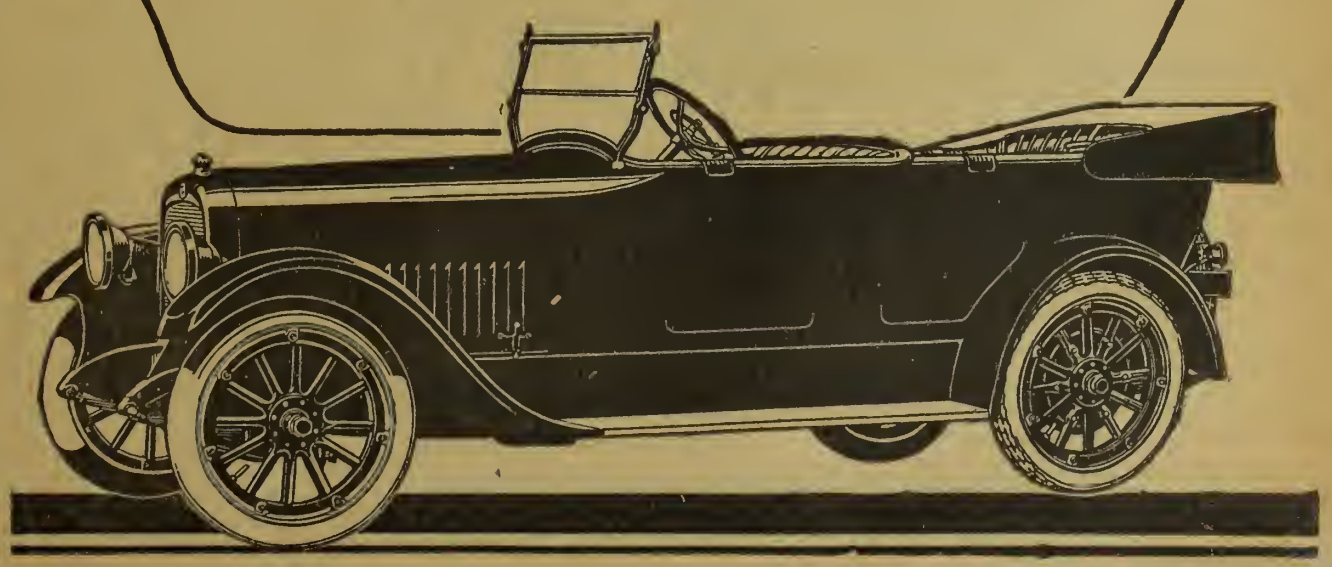

California's Cauliflower Crop

By Ernest Braunton

THE largest cauliflower crop in the world is grown in the lowland districts of Los Angeles and Orange Counties, of which there are 4,200 acres now in process of growth or harvesting. The next largest acreage is on Long Island, New York,, of just half the area of the local fields. California swings into the ring again for third place in 1,400 acres south of San Francisco, centering about Colma in San Mateo County. The fourth district in size is in northern New York, and about 40 acres in one district is grown near Roseburg, Oregon. Colorado, Illinois and Florida grow some but ship little.

R. G. Risser, crop expert for the California Vegetable Union, says that the biggest field of cauliflower in the world is that of Williams Bros., at Vegala, a station on the Santa Fe a few miles southeast of Los Angeles. There the present acreage is from 350-400, in one tract. The cauliflower industry is restricted to certain districts where the combination of soil and climate is favorable and only in cool, moist coastal districts is the crop a commercial success. It also requires as much skill and care to grow good cauliflower as it does the most exacting of plant life known to the truck farmer. The whole local industry is self-supporting and sufficient unto itself. The varieties grown were originated here and seeds are saved by each grower, that from other states being comparatively worthless.

The principal growers do not even trouble to name their varieties but they are known by seasonal names. There is a "Snowball" that is grown as an extra early for local consumption, but the acreage is quite limited. The shipping sorts are divided into three seasons; two or three strains are used for the early, followed by the half-early or intermediate, and then comes the late. For the late season some of the growers have substituted broccoli, a late and hardy variety and the one principally grown in the Colma district. All these have been selected as to the season of flowering, with the main points of excellence a tall foliage to protect the head and a close compact deep flower head. Some of the poor varieties have but an inch veneer of flower and these are discarded from the shipping, to be used in other ways.

The present season is an especially good one for the California grower, the Long Island crop being a failure, due chiefly to too much rain. This crop interfered only with the early shipments from local points, being marketed in November and the first part of December or until a heavy freeze. California ships not only cauliflower but a variety of fresh vegetables throughout the winter. Our caulliflower usually follows the Long Island crop on the Eastern markets. As to yield the local fields run 300-400 crates to the acre and the standard is a dozen heads to a crate, though the range in size is from 8-16 per crate. The price paid to the largest local producer last season averaged 90 cents a dozen.

MORE AND BETTER POTATOES

Continued from Page 643

ment, as had the application of muriates and sulphates. Mr. Hodgson also referred to the beneficial results which should accrue because of the work of Mr. Shear of the state department of agriculture in seed certification.

Nevada Method

H. A. Hyde of Watsonville, a practical and life long planter and grower of potatoes, also a dealer in potato seed, referred to the fact that the potato grower wanted not only seed which would germinate and grow, but "seed which has the pep." He maintained there was all the difference in the world, as there is in animals and in humans, in the way potatoes would grow and flourish or, again, show most indifferent results. He referred to a method of seed production in Nevada as followed at the present time of growing the potatoes until little more than a third or a fourth grown, then digging, curing and ripening and planting the seed whole. Spring planted seed are sometimes caught by cold wet weather at planting time. Cut seed is almost sure to rot. The small whole seed which he described is much more resistant to decay and gives a far better stand.

Mr. Hyde referred to one of the newer potatoes, Earliest of All, a 70 day potato, which is doing exceptionally well in the northern part of the state. One method of sprouting followed in the Watsonville section is to place in crates in shade.

Certified Seed Growers

George Peters, Kern County's certified seed grower, made appeal for better seed, for certified seed, in fact for a certified seed growers association. His talk was so forceful that it resulted in appointment of committees and ultimately in the formation of an association of which he was elected president.

Other talks were made by Messrs Ryan, Young, Risser, Milbrath, Olsen

In addition to the association of seed growers it was suggested that the industry was sufficiently important that in the farm bureau work in every county in which potato growing is an important industry there should be an affiliating organization which should devote its energies to bettering the potato industry.

After the luncheon and its short conference the ranch of J. B. Radcliff at Burbank was visited. The potatoes here were much riper than those in the San Gabriel Valley. They were the St. Louis Rose, the seed which was used being secured from the last spring's planting. These potatoes had already been nipped by the frost. They were remarkably even in size.

A few miles farther in the San Fernando Valley was the ranch of J. L Olsen near Van Nuys. His place was planted with hill selected seed from the spring planting. His favorite varieties were White Rose, Scottish Chief and Harvest King.

As to the number of potatoes desired in the hill Mr. Olsen said that much depended upon the soil fertility. For the general planter a seed which would grow a plant setting a great number of potatoes is not to be preferred. This for the reason that until soil fertility is built up to a point where it will mature a good sized potato partial failure will result from planting such seed. Mr Olsen made especially emphatic the statement that soil fertility is a matter of building and not simply of trying to place commercial fertilizers in the furrow at seed planting time The most practical soil builder for the potato grower is the green manure crop.

The last place visited was that of George Nadeau, also near Van Nuys His varieties and crop conditions were almost identical with those of Mr. Olsen.

LADYBIRD DOES EXCELLENT WORK IN FLORIDA

Superintendent Harry S. Smith of the state insectary is in receipt of a letter from Prof. J. R. Watson, entomologist of the Florida experiment station, from which the following is quoted:

"You will be interested to know that Delphastus catallnae has been doing excellent work in the original grove where it was introduced and also in many of the groves where it was introduced only this summer. We have sent out this summer in the neighborhood of 600 colonies to different parts of the state."

This ladybird was sent to Florida by Superintendent Smith in 1915 for use against the citrus whitefly. Evidently it is becoming of considerable importance as an enemy of this pest

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VARIETIES IMMUNE TO POTATO WART DISEASE

Prof. James G. Sanders of the Pennsylvania bureau of plant industry has returned recently from an inspection trip to Great Britain and Ireland under commission from the federal horticultural board at Washington. Regarding the potato wart disease he writes to Director Hecke of the state department of agriculture:

"You will be interested to know that we have uncovered this disease in four places in one of our western counties in the bituminous coal region, and three points in other counties close at hand; also at two points in West Virginia it has been discovered by United States inspectors. Looking at this matter from a broad standpoint, it behooves us to secure immune varieteis in sufficient quantity so that seed may be available for everyone in infected and adjacent territory. I am securing from England by special permission of the federal board a ton each of the best immune varieties and smaller quantities of ten other varieties for test of productiveness under our climatic conditions. We also have found in experiments that several of our American varieties are immune, happily including the well known Irish Cobbler.

"Another interesting matter which I determined while in Ireland: I found a variety of potato which had been taken to Ireland by a returned Irishman from Montana. This potato grown in infected soil in Ireland proved immune. The specimens which I brought back with me have turned out to be the Idaho Rural, as determined by Prof. William Stuart of Washington, and this adds another to our list of immune varieties of agricultural value."

TOMATO AND THE MOTOR TRUCK

By Ernest Braunton

That the hauling of farm products by motor truck has changed the varieties grown is a statement that needs explanation, but is a fact nevertheless. In years gone by all soft fruits had to be "good shippers," for they were handled many times from producer to packer, and many vexatious delays occurred. Railroads had other commodities, and merchandise to haul and delays from freight congestion, car shortage, wrecks and strikes had to be considered in the handling of perishable products. But now the motor truck is on hand and it has one specific duty to perform—to haul to market the load it goes after.

With a minimum of time, handling and shaking up, the most perishable fruit is now sent to market when it is ripe, and not before. All credit to the motor truck and California's good roads system.

In quest of information as to the varieties of tomatoes most in demand by the canneries the writer visited the Los Angeles plant of the California Packing Corporation, which is now running largely on tomatoes. E. J. Ketterman, the superintendent, said: "In years past we have contracted almost entirely for the Stone, for it is a spdendid shipper, none better. But this year we had our acreage put in one-half of Stone and one-half of the San Jose Canner, a splendid variety developed from the old-time Trophy. It is not a shipping tomato like the Stone, but is unrivalled as a home canner. I believe it to be the coming tomato and we shall go into it heavier next year, for through careful seed selection, it is being improved each year. So far the Stone has been the smoothest but the San Jose is fast catching up to it on this point and is a better tomato on some other points."

This plant handles 7,500 tons of tomatoes each season, and this is packing house No. 19, all of the plants using the same varieties. The total amount used is grown not far from Los Angeles—from Chatsworth Park on the west to Fontana on the east and Downey on the south, while Van Nuys, El Monte and intermediate points contribute heavily. The season is just now at its height, for it commences about August 15 and closes generally about the first of December. In frostless autumns the run is up to Christmas, but the tomato season, like that of its near relative, the pepper, is terminated by Jack Frost.

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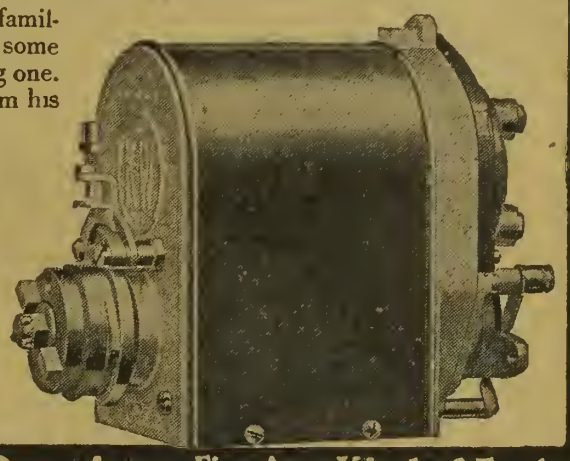
List of K W equipped tractors and catalogs sent upon request.



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There are many fresh, heavy producing cows in this sale, among them some without official records that should prove exceptionally good buys.

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She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia

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Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holstein Cattle

November 25. Registered Holsteins, California Breeders Sales and Pedigree Company, Tulare.
November 10. Diablo Stock Farm, dispersal, San Francisco.
December 18-19, A. W. Morls & Sons, Woodland.

Duroc-Jersey Swine

January 28, Diamond Bar Ranch, Spadra, Los Angeles County.
January 29, Winsor Ranch, Bonita, sale in Los Angeles.
January 30, Ireland Ranch, Owensmouth, Los Angeles County.

Poland China Swine

November 19. Fresno County Poland China Breeders' Association, Fresno.

Percheron Horses

November 25, Sam Wade & Son, Enterprise, Oregon.

Anchorage Farm, Orland, is particularly well pleased over the winning hy Berkshires of the first prize carload for heavy packer hogs and grand champion carload over all breeds competing at the California International Livestock Show, as the load was sired by a son of their premier sire, Star Leader.

Harvey M. Berglund, Dixon, one of the younger breeders of Duroc-Jersey swine, was one of the exhibitors at the California International Livestock Show and with no fitting succeeded in landing his herd boar in second place. Mr. Berglund reports the sale of a junior yearling boar to Dorman T. Bennitt, Willitts, a spring boar to A. Alcese, San Francisco, and two bred gilts to Wm. Collins, Dixon.

One of the recent importations that is attracting the attention of breeders of Duroc-Jersey swine is that of F. M. Johnson, Napa. Mr. Johnson attended the National Swine Show, Des Moines, Iowa, and later visited a number of the leading Eastern herds. The main object of the trip was the personal selection of a number of animals for his breeding herd maintained on his ranch near Napa. Included in his purchases were nine gilts by Pathfinder's Likeness, the 1918 grand champion boar at Iowa state fair; six granddaughters of Great Orion, the 1918 grand champion at National Swine Show, one hy Pathfinder, and 17 young sows of Pathfinder, Sensation and Great Wonder blood lines. To secure proper matings and correct type he selected a senior boar pig hy Great Sensation, a spring pig by Pathfinder and the large massive boar, King Orion Jr., that was first in class, senior champion and grand champion at the California International Livestock Show and was the outstanding individual of the Duroc-Jersey show.

Now that the Conejo Ranch Durocs and Hampshires are again settled down at breeding headquarters at Newbury Park it is of interest to note their successes in the show ring at the big fairs where exhibited. These combined herds came home from three shows with a grand total of 142 ribbons to their credit, including 13 championships from Los Angeles and San Francisco alone. They showed the grand champion Hampshire sow at Los Angeles and the grand champion Duroc sow at San Francisco. They secured first prize get of sire and first prize produce of dam for both breeds at both the above big shows. The Conejo exhibit was made under the direction of H. H. Braly as general manager and Geo. F. Waltemeyer as manager of swine department. These herds are open to inspection at the ranch by the visiting public any and every day in the year. A fine herd of registered Hereford cattle is likewise to he seen at the ranch.

If there is one man in Holstein circles in the south end of the state who stands in closer touch with the broader interests of the breed than another that man is no doubt Geo. M. Brown of Burr Farm, Los Angeles. Brown is familiar with the rank and file of Holstein breeders up and down the Pacific coast, and the splendid collection of Holstein cattle at Burr Farm today constitutes a concrete demonstration of the good to result from rubbing elbows with leading breeders at the big shows, at public sales, as well as at the various breeding ranches, both large and small. Everybody is more or less familiar with the rating of the great sire Sir Veeman Korndyke Pontiac at head of Burr Farm herd, but it is not so generally known that there are scores of high class females here in keeping with so great a sire.

At the recent Los Angeles Livestock Show, where were shown 14 animals from this herd, there were 15 winnings to their credit. These included grand champion cow, reserve grand champion cow, first prize aged cow, first prize three year old cow, first prize senior yearling heifer, as well as senior champion, reserve senior champion and junior champion in females, and a half dozen other prizes lower down the scale. It goes without saying that the young bulls to he offered from so great a breeding ranch are of a character to build up the dairy interests of all communities where they may go, and it should be understood first and all the time that the Burr Farm Holsteins are a working herd of high class registered Holsteins under a management whose aim is to solve the problem of economical production in the dairy world.

Hewitt Bros., Van Nuys, are showing visitors a litter of young Durocs sired hy the noted Winsor's Giant Orion. These fine pigs are out of a big senior yearling daughter of Great Model, and they give promise of extraordinary merit in matters of size and genuine Duroc character.

L. R. Hitchcock, Van Nuys, has succeeded in developing a string of 14 big young Duroc-Jersey sows that are one of the attractions in San Fernando swine circles. They are of Orion's King Gano and California Orion Cherry King blood lines.

Tom M. Bodger is owner of a fine herd of registered Hampshire swine at Gardena. While Mr. Bodger is not a professional showman he certainly turns out the genuine type of Hampshires. He has more than 40 September pigs flourishing in the right way, averaging eight to the litter raised and showing better than 90 per cent perfect helts. Sires in service are Billiken by Director, a fine big three year old, and Uneeda Harvester by The Harvester, an excellent two year old hog. A great brood sow in any man's herd is Twilight Pearl, a two year old daughter of Director, and she has six September pigs hy Uneeda Harvester that are perfect Hampshires. Senta is a Goldmine sow with a farrowing record of 40 pigs in her four litters. Opal is a daughter of Draper Lad from the Underhill herd with 11 pigs at side hy O. U. R. Aristocrat—showing ten perfect helts. Pansy Blossom is a Lookout Cherokee sow with nine Septemher heauties by Billiken.

Herefords Set New Record

The third annual sale of Herefords held by members of the Pacific Coast Hereford Breeders' Association at the California International Livestock Show set a new mark for the breed and reflected the keen demand that exists in this state for Hereford cattle.

The offering had been selected with great care; many prize winning animals were listed and the lot were presented in excellent condition. Thirty-three head of females and bulls were sold to 17 buyers, many making their first purchases, for an average of $711, a new record for the breed on this coast. Nine head sold for $1,000 or more, with a top of $1,475 for the three year old, Miss Dale, consigned by the Hereford Corporation of Wyoming, Cheyenne, and purchased by Wm. Briggs of Dixon. Briggs, who is laying in a foundation herd, was the

heaviest buyer, taking four head from the Wyoming herd for an average of $1,118 and two from the Cazier consignment at $1,100 and $925. The Cazier consignment of six head averaged over $1,000.

H. H. Gable of Esparto selected five of the top females at an average of near $1,000. J. A. Bunting drew one of the choice lots in Lady Ranier at $1,050.

The real bargains of the sale were the bulls. A particularly strong lot were offered, but buyers were lacking. W. D. Duke of Gazelle picked a juicy bargain when Nevada Lad 8th fell to his bid of $660. Bunting made a sacrifice when he sold California Prince Donald, grand champion at the 1918 state fair, for $700. Sonoma, the five year old bull formerly at the head of the Rule herd, was only able to make $525. not half his value.

The consignors and the association were highly pleased and regarded the sale as a fitting triumph for the splendid showing made during the week.

Col. Earl Gartin was auctioneer and John A. Bunting and H. E. Allen, who represented the American Hereford Breeders' Association, were in the ring.

The sale was managed by C. L. Hughes of the California Breeders' Sales and Pedigree Company, Sacramento, with the usual high class rendered by that organization.

The complete report follows:

J. H. Cazier & Sons Consignment

FEMALES

21, Isis 2d, October, 1917; Wm. Briggs, Dixon. $1100.
22, Standard Eyes 2d, May, 1918; H. H. Gable, Esparto, $1225.
23, Cleo 4th, June, 1917; H. H. Gable, $1000.
24, Venetia 2d, October, 1917; H. H. Gable. $1100.
34, Substitute; Wm. Briggs. $925.

BULLS

25, Nevada Lad 8th, October, 1917; W. D. Duke, Gazelle. $660.

Hereford Corporation of Wyoming Consignment

FEMALES

30, Miss Dale, February, 1916; Wm. Briggs. $1475.
31, Miss Dare 10th, February, 1918; Wm. Briggs. $800.
32, Miss Dare 11th, February, 1918; Wm. Briggs. $1175.
33, Miss Era 14th, September, 1918; Wm. Briggs. $1025.

J. A. Bunting Consignment

FEMALES

6, Calls Randolph, March, 1917; Moulton Warner, Cool. $650.
7, Lady Jane, September, 1917; H. H. Gable. $1050.
8, Melba Cook, January, 1918; Beatrice Bemmerly, Woodland, $775.

BULLS

5, California Prince Donald, February, 1917; La Honda Stock Farm, La Honda, $700.

Wm. Bemmerly Consignment

FEMALES

26, Marian C. P., May, 1914; Chas. Rule, Duncan's Mills. $775.
27, Eva S., December, 1913; F. G. McCollough, Dunningan. $650.
28, Miss Friday Alamo, March, 1917; W. S. Waiters, Healdsburg. $775.

BULLS

24, Nevada Lad 2d, September, 1917; Miller & Lux, San Francisco. $500.

H. M. Barngrover Consignment

FEMALES

9, Lady Ranier, May, 1916; J. A. Bunting, Mission San Jose, $1050.
10, Lue Clark, May, 1916; Moulton Warner, $575.
11, Golightly 9th, March, 1917; P. M. Snyder, Los Molinos. $500.
12, Normalene, August, 1918; H. H. Gable. $575.

BULLS

13, Gracioso, January, 1918; Miller & Lux. $425.

H. H. Gable Consignment

FEMALES

3, Bessie Donald, April, 1917; W. S. Walters. $400.
7, Fair Lassie, September, 1917; H. M. Barngrover. $275.

Chas. Rule Consignment

BULLS

1, Sonoma, September, 1914; F. A. Work, Monterey. $525.

Diablo Stock Farm Consignment

FEMALES

14, Sally Clark, February, 1917; Wm. Bemmerly. $925.
15, Lady Amethyst, May, 1913; H. M. Barngrover. $225.
16, Lady Berendo 208th, March, 1910; Howard Tilton, Madrone, $200.
17, Mabel Lass 4th, February, 1917; Moulton Warner. $250.
18, Elma Oregon, February, 1917; H. M. Barngrover. $450.
19, Hylas Randolph, March, 1917; Moulton Warner. $300.

BULLS

20, Witchford, June, 1917; L. F. Buchetto, Oakdale. $475.

Shorthorn Sale a Bargain Event

The third annual sale of Shorthorns held under the auspices of the California Shorthorn Breeders' Association at San Francisco, during the livestock show, proved to be a bargain day for the buyers. Thirty head of cows, heifers and bulls sold for a general average of $487.50, a price that fell short of representing the real value of the offering. If the consignors were disappointed in the prices, they were pleased with the number of new buyers making their start with the red, white and roans.

Marked preference was shown for Scotch breeding and animals with attractive pedigrees were eagerly snapped up.

The top of the sale was $1,000 paid by Geo. E. Dierssen of Sacramento for the choicely bred Marr Missie Willowbrook Maid, bred to Gainsford Matchless, grand champion bull of the show. Dierssen also selected the Campbell Mina heifer, Caledonia Purity, at $675.

The Edinger-Johnston Company, Hood, who are establishing a high class herd, selected a number of the top females, and made a particularly good purchase in the richly bred white senior bull calf, Milman Stamp, at $825. The Fair Oaks Ranch, Willits, paid the top price for bulls when they took Orden's Sultan, a junior yearling, at $900.

Gardiner Pierce of Davis made his start by taking two females at bargain prices.

Geo. J. Meister of Sacramento, a new breeder, added a number of good ones to his herd. The Warm Creek Land & Livestock Company of Wells, Nevada, offered competition on the better things. Mrs. T. S. Glide of Davis bought two females.

Col. Earl Garten of Indiana served as auctioneer and Col. Ord L. Leachman of Sacramento worked the ring.

Frank D. Tomson, editor of The Shorthorn in America, and one of the leading authorities of the breed, was in the box and aided the sale by advice. B. O. Cowan, formerly assistant secretary of the American Shorthorn Breeders' Association, also rendered valuable assistance by his timely remarks.

A detailed report follows:

Caledonia Farms' Consignment

FEMALES

1, Ramona Miss, January, 1914; W. O. Bassingame, Fresno, $370.
2, Caledonia Glen, November, 1918; T. S. Glide, Davis, $210.
4, Caledonia Purity, Spetember, 1918; Geo. E. Dierssen, Sacramento, $675.
5, Glenbessie 2d, January, 1916; W. O. Bassingame, $350.
7, Signet's Memory 6th, December, 1914; Edinger-Johnston Co., Hood. $325.
9, Fayette's Heiress 2d, January, 1918; G. J. Meister, Sacramento. $300.
11, Caledonia Princess, September, 1918; T. T. Miller, Hollister. $230.
13, Winsome Memory 4th, September, 1917; Mrs. T. S. Glide, Davis. $400.
15, Winsome Memory 5th, September, 1917; J. F. Dunne, Gilroy. $425.
17, Willowhook Maid, October, 1917; Geo. E. Dierssen. $1000.
18, Lady Champion 3rd, September, 1917. $650.
22, Champion's Penelope, April 1917; G. J. Meister. $380.
25, Paicines Nora, January, 1912; G. J. Meister. $600.
27, Signet's Memory 8th, January, 1915; Gardiner Pierce, Davis. $400.

BULLS

30, Spicy Champion 2d, December, 1916; A. B. Kohn, San Francisco. $635.

T. T. Miller Consignment

FEMALES

12, Crimson Bud, February, 1918; Warm Creek Land Livestock Co., Wells, Nev. $700.
21, Milmar Star, October, 1918; J. F. Dunne. $250.

BULLS

29, Milmar Stamp, October, 1918; Edinger-Johnston Co. $825.
32, Orden's Sultan, March, 1918; Fair Oaks Ranch, Willitts. $900.

Ormondale Ranch Consignment

FEMALES

6, Orange Crust 5th, December, 1918; Mrs. T. S. Glide, $375.
10, Ormondale Bud, November, 1918; Edinger-Johnston Co. $385.
14, Roselawn Bud 86th, April, 1914; Gardiner Pierce. $620.
16, Ocotber, 1918; Thos. Hawkins, Hollister. $300.
24, Ringleader Beauty, March, 1914; Fair Oaks Ranch. $400.

BULLS

28, Ormondale Laddie 2d, November, 1918; Peter Nicholls, Napa. $500.
31, Ormondale Radium, February, 1918; W. E. Day, Menlo Park. $450.

Pacheco Cattle Co. Consignment

FEMALES

8, Pacheco Lass 141st, January, 1918; Warm Creek Land Livestock Co. $650.

Estate of Thos. B. Dibblee Consignment

FEMALES

3, Ormondale Violet, December, 1916; W. B. Fuller, Los Angeles. $445.
23, Lucy Lee 4th, April, 1917; Guy Featherstall, Clements, $400.
26, Ormondale Beauty, May, 1916; Murphy Estate, Brentwood. $610.

Burr Farm Registered Holsteins

Sir Veeman Korndkye Pontiac 156051

Bred for Milk and Butter Production

The Notable Sire Sir Veeman Korndyke Pontiac at head of this herd

BUY BULL WHILE YOUNG

The oldest bull calf at Burr Farm today is under 6 months. We have plan that sells them young. Four bull calves by Sir Veeman Korndyke Pontiac, and out of tested dams, now offered.

No. 1—From a 22.03 lb. three year old, milked up to 87 lbs. per day; 2000 pounds 30 days.
No. 2—From a 16.60 lb. two year old, that milked 62 lbs. per day; 1800 lbs. 30 days.
No. 3—From a two year old with 14.97 lbs. milk in seven days.
No. 4—From an 18.98 lb. cow.
Write us now about our young bull prospects.

He has 3 A. R. O. daughters to his credit. No less than 40 of his daughters were retained in one of the leading breeding herds in the San Joaquin Valley.

The owners of Burr Farm Holsteins are charter members of Los Angeles County Cow Testing Association.

Burr Farm Holsteins are a real factor in the commercial milk supply for the city of Los Angeles.

The high standard of merit set up in the founding of Burr Farm Holsteins redounds to the credit of the herd 365 days in the year.

High Class Matrons in Herd

There are not simply one, two, three, a half dozen, nor a dozen great producing cows at Burr Farm—they are numbered by the score. This is why it is safe to buy a young bull at Burr Farm on our plan that sells them while young.

Young bulls sired by Veeman Korndyke Pontiac are now in use from Humboldt County to Imperial County—the entire length of the state.

BURR FARM is Located at E. 26th Street and Downey Road **LOS ANGELES**

GEORGE M. BROWN, Manager

We Have Decided to Sell

This Young Bull---Kounias King De Kol Ormsby

that he may perpetuate the production of his high producing dam. His sire has three 30 lb. daughters, a 35 lb. dam and four 30 lb. sisters. This kind is hard to buy. If we sell him we must do so now. Write us.

Kounias Pure Bred Stock Farms

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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References. The leading breeders in the state. Write or wire for dates and terms.

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Guernsey products are consistent winners at local as well as national contests. Write for our free booklets.

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By actual test will increase pork production five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price.

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One of our customers writes: "We are out of molasses and our cows are falling off in their milk badly, hence we would appreciate immediate shipment. Kindly ship us two tons more in addition."

We supply it in barrels or tank cars for shipment anywhere.

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LACTEIN

CONDENSED BUTTERMILK

FOR HOGS AND POULTRY

MAKES HOGS PAY

BUTTERMILK IS NATURE'S FOOD AND TONIC

Lactein is pure buttermilk as it comes from the churn, pasteurized, super-soured and condensed. It contains all the health giving food and tonic values of the original buttermilk without the useless bulk of water. On account of its high lactic acid content it will keep almost indefinitely.

Lactein is now recognized as one of the most necessary food digestive agents known for both growing hogs and poultry, due to the large amount of lactic acid it contains. The lactic acid aids digestion and assimilation, causing the hog or fowl to digest all the good from the grains given them to eat, and to eliminate all the dead and diseased matter from the digestive organs thereby promoting growth and preventing disease. Lactic acid is considered the best tonic, appetizer, liver and bowel regulator known for hogs and poultry.

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One gallon of Lactein mixed with thirty gallons of water and fed with the usual grain feed will show greater gains than from feeding the grain alone, besides it will keep the hogs and poultry healthy and their appetites keen.

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The Sam Wade & Son Stud

La Grande, Oregon, November 25

47 Stallions and Mares

Owing to advanced age of the senior member of the firm of Sam Wade & Son, Lostine, Oregon, it becomes necessary to close out their entire stud of registered Percherons.

The offering consists of 47 head, including 8 stallions ranging in age from yearlings to five year olds, four weanling stud colts and 35 mares, and fillies. Among the cataloged lots are a number of sons and daughters of the great Calypso.

This stud has been the largest winner at the leading Northwest shows for many years. The stallions are the ton kind, and the mature mares will weigh from 1800 to 2000 pounds. Wade Percherons have a reputation for size, bone, quality and soundness. For catalog address

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The Cultivator Costs Only $1.00 Per Year

A Pure Bred Sire Demonstration

By Frank D. Tomson, Editor The Shorthorn in America

Some years ago the publisher of the Kansas City Star, the late W. R. Nelson, decided to demonstrate for the benefit of corn belt beef raisers the value of white Shorthorn bulls on common cows picked up at the Kansas City market. He accordingly fitted up a large farm near Kansas City and stocked it with common cows purchased from time to time at the Kansas City Stock Yards. The word common is used advisedly for they were indeed an ordinary lot, lacking breeding and consequently deficient in form and feeding qualities. He picked for red colors, assuming that the calves from white bulls would come largely roan.

In the selection of the bulls he was very critical, picking for thick flesh, ample scale, and feeding quality and always white in color.

The first cross showed a remarkable improvement over the conformation and character of the dams. From these a representative lot of heifer calves was reserved for the breeding herd and when of sufficient age they were bred and their calves, having the second cross, showed still further improvement. Then the third cross was made and now the fourth cross calves are putting in their appearance. Each succeeding cross shows positive improvement, both in form and feeding and milking tendency.

Mr. Nelson's forecast as regards the colors was correct for the calves have come overwhelmingly roan in color. Now that the white blood has been intensified, the later crops of calves show a good many whites. With these several crosses the calves are approaching the pure bred type.

Since Mr. Nelson's death an annual demonstration has been put on at Sni-A-Bar farm showing the several stages of the demonstration. At the recent demonstration in October one of the most interesting comparisons was two groups of calves, the best ten and the poorest ten calves, shown with their dams. One observed readily that the dams of the ten poorest calves were scant milkers and on the other hand the dams of the best calves all showed a liberal tendency to milk. These cows were in rather thin flesh, while the dams of the poorest calves were looking thrifty. This comparison places an emphasis on the good milking cow.

The calves of the first, second and third crosses were grouped in near by pens giving an interesting and concrete object lesson in the value of pure blood in the making of beef form. These demonstrations have been largely attended by corn belt farmers and stockmen. A program is provided and addresses made by well known cattle breeders and livestock experts.

A feature of additional interest in the form of a field show put on by the American Shorthorn Breeders Association in which pure bred cattle only competed carried the demonstration one step farther and conveyed to the spectators a suggestion of the value of pure bred animals as against grades. It is evident that the grading up process, however successful, requires a long time, starting with a common foundation, and regardless of the number of years spent the results in the end are grade cattle. By laying the foundation with pure bred cattle not only is the time saved, but the profits are larger at every stage of the game.

Back in Lancaster County, Pennsylvania, where cattle feeding has been carried on extensively and systematically for many years to such an extent and with such success that very general prosperity obtains in the county, a show of Shorthorn cattle was put on recently and several exhibitors from outside of Pennsylvania sent their herds to compete with Pennsylvania entries in response to the request for an object lesson of this nature. The results were all that could have been hoped for.

There is a growing inclination in all sections now toward pure bred standards to insure efficiency in the feed lot and in the dairy. It is a wholesome tendency.

Blackleg Prevention

Dr. J. P. Jacks of Phoenix, extension animal husbandman of the bureau of animal industry, recently accompanied the "livestock squad" of the agricultural extension service in its field trip over Arizona ranges. Eight hundred stockmen were given information on blackleg in cattle but for the benefit of stockmen who were not able to attend any of the "squad" meetings Dr. Jacks has furnished the following statement:

"Practically all losses from blackleg may be prevented by the systematic vaccination of all young cattle a month before the season when the previous losses occurred from the infection. The re-seeding of the soil with blackleg spores or germs may be largely avoided through the prompt disposal of the animals dead of blackleg, by burning, or when this is impracticable, by proper burial of the carcass. Drainage and cultivation of the infected pastures where practicable is also advised.

"It is to be remembered that blackleg may be prevented much more certainly and economically than it can be treated and that vaccination is the cheapest and most satisfactory way of preventing the disease. It was formerly thought by a rather large number of stockmen that by 'rowelling,' 'bleeding,' 'driving' and also by using garlic and pine tar to act as a vaccine that the disease could be prevented. This is simply an ancient fallacy and has no prophylactic vaue whatever.

"Blackleg vaccine has been in use many years to immunize young cattle against the disease. This vaccine is one of the earliest and most successful agents employed for the protection of cattle against an infectious disease and has enabled stockmen to successfully raise cattle in badly infected blackleg districts. Like all true vaccines this one has certain limitations, the more important of which are the severe reactions and occasional death in an extremely susceptible animal and insufficient production in others.

"It was formerly thought to be impossible to obtain adequate protection in all individuals by means of a single vaccination, without increasing the strength of the vaccine to a degree where it would be dangerous for the more susceptible animals. These difficulties have been eliminated recently by the development of a new immunizing agent which has overcome the deficiencies of the old vaccines to a great extent. This new product, known as the Blackleg Aggressin, is a sterile, germ-free product and therefore may be used without danger of causing blackleg. Since it is only slightly toxic, it may be given in sufficient dosage to safely immunize most animals at a single vaccination.

"For best results under all conditions we advise regular spring and fall vaccinations of all cattle under two years old, but the time for the vaccinations varies with the localities and seasons. Losses from blackleg occur when the feed is good and the cattle start to improve in condition. It is best to fix the time of vaccination so that the work will have been completed at least two weeks before the date when the early losses have occurred in the previous years."

RECORDS OF LEADING COWS

Leading records for California for production of fat and milk by Holstein, Jersey and Guernsey cows were recently made public by the breed associations in charge of the records.

Among the Holsteins De Kol of Valley Mead 2d (A. W. Morris & Sons) produced 2306.6 pounds of milk and 92.275 fat during June. She is ten years and one month. Roma Princess Alcartra (J. S. Gibson Co.) produced 2107.7 pounds milk and 77.774 pounds fat. Her age is four years

and six months. Anoakia Pontiac Beets (Mrs. A. M. Baldwin) showed a record of 1795.7 and 63.793 pounds respectively. She is three years and four months. Miss Aaggie Acme Burke (Morris) produced 2253 and 69.392 pounds respectively. She is two years and three months.

Among the Jerseys Pearly M. of C. F. (S. P. Kelly), 9¾ years, produced 1440.9 and 67.43 pounds respectively; Irene Cadora (A. A. Jenkins), eight years and two months, 1261.6 and 63.46; Fairy's Last (E. W. Elleby), 9½ years, 1250.3 and 58.39 pounds; and Bonnie Belle M. (Kelly), 13½ years, 1230.8 and 50.96 pounds.

Among the Guernseys, all over five years, Imp. Cherry III of the Effords (G. W. Wilder) showed a record of 1664.7 and 66.59; Little Beauty 2d (Elliott-Brant Rancho), 1360.2 and 66.51; Imp. Dosia of Sarnia (A. B. Humphrey), 1341.6 and 65.47; Proud Dame (W. H. Dupee), 1169.6 and 63.51.

All above records were for the month of June with three exceptions. Yearly records showed that Laurameka, seven years old, produced 29.899 and 1061.27; Aaggie Acme of Riverside, 20,355.8 and 843.25. She is 11½ years.

Questos Una produced 9566.1 and 480.6 (8½ years old); Etbel C. of the Willows (six years), 8979.9 and 444.26.

Holstein short time official tests showed that Princess Roma Alcartra produced 476.2 and 25.224 for the best seven days, and 2493.2 and 100.66 for the best 30 days. Susie Segis Alcartra Abhekerk (Bridgford Co.) produced in the best seven days 311.2 and 12.15.

BULLETIN ON COW TESTING

"The Cow Testing Associations in California," Bulletin 314, by Edwin C. Voorhies, assistant professor of animal husbandry in the University of California, is the title of a recent publication on this important work now carried on in California. According to the circular in every section of California there is need for cow testing work. Records of the work of the various associations which have been operating in California are shown. The need for continued testing is shown by actual records, and the value of this kind of work for future breeding is pointed out.

It is stated that with the present high prices for feed and labor, a dairy herd must average more than 200 pounds of butter fat annually in order to yield a profit to the owner. A plea is made for an association in every part of California as a powerful aid in increasing the production and the returns from dairy herds. Copies of this bulletin may be obtained by applying to the College of Agriculture, University of California, Berkeley, California.

THE OX WARBLE OR HEEL FLY

By interviewing a considerable number of cattlemen in different sections of Arizona at the time of the recent trip of the "Livestock Squad," F. C. Bishopp of the bureau of entomology, Dallas, Texas, found that there was considerable interest manifest in the question of the ox warble or heel fly. He states:

"The United States department of agriculture is now carrying on investigations looking toward the development of feasible control measures for this pest on the range as it is recognized as one of the most injurious insect pests of livestock in the country. The only method of bringing the pest under control now known is to squeeze the grubs out of the backs of cattle during the winter and spring months. This method is of course impracticable under most range conditions. Extraction of the warbles not only reduces the irritation but will of course prevent the emergence of the flies and reinfestation of the cattle the next year.

"A number of points in the life history and habits of this insect have been cleared up by recent investigations which prove to be very interesting. The grubs when mature crawl out of the holes in the hides of cattle, drop to the ground and a few weeks later produce heel flies. These flies are soon ready to lay eggs and begin attacking the cattle the first warm days of early spring. The eggs are cemented to the hairs about the heels of the animal. These hatch within three or four days, the minute grubs penetrate the skin, find their way through the tissues, and after seven or eight months appear under the skin along the backs of the animals. Holes are cut through the hide and the grubs which are at first quite small grow in the course of a few weeks to be about an inch long.

"The injury to the stock is produced in a number of ways. First, through the running of the cattle and bogging of poor stock while the flies are laying eggs in the early spring; second, the worry caused by the maggots penetrating the skin and the irritation produced by the migration of the grubs through the tissues of the body and their presence in the body for several months; third, the damage to hides by the cutting of holes through the back where the best leather is located."

Jealousy is as hard to hide as a bass drum.—Kin Hubbard.

AMOUNT TO FEED DAIRY COWS

Too many cows are underfed. A cow weighing 1,000 pounds needs each day, for the maintenance of her body, an amount of food equivalent to that supplied in eight pounds of clover hay and 20 pounds of good corn silage, according to M. H. Keeney of the University of Missouri college of agriculture. She must have this food regardless of whether she produces any milk. Food used for milk production must be in addition to that required to keep the cow's body. A 1,000 pound cow producing 20 pounds of four per cent milk a day, if properly fed, devotes about half of her feed to maintenance and half to milk production. Obviously when a dairyman has gone to the expense of supplying that half of the food required for maintaining the cow's body, it is poor economy to withhold any of the other half, all of which goes to produce milk. A cow then required feed in accordance to the amount of milk she is able to produce. The heavy producer needs the most feed.

Farm grown roughages (silage, hay, etc.) furnish the cheapest food nutrients. However, a good dairy cow cannot eat enough roughage to supply her needs for milk production. She must have some grain. Therefore, to feed with the most economy the following rules must be observed:

Feed all the roughage a cow will eat. She will eat more if fed three times a day instead of twice.

Feed grain in proportion to the pounds of milk produced.

To a Jersey or Guernsey cow feed one pound of grain for each three to three and one-half pounds of milk produced. To a Holstein, Ayrshire or Shorthorn feed one pound of grain for each four to four and one-half pounds of milk produced.

There is a strong demand for Toggenhurg goats for dairy purposes in Alaska, and no supply.

Cotton seed in the Yuma Valley, Arizona, is bringing $70 a ton.

Is Every Animal At Its Best?

Don't let your stock lose their Summer's gain through November neglect. Your animals are now going on dry feed—hay and grain.

It's a big change from the succulent, nutritious grasses of summer pastures which supply the needed laxatives and tonics.

Keep your animals' bowels open and regular—drive out the worms—keep their blood rich and keep their digestion good by feeding

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A Conditioner and Worm Expeller

Keep your stock up on their appetites. Don't allow them to "get off feed" and in a run-down condition.

Condition your cows for calving by feeding Dr. Hess Stock Tonic before freshing. Then feed it regularly to increase the flow of milk. It lengthens the milking period.

Buy Stock Tonic according to the size of your herd. *Here's a suggestion for your guidance:* Get from your dealer two pounds for each average hog, five pounds for each horse, cow or steer, to start with, feed as directed and then watch results.

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You buy Dr. Hess Stock Tonic at an honest price from a responsible dealer in your own town who guarantees it, and who refunds your money if it does not do as claimed.

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Jerseys are the real "cow investment"! They start producing at an earlier age than any other breed and are still great milkers long after other cows have gone dry.

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3 BULLS	No. 1 born Mar. 1, 1918. Sire our Noble Mayflr Hero.	3 BULLS
No. 2 born Oct. 1, 1918. Sire our Kathie's Winner	All from high record cows in Arden herd.	No. 3 born Dec. 20, 1918. Sire same as No. 2

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INTERNATIONAL STOCK SHOW

Continued from Page 645.

sire class made a most creditable showing. W. H. Pew of Ravenna, Ohio, formerly of the Iowa state agricultural college, judged the Shorthorns. The awards follow:

Exhibitors: Caledonia Farms, West Sacramento; T. T. Miller, Hollister; Pacheco Cattle Co., Hollister; H. M. Elberg, Woodland; T. S. Glide, Davis; Estate of Thos. Dibblee, Lompoc; University of California, Davis; Ormondale Co., Redwood City; William Bond, Newark; William Henn, Kansas City, Missouri.

Aged bull — 1, Dibblee on Hallwood Flash; 2, Elberg on Crescent Dale; 3, Henn on Cumberland Goods. Two year old—1, Caledonia Farms on Gainsford Matchless; 2, Pacheco Cattle Co. on Pacheco Marshall; 3, Glide on Matchless Elite. Senior yearling—1, Dibblee Estate on Bashan Augusta; 2, Elberg on Roselawn Champion; 3, Pacheco Cattle Co. on Dalmeny Count; 4, Henn on Red Monarch. Junior yearling—1 and 2, Miller on Sultan Benito and Ordens Sultan; 3, Bond on Cumberland Gloster; 4, Henn on Lord Julian's Type; 5, Ormondale Co. on Ormondale Radium. Senior calf—1 and 2, Miller on Milmar Matchless and Milmar Stamp; 3, Dibblee Estate on Baron Lancaster; 4, Glide on Cheerful Count; 5, Pacheco Cattle Co. on Pacheco Cumberland. Junior calf—1, University of California on Memory's Champion; 2, Glide on Spicy Count; 3, Pacheco Cattle Co. on Pacheco Barmpton; 4, Ormondale Co. on Ormondale Radium 2d.

Aged cows—1, Glide on Spicy Lady; 2, Ormondale Co. on Mayflower 4th. Two year old—1, Glide on Little Sweetheart; 2, Dibblee on Meadow View Village Girl; 3, Pacheco Cattle Co. on Pacheco Lass 118th; 4, Elberg on Roselawn Blossom. Senior yearling — 1, Glide on King's Countess; 2, 3 and 4, Dibblee Estate on Princess Royal, Lancaster Lady and Lavender Queen. Junior yearling—1, Elberg on Rosie Mayflower; 2 and 3, Ormondale Co. on Golden Beauty and Little Sweetheart 2d; 4, Glide on Village Lassie; 5, Bond on Ormondale Maid 2d. Senior calf — 1 and 4, Pacheco Cattle Co. on White Pacheco and Pacheco Bloom; 2, Glide on Village Rose; 3, Dibblee Estate on Lucy Lee 5th; 5, Miller on Claret Miller. Junior calf—1, Pacheco on Pacheco Lass 189th; 2, Elberg on Maid of Roselawn; 3, Bond on Cumberland Maid; 4, Glide on Countess Fortuna; 5, Dibblee Estate on Secret Clipper.

Senior champion bull, Gainsford Matchless. Junior champion bull, Bashan Augusta. Senior champion cow, Little Sweetheart. Junior champion heifer, King's Countess. Grand champion bull Gainsford Matchless. Reserve grand champion bull, Bashan Augusta. Grand champion female, Little Sweetheart. Reserve grand champion female, King's Countess.

Aged herd—1, Dibblee; 2, Glide; 3, Elberg; 4, Pacheco Cattle Co. Young herd—1, Glide; 2, Pacheco Cattle Co.; 3, Ormondale Co. Calf herd—1, Dibblee; 2, Glide; 3, Pacheco; 4, Miller; 5, Pacheco. Get of sire—1, Ormondale Co.; 2, Pacheco; 3, Glide; 4, Dibblee; 5, Miller. Produce of dam—1, Dibblee, 2, Glide; 3, Bond.

The Herefords

The show at San Francisco was the occasion for rejoicing in the Hereford ranks and furnished the first real proof of the progress the breed is making in this state. For a good many years a little band of breeders has pinned its faith and hope on the merit of the Hereford, and each year the ranks have been augmented, and the show just closed is rated as the best Hereford show in California. Not only were the classes well filled, with well fitted animals from California herds, but local breeders measured strength with the strong herd sent West by the Hereford Corporation of Wyoming. California has always been regarded as preempted Shorthorn territory, but in the carload classes for steers, registered heifers and bulls, with the exception of one lot, all showed the whiteface trademark of the Hereford. Again, the sensation of the show, California Perfect Lady, the cross bred heifer that was grand champion in the fat classes, had a white face, and to round out the week the sale held by the Pacific Coast Hereford Breeders' Association established a new coast record for the breed.

The Eastern bull, Wyoming Prince, won his class from Patrician 5th that packed a lot of meat but was not as pleasing in his rear conformation. Sonoma took second owing to a lack of character and a bull look. Rule showed a very compact, low set, soggy, thick fleshed two year old. Henn was second with a grandson of Perfection Fairfax, lacking the class of the winner but with more character and size than Bonnie Laddie, champion at Los Angeles.

Cazier was forward among the senior yearlings with Nevada Lad 8th, a bull wtih much to recommend him. Bunting was second with Alec, a calf of promise. A polled was third and Henn was fourth.

New Era 2d, good headed, thick, low down and standing on exceptional bone, won among the junior yearlings. Both the senior and junior yearlings had friends for the high place. The Hereford Corporation also landed second over one entry of Barngrover and two owned by Henn.

Joe Dulcinea, en route to the Islands, led the senior bull calves a merry tussle until he was sent to the top on account of his unusual size for age. A Wyoming calf was second, Barngrover third and two Henn entries stood fourth and fifth. Bunting had a good calf out of the money that should have had a place.

Mission Prince, the junior calf that was grand champion at Sacramento, won first for Bunting over two from Wyoming. New Era 2d was made junior champion.

The three aged cows fell into their placings rather readily, the Eastern entry showing in nice form.

The two year olds furnished the grand champion in the very attractive Miss Rialto 2d. Bunting was second with Miss Betty, a heifer that is at home in good company. Barngrover was third over a Gable entry and the Diablo Stock Farm was in last place.

Cazier won the senior yearling class with a short legged, thick fleshed daughter of Harris Standard 2d. Bunting showed his lovely Lady Jane above another Nevada heifer of much the same stamp as the winner. A polled heifer was fourth.

The junior yearlings lined up with a nicely fitted, straight lined, well balanced Nevada calf leading.

In the senior heifer class the ringside differed decidedly from the judge, the "talent" feeling that the last two should have been first and second and top pair third and fourth.

The winner of the junior class, Lady Fairfax 9th, was made junior cham-

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October 1919	October 1919	November 1919
Ventura County Fair	Los Angeles Livestock Show	San Francisco Nat'l Livestock Show
27 Firsts 24 Seconds 7 Thirds Total 58 Ribbons. Note: No Championship Awards are made at this Fair.	3 Championships Balance Firsts, Seconds, Thirds, etc. Total 35 Ribbons. Above included Grand Champion Hampshire Sow; Senior Champion; First Prize Produce of Dam and Get of Sire.	10 Championships 20 Firsts, Balance Seconds, Thirds, etc. Total 49 Ribbons. Above included Reserve Grand Champion Boar, Duroc and Hampshire; Junior Champion Boar, Duroc and Hampshire; Grand Champion Sow, Duroc; Reserve Grand Champion Sow, Duroc and Hampshire; Senior and Junior Champion Sow, Duroc; Champion Hampshire Barrow; also 1st prize Get of Sire, Duroc and Hampshire; 1st prize Produce of Dam, Duroc and Hampshire.

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pion. Barngrover was second with a sweet young thing. The spectators liked the fifth heifer better than the third on account of her quality and levelness.

Robt. D. Mousel, Cambridge, Nebraska, made the awards which follow:

Exhibitors: H. N. Barngrover, Santa Clara; J. A. Bunting, Mission San Jose; H. H. Gabie, Esparto; J. I. Cazier & Sons, Wells, Nevada, Diablo Stock Farm, Danville; Hereford Corporation of Wyoming, Cheyenne, Wyoming; Chas. Ruie, Jenner; Harold Rice, Paiai, Maui, Hawaii.

Aged bull—1, Hereford Corporation on Wyoming Prince; 2, Barngrover on Patrician 5th; 3, Ruie on Sonoma. Two year old—1, Ruie on Roehampton 34th; 2, 4 and 5, Henn on Anxiety Fairfax, Bocaido 12th and Vernet Fairfax 15th; 3, Hereford Corporation on Bonnie Laddie. Senior yearling—1, Cazier on Nevada Lad 8th; 2, Bunting on Alec; 3, Diablo Stock Farm on Junior Grove; 4, Henn on Wonder Lad 2d. Junior yearling—1 and 2, Hereford Corporation on New Era 2d and Wyoming Fairfax 4th; 3, Barngrover on Gracioso; 4 and 5, Henn on Bocaldo 24th and Fairfax Lad. Senior calf—1, Rice on Joe Duicinea; 2, Hereford Corporation on Wyhampton 22d; 3, Cazier on Nevada Era; 4, Barngrover on Piumas Lad 2d; 5, Henn on Beau Dandy 2d. Junior calf—1, Bunting on Mission Chief; 2 and 3, Hereford Corporation on Wyoming Fairfax 8th and Wyoming Fairfax 7th.

Aged cow—1, Hereford Corporation on Miss Dale; 2, Barngrover on Sue Clark; 3, Diablo Stock Farm on Lady Berendo 208th. Two year old—1, Hereford Corporation on Miss Rialto 2d; 2, Bunting on Miss Betty; 3, Barngrover on Mary Jane; 4, Gable on Bessie Donald; 5, Diablo Stock Farm on Sally Clark. Senior yearling—1, and 3, Cazier on Isis 2d and Venetia 2d; 2, Bunting on Lady Jane; 4, Diablo Stock Farm on Polled Laura. Junior yearling—1, Cazier on Standard Eyes 2d; 2 and 5, Hereford Corporation on Miss Dare 11th and Miss Dare 10th; 3, Bunting on Mission Girl; 4, Barngrover on Normalene. Senior calf—1, Hereford Corporation on Miss Era 14th; 2, Barngrover on Luiu's Pride; 3, Bunting on Mission Lass; 4, Cazier on Carnation Girl 2d. Junior calf—1 and 3, Hereford Corporation on Lady Fairfax 9th and Lady Fairfax 4th; 2 and 4, Barngrover on Patty Rainier and Patrician Sue; 5, Rule on Sonoma Lady.

Senior champion bull—Wyoming Prince. Junior champion bull—New Era 2d. Senior champion cow—Miss Rialto 2d. Junior champion heifer—Lady Fairfax 9th. Grand champion bull—Wyoming Prince. Reserve—New Era 2d. Grand champion female—Miss Rialto 2d. Reserve— Lady Fairfax 9th.

Aged herd, Hereford Corporation. Emporium special. Hereford Corporation. Young herd—1, Hereford Corporation: 2, Cazier. Calf herd—1, Hereford Corporation; 2, Barngrover: 3, Cazier. Emporium special for herd owned and exhibited by a California breeder, Barngrover.

Get of sire—1, Cazier; 2, Barngrover; 3, Hereford Corporation.

Produce of dam—1, Bunting; 2, Hereford Corporation.

The Angus

Only one herd of Angus had entries in the breeding classes, that of Congdon and Battles, North Yakima, Washington. This is one of the top herds of the country and their exhibit did much to attract favorable attention to the breed. Alec McDonald of the university farm placed the classes to the satisfaction of all.

The Fat Classes

The showing made in the fat classes was a distinct advance over former shows and marks considerable progress. California is not a feeding section, as yet, but the time is not far distant when thousands of cattle will be finished on the ranches of this state, and such shows as the one just held will hasten the day and encourage the production of higher class beef by demonstrating what can be done.

In the single classes all breeds were represented and among them were a few sensational animals that will be seen at Chicago next month.

The Shorthorn champion was a full brother to last year's Chicago champion and a half brother to the famous California Favorite. He is outstanding in any company, and the fact that he won the breed champoinship is no reflection on the quality of the other entries.

The university had the only Hereford entry, hut he was up to the standard of that institution. He is a particularly attractive steer.

Some competition was furnished the university Angus entries by Congdon & Battles, but the Northern entries lacked class to overtop the splendidly fitted college steers. The champion Angus, a senior yearling, was made reserve to the grand champion.

The college won all places in the grades and crosses, and uncovered California Perfect Lady, a veritable sensation that is destined to add fame to this state. California Perfect Lady, a senior calf, the result of a Hereford-Angus cross, is red with a white face. To attempt to describe her perfection of form and covering and quality would necessitate the coining of new and unused superlatives. Declared by all to be the superior of anything they have ever seen, she represents the acme of baby beef perfection and is a credit to California, the university, and a living testimonial to the ability of her feeder, Alec McDonald.

Dean C. F. Curtis of Iowa placed the fat classes. The awards follow :

Shorthorns

Yearling steer, spayed or martin heifer—1, Ormondale Co., Redwood City, on Sultan of Maplehill; 2, T. S. Glide, Davis, on Cheerful Maid 4th; 3, Thomas D. Miller, Hollister, on Introduction. Calf steer, spayed or martin heifer—1, University of California, on California Majestic; 2, Henry M. Elberg, Woodland, on Roselawn Jock.

Champion, California Majestic; reserve, Roselawn Jock.

Herefords

Yearling steer—1, University of California on California Prime Duke.

Champion, California Prime Duke.

Aberdeen-Angus

Yearling steer—1 and 2, University of California on U. C. Jock 3rd and California Thickset 3rd. Calf—1, University of California on U. C. Jock 4th; 2 and 3, Congdon and Battles, Yakima, Wash., on Ericaman C. B. 2nd, and Ericaman C. B 3rd.

Lot of three—1 and 2, University of California.

Champion and reserve, U. C. Jock 4th and U. C. Jock 3rd.

Grades and Cross-breeds

Yearling steer—1 and 2, University of California on California Grizzly and California Peer. Calf, steer or heifer—1, University of California on California Perfect Lady.

Lot of 3—1, University of California.

Champion and reserve, California Perfect Lady and California Grizziy.

Champions by Ages

Champion and reserve champion yearling steer, University of California on U. C. Jock 3rd and California Grizziy.

Champion and reserve champion steer or heifer calf, University of California on California Perfect Lady, and California Majestic.

Grand champion and reserve steer or heifer—of the show, California Perfect Lady and U. C. Jock 3rd.

SWINE BREEDERS' BANQUET

The State Swine Breeders' Association held a banquet in the banquet room in the building occupied by the California International Livestock Show Tuesday evening of the show. C. B. Cunningham, president of the association, presided, while short talks were listened to by Gordon H True, manager of the show, who spoke of the great value of the show to California, its international character, as it had attracted show herds from as far east as Nebraska, south to Arizona and north to Washington, and he trusted all breeders would lend their efforts towards making the show one of permanency. S. H. Green of the associated dairies told of the great value of the show to the dairy interests of the state and the feeding value of skim milk. Other speakers included Frank B. Anderson, Roy E. Fisher, Lincoln, Nebraska; W. F. McConnell. J. Francis O'Connor and Robt. F. James.

MARCH HOG SALE

John M. Bernstein and W. L. Haag & Son announce their combined sale of big type bred sows and gilts to take place at Hanford on March 13. It is expected this sale will attract many buyers who desire to build up their stock with some of the best blood offered in the San Joaquin Valley.

SUGAR SHORTAGE HITS THE BEE KEEPER

In many parts of the country there has been a lack of nectar during late summer and fall, and many colonies of bees are not provided with enough stores to last through the winter and enable them to build up properly next spring. This lack is especially deplorable just now because of the bright outlook for good hney markets next year. Bee keepers whose bees are not adequately provided with good honey stores in abundance should do their utmost to get granulated sugar from which a thick syrup can be made to take the place of the honey stores. Nothing but granulated sugar can be used with safety for this purpose.

The present shortage of sugar therefore creates a serious problem, and if bee keepers are unable to get sugar at this time, it will still be possible to save the bees by feeding a thick syrup of granulated sugar at the very first of the spring brood-rearing. It is best to feed in one lot rather than to extend the feeding over several days.

GATHERING STATISTICS

George Robertson, state statistician, is beginning work on the 1919 statistical report which will be issued by the California state board of agriculture. The report for 1918 is as complete as it could be considering the limited appropriation with which Mr. Robertson has to work. The appropriation is practically the same for the coming year, but efforts are now being made to secure even greater completeness to the coming report. California needs more complete agricultural statistics than the state board has yet been able to give. It is to he hoped that the next legislature will he more liberal.

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NATOMAS BARON DUKE
was easily grand champion Berkshire boar at the California International Livestock Show.
Judge Kildee and Dean Curtiss were enthusiastic praisers and said he would have been first at any of the big Eastern shows this season.
Another Triumph
for Berkshires was the winning by the Napa State Hospital of grand champion carload for fat hogs by Berkshires sired by a son of our premier sire
STAR LEADER
A few daughters and granddaughters of Star Leader bred to Natomas Baron Duke for spring farrow will be sold. That you may not be disappointed we advise the early placing of your order.
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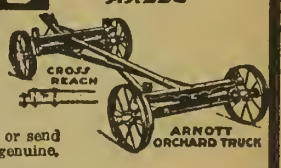
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November 19

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The boar everybody likes that sees him. First senior yearling and reserve grand champion boar at State Fair. His get is like himself with plenty of length, depth and smoothness—they have those big hams and stand on good feet. This is the kind we all like. Don't you want some of the same kind?

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has proven a sire of remarkable big type, growthy Poland Chinas. Recent sales, both public and private, stamp him as one of the leading sires on the coast. Don't you want one of the "make good" kind? Write for description of what you desire.

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a Poland China boar buy one of the right type and breeding. If you buy it from me you are assured of this. My great winnings at the State Fair is proof. If you write now you will get a carefully selected spring boar at the right price.

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Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

Shall Oleomargarine be Colored?

A committee was appointed to make recommendation as to what should be the attitude of the southern agricultural workers on the oleomargarine question. The committee consisted of W. R. Dodson, dean and director, Louisiana College of Agriculture; Dr. Tait Butler, editor Progressive Farmer; J. F. Duggar, professor of plant physiology, Cornell University, Auburn, Ala.; B. W. Kilgore, director of experiment station, North Carolina, and H. A. Morgan, dean and director, Tennessee College of Agriculture and experiment station.

The recommendations have been made and with them appear the apologies of the authors for the making.

It reads as if a number of oleomargarine lobbyists had made it, instead of men posing as being vitally interested in the advancement of agriculture in the South.

In fact the recommendation grants the one chief thing that oleomargarine interests have for a decade been lobbying and spending fortunes to secure. viz: Permission to color their product yellow in imitation of butter, so it can be sold as butter and at the price of butter.

After making a direct statement that present requirements relating to the coloring of oleo are unsatisfactory; that latitude should be given for the manufacture of oleomargarine in forms which will be most attractive to the consumer. the committee apologizes most courteously for the manner in which it has "double-crossed" the dairy interests of the South.

In doing so this committee grants that dairying is the form of live stock husbandry which tends to increase and take the place of meat production as population increases; that the cow is essential to the most economical disposal of rough by-products and crop residues of the farm; that she is essential to the most economical improvements and conservation of soil fertility; that the building of the dairy industry in the South is of much greater importance to the agricultural development of the South than is the extension of oleomargarine production, or the furnishing of such an enlarged market for vegetable oils as would be furnished by increased oleomargarine production. It is very evident that this is just "sop" to quiet those who are favorable to dairying for the committee recommends the one vital thing asked for by the oleomargarine interests and the one vital thing the dairy interests have continuously and vigorously opposed.

Of course, the committee recommends that oleomargarine be sold on its own merits and for what it really is and that the public he absolutely protected against deception. In fact it is recommended that a federal tax. sufficiently large to cover all expenses for proper control of grease camouflaged to look like butter, be levied.

But, recognizing all of these things why a committee of intelligent men posing as friends of southern agriculture should recommend the elimination of the one great measure that has and will protect the dairy cow from the unfair competition of the coconut tree, of the cotton seed, of the pea nut, of the steer and of all other producers of cheap vitamine-free oils surpasses the understanding of all true friends of the farmer who milks cows, whether he lives in the South North, East or West.

The above is from Kimball's Dairy Farmer. It is a graphic proof of the narrow selfishness of "farmers" of the South who do not happen to be dairy farmers.

Care Needed by Immunized Hogs

Improper care of hogs following their immunization against hog cholera, administered in public stockyards and after arrival at their destination, has resulted in losses which may be materially decreased. The following instructions for the prevention of losses are issued by the bureau of animal industry of the United States department of agriculture:

Shipments should be made promptly after immunization or should be delayed for not less than ten days. Truck hauls and shipments not exceeding 36 hours in length can be made promptly to advantage.

Avoid crowding; allow stocker hogs relatively more floor space than fat hogs.

It is important that drinking water be constantly accessible to the hogs, except in severe winter weather. If the car does not contain special water devices, a water trough, protected by slats over its top, should be securely fastened to the floor.

Little or no feed is necessary during the 24 hours following inoculation, but clean water should be accessible. Short-haul shipments need not be fed in transit.

When hogs arrive at their destination they should not be driven over the roads, but hauled from the car to the farm in wagons or trucks. Load and unload gently. Avoid chasing and unnecessary excitement in handling In summer load where there is natural woodland shade or shelter pens; in winter where there are suitable clean, bedded houses.

Protection against rain should be provided.

Do not permit wallows in pasture or lot. The use of wallows by recently inoculated hogs may produce pneumonia.

For the first two weeks, if it is in season, allow shipped hogs limited fresh pasturage. If alfalfa or other leguminous pasture is not available, a supplemental protein concentrate should be supplied. If no pasture, use self-feeders for soaked oats and separate ones for tankage or other protein concentrate. At the end of two weeks begin gradually to change to the permanent ration. Keep fresh, clean water always available.

Watch your hogs carefully each day for failure to feed or other signs of disease or sickness. Have a quarantine pen and place sick hogs in it promptly.

Short rations and a laxative may be used for slightly sick hogs.

The appearance of any disease in which a number of hogs are similarly affected requires immediate expert advice and treatment. Consult your veterinarian.

What is Breeding?

The following definitions have been adopted by the United States department of agriculture for use in the "Better Sires—Better Stock" campaign which it will conduct in cooperation with the various statos, beginning October 1:

Purebred:

A purebrod animal is ono of pure breeding representing a definite recognized breed and both of whose parents were purebred animals of the same breed. To be considered purebred, live stock must be either registered, eligible to registration, or (in the absenco of public registry for that class) have such lineage that its pure breeding can be definitoly proved. To be of good type and quality, the animal must be healthy, vigorous, and a creditable specimen of its breed.

Thoroughbred:

The term "thoroughbred" applies accurately only to the breed of running horses eligible to registration in the General Stud Book of England, the American Stud Book, or affiliated stud books for thoroughbred horses in other countries.

Standardbred:

Applied to horses, this term refers to a distinct breed of American light horses, which includes both trotters and pacors which are eligible to registration in tho American Trotting Register. Applied to poultry, the term includes all birds bred to conform to

the standards of form, color, markings, weight, etc., for the various breeds under the standard of perfection of the American Poultry Association.

Scrub:

A scrub is an animal of mixed or unknown breeding without definite type or markings. Such terms as native, mongrel, razorback, dunghill, piney woods, cayuse, broncho, and mustang are somewhat synonymous with "scrub," although many of the animals described by these terms have a certain fixity of type even though they present no evidence of systematic improved breeding.

Crossbred:

This term applies to the progeny of purebred parents of different breeds, but of the same species.

Grade:

A grade is the offspring resulting from mating a purebred with a scrub, or from mating animals not purebred, but having close purebred ancestors. The offspring of a purebred and a grade is also a grade, but through progressive improvement becomes a high grade.

PUTTING CALVES ON RATIONS

Work has recently been done at the University of Missouri College of Agriculture to determine the earliest age at which calves can be taken off skimmilk and still continue to make normal gains. The general plan has been to wean one group of calves at five months, another at four months, another at three months, and a fourth group at two months. Both before and after weaning, the calves were weighed and measured every ten days and the weights and measurements compared with normal weights and measurements for the breed.

Success has been attained by weaning both Jersey and Holstein calves at five months, at four months, and at three months, and practically normal gains were secured in almost every case when the calves were taken off a skimmilk ration at the age of sixty days.

The plan followed has been to get the calves to take a good ration of skimmilk with some hay and grain as soon as possible. For the first two weeks after birth a small calf such as a Jersey should receive from eight to ten pounds or four or five quarts of milk daily. This should be fed in two or three feeds a day. A large calf such as a Holstein may be given 10 or 12 pounds daily. When the calf is two weeks old it can be gradually changed from a ration of whole milk to one of skimmilk by substituting an equal amount of skimmilk. A complete substitution can be secured in a week or ten days. When this substitution has been completed a medium-sized calf should be receiving about 12 pounds of milk daily. From this time until two months old a calf should receive from 12 to 15 pounds of skimmilk daily, depending upon the size and condition of the calf. During this period the calf must be taught to eat hay and grain. The calves on experiment were fed liberally by this plan until about 55 to 60 days old at which time they were taking an average of about one pound of grain daily. The amount of skimmilk was then reduced a half and the amount of grain and hay somewhat increased. About a week or ten days later the rest of the skimmilk was withheld provided the calves were doing well. At this time the calves were about 65 to 70 days old and were receiving a ration made up entirely of alfalfa hay and a grain mixture.

FISH MEAL AS A FEED FOR HOGS

In an experiment recently completed for the animal industry division, North Carolina Experiment Station, Earl Hostetler has demonstrated that fish meal is as efficient as tankage as a protein feed for hogs, and is not so costly.

In the experiment, he used two lots of hogs of six each, which were fed for a period of 119 days. The first lot was fed a ration consisting of nine-tenths of shelled corn and one-tenth of tankage. The average initial weight was 131.83 pounds. The average final weight was 244.50 pounds, or an average gain for the period of 112.67. The average daily gain was .95 of a pound. This lot consumed 3,610 pounds of feed, or 534.02 pounds of feed for every 100 pounds of gain made. The cost of the feed for every 100 pounds of gain was $20.10.

Lot No. 2 was fed a ration consisting of nine-tenths of shelled corn and one-tenth of fish meal. The average initial weight was 131.17 pounds. The average final weight was 249.67 pounds, or an average gain for the period of 118.5 pounds. The average daily gain was 1.00 pound. This lot consumed 3,610 pounds of feed, or 507.73 pounds of feed for every 100 pounds of gain made. The cost of the feed for every 100 pounds of gain was $18.86.

The prices of feeds used in the experiment were:

Shelled corn, $2 per bushel of 56 pounds; tankage, $110 per ton; fish meal, $100 per ton.

A mineral mixture consisting of charcoal, lime, salt, sulphur and copperas was kept before the animals at all times, with lot No. 1, or the tankage lot, consuming 14 pounds, and lot No. 2 consuming 31 pounds.

WINTER CROPS FOR SPRING SILAGE

Farm Adviser Jungerman of Stanislaus County states that last spring a number of dairymen in the Modesto district made excellent silage from oats and barley. The crops may be planted during the winter months and may fill in after all the corn or sorghum silage has been used up.

The amount of seed sown is about the same as when planting these crops for hay. Canadian field peas or Oregon purple vetch may be sown with oats or barley in various combinations depending uopn what proportion of legumes is wanted in the silage. One part legume to three parts of either barley or oats makes a good combination. Those who failed to fill their silos this fall may substitute the foregoing for corn silage while waiting for fall silage crops next year.

MARK THIS DATE

Wednesday November —19—

Poland China sale of 50 bred sows and gilts on

Fresno Fair Grounds

East or West no greater blood lines can be found.

20 breeders consigning to this sale.

Sale starts at 12 M.
Lunch at 11 A.M.
Geo. W. Bell, Auctioneer

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Business Herd Hampshires

The pioneer grand champion herd of Hampshires is directly responsible for the growing interest in the Hampshire breed today.
It has brought to light the winning blood lines in our big shows. It has furnished foundation stock for numerous new herds throughout the state and is still doing so; 200 pigs bred bred sows, and sows with litters for sale.

Llano Vista Rancho, F. A. Langdon, Mgr., Perris, Cal.

The Poplars----Hampshire Headquarters

Our reserve grand champion sow Wavelet at the big Los Angeles show is the mother of 8 little Wavelets—a flourishing family. We won 1st on boar and 3 sows bred by exhibitor, also 3 other herd prizes. We were in the money on aged boar, twice on junior yearling boar, and once next the top on junior boar pig. All young stock the get of our great boar, The Harvester Again. Write us your wants.

C. J. Gilbert Lancaster, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147 at head of our great herd of brood sows.

HARVEY'S CHOICE
Grand Champion Boar
at Los Angeles 1919

LOOKOUT CHEROKEE
Grand Champion at Liberty Fair
SIOUX QUEEN
Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager Redlands, Cal.

A Few Big, Roomy, Arch-backed Sows and Gilts of Choice Breeding For Sale—Bred For Fall Litters

O.U.R. Hampshire Swine

Weanling pigs of both sexes at very reasonable prices. Visit the ranch and see these animals.

Ortega-Underhill-Rancho THOS. T. DINSMORE, Mgr. Santa Barbara, Calif.

Three fine Junior Yearling Boars of unsurpassed breeding and high individual merit.

WEANLING HAMPSHIRES READY NOW BRED IN THE PURPLE

Messenger, Hawkeye and Cherokee Lad strains represented. These pigs are the get of such sires as the $3,000 Gen. Tipton's Masterpiece, Exalted Ruler, Admiral Blythedale, and Draper Laddo. Prices reasonable, and will be furnished on request.

Hampshires are the choice of all breeds by the big packing houses of the country quick growers, prolific mothers, hardy foragers.

Infuse some of our grand championship blood into your herd. Breeding farm at Serena, Santa Barbara County. Address

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CORN BELT HERD HAMPSHIRES

At head of our great herd of Hampshires is Black Beauty, by Young Senator. Black Beauty won the blue ribbon at the big Los Angeles show. He is by same sire as the sensational "Big 4" junior yearling sows seen at Los Angeles, one of them, Florene 2d, being grand champion of the show.

Our lineup of brood sows is in keeping with the great sire in service. Young stock for sale. Letters promptly answered.

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Big Type Poland Chinas

of both sexes by these two great boars, LONG JUMBO and YATES' BIG ORPHAN at reasonable prices. Boars ready for service—sows for spring litters. Every animal guaranteed to satisfy.

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have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

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C. L. HUGHES, Sales Mgr. Sacramento, Cal.

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Beware of imitations. You cannot afford to have anyone experiment on your animals.

Accurate use of the GENUINE O. M FRANKLIN Blackleg Vaccine positively protects against Blackleg.

Be absolutely safe in using the ORIGINAL and GENUINE manufactured by THE KANSAS BLACKLEG SERUM CO. under the direct supervision of Dr. O. M Franklin the ORIGINATOR.

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From the Producer to the Plate

By James De Camp

OBSERVANCE of "Farm to Table Week" begins today, the campaign closing on November 22. The purpose of this movement, nation wide in scope, is to bring the producer and consumer to terms of greater intimacy that the two together may take a swat at the high cost of existence.

The route from the soil to the stomach is usually devious and roundabout, involving freight handlers, middlemen, wholesalers and retailers. The "Farm to Table Week" idea reduces the intermediate processes to three simple factors—the farmer, the market basket and the kitchen range.

The program, which has received the indorsement of hundreds of automobile clubs, motor car manufacturers and dealers, farmers organizations and other bodies, urges every owner of an automobile to drive to the country and purchase produce and dairy products direct from the producer.

All farmers having goods to dispose of are asked to post signs along the highways calling attention to their wares and to keep a supply ready at the roadside. Butter, eggs, chickens, turkeys, pumpkins, potatoes, squash, carrots, cabbage and other eatables should find a ready sale at prices which, although far below city quotations, afford a neat profit to the grower. With Thanksgiving approaching the demand should be especially heavy.

An opportunity will be afforded for the disposal of certain foodstuffs which, because of lack of transportation facilities or the high cost of marketing, would otherwise go to waste or be used for stock feed. It is estimated that in California alone there are many tons of foodstuff in the hands of farmers which will never be utilized unless the consumer jumps into his machine and goes a-marketing on the highways. Especially is this true of certain varieties of squash and the casaba.

Those behind "Farm to Table Week" believe that both the public and the farmer will find the wayside market a source of saving and convenience. If adopted on a large scale this method of dealing would inevitably drag down the skyrocketing prices of certain necessities by enlarging production and utilizing every ounce produced. Then there is the added incentive to the buyer of getting things fresh from the soil or just out of the churn. Often delectable varieties of produce can be bought that are not available in the city markets.

Several Southern California farmers are making a specialty of squash at about one-half the regular price. They bring about this reduction by cutting the vegetable in two and cleaning out the seeds, drying the latter for the seed houses or for their own use. Passing automobilists are delighted with this arrangement while the money taken in by the farmer is as good as found, since, heretofore, the eatable portion of his seed stock has been almost a total loss.

At present green corn, which sells in city markets for 60 cents a dozen, can be bought at the roadside for from 35 to 40 cents. Melons and many other good things to eat are priced in the same proportion. A man with a large family can often save the price of five gallons of gasoline by trading direct with the farmer.

At the same time the person who grows the stuff is making his usual profit without the bother of packing, bunching or crating and the expense of transportation and commissions.

STEADY EMPLOYMENT

Smith—"Who are you working for now?"

Jones—"Same people—wife and five children.—The Passing Show.

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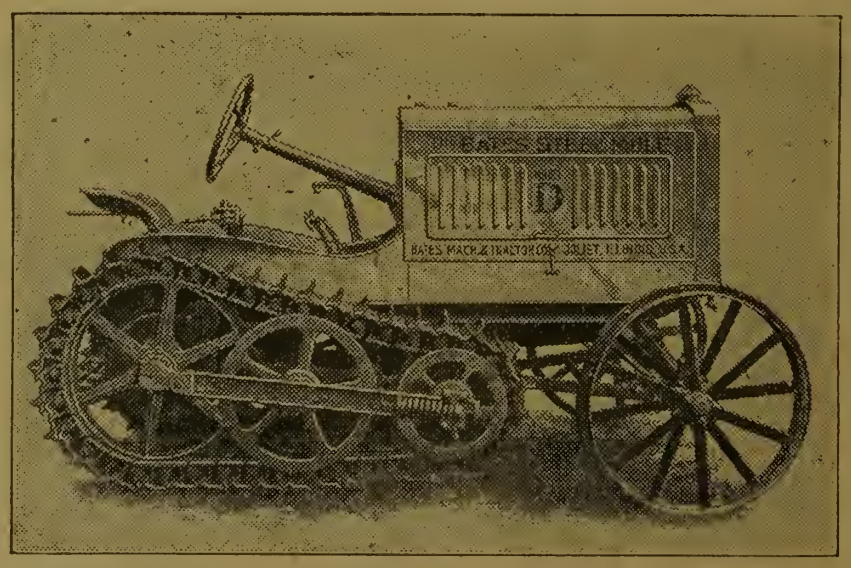

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"Every owner a satisfied booster"

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The "Steel Mule" does everything that any tractor can do and a great deal that others cannot do

PLOWING

The "STEEL MULE" is a 3-plow tractor, with enough reserve power to pull its plows under almost every condition. A good day's plowing for the MULE is 10 to 15 acres. In a plowing test held by the Ohio State University, it outclassed all other tractors, by plowing at the rate of 13 4-5 acres per 10-hour day. A record of 14½ acres a day was made at Salina, Kansas, in moist gumbo stubble; the fuel cost in this instance was only 18 cents an acre.

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The "STEEL MULE" handles a 10-foot disc, set at full cut and weighted, with drags as a regular load. Under ordinary conditions there is more than enough power to carry the tools at 3½ miles per hour on ½ gallon fuel per acre.

SOIL PACKING IMPOSSIBLE

It is absolutely impossible to pack the soil with the Bates "STEEL MULE." The machine's weight is evenly distributed over the broad surface of the crawlers; the ground pressure is only 3½ pounds per square inch.

ORCHARD AND BEET WORK

The Bates "STEEL MULE" is the ideal Tractor for Orchard Work. It is narrow and close to the ground, making close up work possible without injuring branches. The Tractor turns in a 16-foot circle. It straddles and pulls out two rows of beets without any alteration.

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Besides being a perfect field machine the "STEEL MULE" does efficient belt work. It will handle satisfactorily your separator, ensilage cutter, irrigating pump, wood saw, feed grinder, electric generator and any belt driven machinery which does not exceed the MULE'S guaranteed 22 horsepower.

HOW BUILT

The Bates "STEEL MULE" is built entirely of steel: the frame of pressed steel, the wheels and tracks of crucible steel, and all gear housings of cast steel. The "STEEL MULE" is fitted throughout with Timken and Hyatt Roller Bearings, placed high out of the sand and dirt and enclosed in dust and oil proof casings.

Sales are very heavy now, and immediate delivery is being made; prompt delivery on orders received after January 1 is indefinite.

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Big orders a specialty; small orders appreciated.
Write V. R. ALLEN, Seaford, Sussex Co., Del.

WESTERN BERKSHIRE CONGRESS BANQUET

The Western Berkshire Congress held a banquet on Monday evening, November 3, in the banquet hall of the building in which was held the first California International Livestock Show. In the absence of the president, A. B. Humphrey, the meeting was presided over by the former president, W. M. Carruthers. Dean Curtiss of the Iowa agricultural college and president of the American Berkshire Association, spoke relative to the present condition of the association and said that at the close of the present year the association would be in better condition than it had been for years. He congratulated the California breeders on the excellence of the animals they were showing and the high quality they were breeding.

Gordon H. True, manager of the California International Livestock Show, thanked the breeders for their cooperation and support of the show, called their attention to the San Francisco business men who by their liberal donations had made this great show possible. He also said he hoped the breeders would in some way express their appreciation of their efforts so that the show would be made a permanent one. Frank B. Anderson, publicity manager of the show, was also one of the speakers, as was W. F. McConnell, J. Francis O'Connor, Charley Barrows, J. L. Thatcher, Mrs. Hardy, Charley Mauer and George Upham.

Sale Extraordinary

Circumstances over which I have no control force me to sell now instead of next spring as I intended

50 Head of Registered Poland China Hogs

Consisting of a few bred sows and boars, all the rest are open gilts just ready to breed for March litters. This is by far the choicest bunch of pigs I have ever owned. The cream of the East and West in breeding. I surely hate to part with them but my loss is your gain. Sale on

Saturday, November 29, 1919
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Free Lunch at 11:30
Sale begins at 12:30
Everybody Come

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Col. G. W. Bell, Auctioneer
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Grand Champion Duroc Boar
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He defeated six State Fair Grand Champions at the National Swine Show

He's the Tallest Boar in the West

We will have a few sows bred to him for sale next month

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Napa California

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Duroc-Jersey bred sows and gilts. These are the kind you have been wanting to get and we still have some of the real good ones left. Farmers and dairymen start now with the profit making hogs. We deal fairly and our prices are reasonable. Duroc-Jerseys from the Key Herd of the Pacific Coast make good everywhere. Write today for full particulars.

H. P. Slocum and Son
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Butte County Herd
of the profitable kind of Duroc-Jerseys. Fall pigs by Uneeda Orion C., out of large, big boned sows, at reasonable prices. Some from prize winning sows. Write for full particulars.
W. V. BENNETT Nord, Calif.

Gardiner Duroc-Jerseys
are the kind good judges and our satisfied customers say are the right kind. We have formed the habit of selling Duroc-Jerseys that make good. If you want this kind write us.
The Gardiner Ranch R.F.D. 4, Sacramento, Calif.

WHAT DO YOU WANT?
We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.
George Junior Republic Chino, Calif.
also Breeders of Holsteins

Greenwood Farms
GOOD JUDGES
say our young Duroc-Jersey boars are the best they have seen this year. We can't keep them all so will sell our prize winners. They are sired by JOHNSON'S DEFENDER JR., one of the Coast's greatest sires. Let us describe one to you.
H. C. Witherow, Mgr. Live Oak, Sutter Co., Calif.

ADD MORE SIZE

prolificacy and early maturity to your herd. We are now offering some excellent young Poland China boars, correct as to type and breeding, that will add these good qualities to your herd. Pork producers will find these boars just what they have been looking for. Write immediately and I will send you full particulars. Prices reasonable.

Les McCracken *Ripon, Cal.*

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

RIVERSIDE-SAN BERNARDINO BEE NOTES

By A. F. Clarke.

For the first time in the history of the honey business in California, four carloads of cotton blossom honey was sold through the California Honey Producers Cooperative Exchange the past season. This honey was produced in the great Palo Verde and Coachella valleys in Riverside County.

This was only one of the interesting items made public at the meeting of the Riverside and San Bernardino Counties local of the exchange, held here this week.

As generally known the past season has been a poor one in Southern California, owing to the light rains and cold spring. Despite this handicap, however, the bee men of the two county locals report an output of 6,177 cases of honey valued at $150,000. The two counties in good years produce about $700,000 in honey. Of this year's honey harvest over 2,700 cases valued at $66,000 have been sold to date. The average price received has been 19½ cents a pound.

Most bee keepers will have to feed their bees during the winter and the members of the local will endeavor to secure 100 tons for the two counties from the state exchange.

The local elected officers as follows: Directors, R. Powell, E. W. Horne, Riverside; L. L. Andrews, Corona; John Mack, Bloomington; H. T. Wagner, Redlands.

Ten locals comprise the state exchange.

TREATMENT OF SMUTTY SEED WHEAT

Very smutty grain probably should not be used for seed unless treated by the soaking and skimming method. If not much smut is present, the sprinkling method may be adopted and is more easily handled. The grain should first be thoroughly recleaned by running it through a good fanning mill several times if necessary. All shriveled grains and especially all smutted kernels should be removed.

The formaldehyde solution is made by stirring ono pint of formaldehyde in 40 gallons of water. This will treat about 50 bushels of grain. In the sprinkling method the wheat is spread out in a thin layer and sprinkled with the solution while being shoveled over and thoroughly mixed so that all the kernels are made fairly wet. It is then piled up and covered with canvas or blankets for two hours, then spread out again and stirred occasionally to hasten drying.

Treated grain should be sown as soon as possible, by all means within 24 hours, or a poor stand is likely to result. Treat in small lots only, not more than can be sown in a day. If this is done in the evening, sowing can begin early the next morning. Another plan is to treat in the evening what can be sown the following forenoon, and in the morning what can be sown in the afternoon.

FOREIGN TRADE CONVENTION

American business men are already manifesting keen interest in the next National Foreign Trade Convention, which is to be held in San Francisco May 12 to 15, 1920. This gathering promises to be of exceptional significance in the period of readjustment and comparative uncertainty through which commerce is now passing. The program will be so formulated as to have a vital bearing on the essential aspects of over-sea markets and their vigorous, effective cultivation by producers in the United States. One particularly important feature will be the emphasis given to the problems of Pacific trade. Meeting at one of the great American ports that look toward the Orient and the South Seas, those in attendance at the sessions will keep steadily in mind the desirability of increasing our knowledge of that region and of devising more adroit and comprehensive means for sharing in its trade. Those in charge of the arrangements for the convention are therefore issuing a special invitation to all American business men who are established in any of the countries on the shores of the Pacific. It is earnestly hoped that many will be present and that, through the resulting interchange of advice and information, much may be accomplished for the furtherance of American interests in all Pacific lands.

SORGHUM TAKES THE PLACE OF SUGAR

With sugar advancing in price it is to be presumed that syrup and molasses will be in stronger demand. In fact the situation may call attention to the advantage of growing more sweets in the form of sorghum molasses. Within the past three or four years this awakened interest has resulted in the establishment of several mills. One of these operating at Pomona is greatly enlarged and improved this year. A limited amount of syrup was made in 1918 and this year a new mill was brought from the East and crushing is proceeding as rapidly as possible. The capacity of this mill is about 300 gallons per day and for the season perhaps well up toward 10,000 gallons. The largest grower in Pomona Valley has about 15 acres. The mills are taking the sorghum as it is delivered and crushing and producing the syrup for around 50 cents per gallon. An acre will produce anywhere from nothing up to 300 gallons according to the care given and other factors; a fair average perhaps is around 150 gallons. Besides the molasses there is a possible production of 1,000 pounds of seed and several tons of bagasse, or crushed pulp of the stalks, which is sometimes cut and put in silos and fed to stock and sometimes dried and used for fuel. Again it makes a good dressing for land where a mulch is desired.

California is now growing three varieties, Orange, Honey and Amber. The Orange is one of the best producers because it stools and is very prolific, but it requires an exceptionally long growing season and must be planted early. The Honey requires four months to mature. Amber is the quickest maturing and is sometimes planted after oats or barley has been cut.

AGRICULTURAL CLUB CONFERENCE

The annual conference of members of grammar and high school agricultural clubs was held in Davis, October 16-18. The conference was attended by clubs from nearly every county in tho state, some counties sending only one or two representatives while others like Kern and Tulare chartered busses and sent full delegations. There were 302 attending the three days' session. They were furnished with tents on the state farm, where with picture shows giving agricultural practices, inspection visits to irrigation demonstrations on the farm, and to the barns of horses, dairy and beef cattle, hogs and sheep, and with judging demonstrations, they put in a most valuable three days. Of course there were addresses, Dean Hunt attending and making one. Other events of interest were athletic sports, songs, yells, and the erecting of tents after they blew down in the small hours of one of the nights.

The transcontinental trip taken by the clubs a few years ago will not be repeated until transportation costs return to normal. Even the state trip this year was so expensive that the attendance from the extreme southern end was not so large as anticipated.

HOPS

Fifty per cent of California's 1919 hop crop has been contracted for by buyers in "wet" countries, principally France, England, China and Japan, it is announced by Sacramento Valley dealers. The first shipments of hops were made at 50 cents a pound. An increase of this figure is expected, for there is an exceptionally strong demand for hops, not only in foreign countries but by brewers throughout the United States. As big a quantity of hops is required in the manufacture of "near beers" as in the making of beer of high alcoholic percentage.

The hop crop in the Sacramento Valley this year will total 40,000 bales or 8,000,000 pounds. It will be worth $4,000,000. In the rest of the state the yield will be 30,000 bales, making a total of 14,000,000 pounds for the whole state, worth $7,000,000. The Sacramento Valley crop is 15 per cent greater this year than in 1918, the acreage for this section being 5,200. After the crop in 1917, when the hop market was demoralized due to the war, many growers curtailed their hop acreage, planting their lands to other crops. When the prospects for a high market were good early last spring, the acreage was increased again.

The great hop fields of France and Belgium were devastated during the war while the hop acreage in England was reduced one-half. For this reason there is a strong market for the California crop. California hops will be sold in England this year, it is reported, under Belgian labels, for the variety produced in this state is identical with that of the fields of Belgium.

AIRPLANE SCOUTS DIE

The state department of agriculture in referring to the recently chronicled death of two airplane scouts for pink bollworm says:

"This work has received a serious setback as a result of the fatal accident on August 7, in which both Lieutenant Tillisch, pilot, and E. L. Diven, technical observer lost their lives. These flights had been conducted for a considerable period without serious accident. The danger of this service was fully recognized, but it was hoped that the federal horticultural board's record, under which the flights were conducted, would be a clean one, except as to accidents of minor character. Both Lieutenant Tillisch and Mr Diven were men of high character and undertook the work with a full realization of the personal risk

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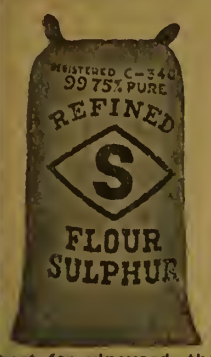

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PLANT WHEAT

A communication from the department of agriculture at Washington, D. C., under date of September 20, suggested that "more wheat should be sown this fall than was the average in pre-war years, but not so much should be sown as was sown last year." A look over the world wheat fields indicates a greater increase in production and the "feed-the-world" slogan is necessarily recalled to a limited extent, so the department gives warning that there need not be over production in any one direction. If there is over production it is reasonably sure to result as did the over production of beans at the close of the war. However, this was not so much a matter of over production as it was an importation of Asiatic grown beans. This importation, brought about by culpable people, who it is charged made personal gain in the matter, resulted in millions of loss to California bean growers.

As to winter wheat, the department suggests that 42,000,000 acres be sown this fall to this crop, and that 20,000,000 acres be sown in 1920 to spring wheat, making a probable aggregate production in 1920 of 830,000,000 bushels, of which 200,000,000 bushels would be available for export after home needs are met. This production would approximately equal the average yield of wheat in the United States for the five years 1915 to 1919 inclusive. The five year average is thought to be a safe guide for American farmers.

COTTON FUTURE IN SAN JOAQUIN

As to the future of cotton growing in the San Joaquin Valley the Weekly News Letter of the state department of agriculture reports the estimate of a Texas cotton grower who says: "With no frost until October 10, the Tagus field will produce from a bale to a bale and a fourth to the acre." He bases his estimate on the condition of the soil and number of bolls to the plant. He found many plants bearing more than 200 bolls and stated that in parts of Texas from 45 to 50 was considered good cotton. The average yield in the southern states is 75 bolls per plant.

DEPENDABLE POTASH

In parts of this country much trouble is being experienced with potash because of the presence of borax. It has proven particularly damaging to potato plants. In the Eastern states it is not feared that its presence will permanently injure the land, though the crop is reduced on many fields where the impure potash was used this year. Borax, being easily soluble, will be carried away and will not again be in the soil in concentrated form. In states west of the Mississippi, in many of which alkali is to be seriously considered, growers will be very careful not to add borax to their present troubles.

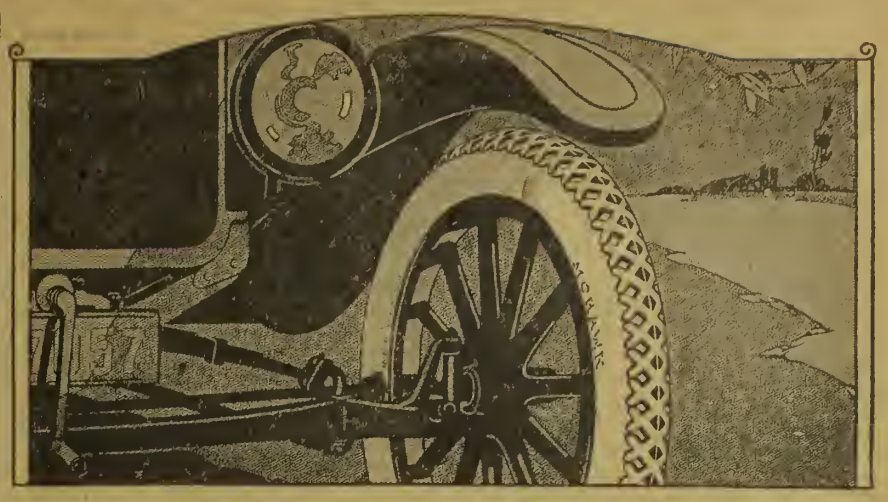
ITALY NEEDS IMPLEMENTS

The Italian minister of agriculture estimates that Italy is now in need of 70,000 agricultural implements, as follows: Plows, 3,000; planters and seeders. 20,000; weeders, 3,000; mowers, 9.000; reapers (ordinary), 500; reapers and binders, 2.000; thrashing machines, 1,500; rakes, 2.000; tedders, 800; hay presses (power), 500; portable engines and boilers, combined, 1.000. Before the war Germany and Austria-Hungary furnished many of these. Production costs are now so high it is not thought that European manufacturers will he able to compete with the large scale production of American factories.

THE QUEEN A GARDENER

Albert R. Gould, who regularly writes the gardening calendar for Cultivator readers, was honored in being selected as escort for the Queen of Belgium when she visited the gardens of Santa Barbara. Mr. Gould was chosen because of his familiarity with rare plants which were to be shown to the queen. Mr. Gould writes: "I found Her Majesty a keen gardener, very delighted with California plants and flowers."

Destruction of grasshopper eggs by fall plowing, disking, or harrowing is recommended wherever practicable.



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72 A., NEAR CITY, $2300, WITH PAIR HORSES AND 5 cows, 2 yearlings, long list tools included for quick sale. On main road, 2½ miles depot, high school, milk station, 7 miles city. Easily worked, productive fields, 10-cow wire-fenced pasture, estimated 1000 cords wood, apple orchard, pears, plums, cherries, 8-room house, barn, garage, poultry houses, $2300, part cash gets all. Details page 28 Strout's Fall Catalog, 100 pages Farm Bargains 23 States; copy free. STROUT FARM AGENCY, 831 A G, N. Y. Life Bldg., Kansas City, Mo.

For Sale—46 Acres, Highly Improved, near Ontario, California, on boulevard; 6-room house, barn 6 horses, stable 40 cows, piggery 500, two 100 ton silos, pumping plant, gas engine, Ford truck, farm implements, etc.; 3 draft horses, cow, chickens, rabbits, other stock sold buyer at market price. Fully equipped for hog or dairy ranch, or both. Cash paid for improvements more than price asked. Panoramic photo and full details mailed. O. T. NICHOLS, Ontario, California.

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Prune and Apricot Orchards for sale, all sizes; full bearing, well located, with improvements, for $1,500 to $2,000 per acre. DAIRY RANCH 170 Cows, 432 acres leased land, near town and depot. 70 ACRE MOUNTAIN ranch land; good; 1,000 cords oak wood, $40 per acre. 51 ACRE best pear land, house, barn, lots of water, good location; $375 an acre. Address John G. French, Santa Clara, California.

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POULTRY

BABY CHICKS
for sale. We are now hatching 5000 chicks each week for the fall season of Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas, Brown and White Leghorns. Next spring we expect to hatch 25,000 of the above mentioned varieties of chicks every week, and we will also have limited numbers of White Minorcas, Buff Leghorns, White Rocks, and White Wyandottes; ducklings and turkeys in season. Our chicks have brought us many repeat orders from our customers for next season and we are now booking orders for 1920 delivery; if you are in the market for chicks we would suggest that you place your order now; a small deposit will hold your chicks. REDWING HATCHERY, 2030 E. Florence Avenue Los Angeles, California.

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LIVE STOCK

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NATIONAL ORANGE SHOW

The dates of the coming orange show are February 13-23. The executive committee chosen to manage the show is: Joseph Strawser, George N. Haven, John Andreson, Jr., Rex B. Goodsell, R. C. Harbison, Edward Wall, W. T. Smith, L. A. Murray, A. G. Kendall, S. W. McNabb, J. B. Gill, W. O. Harris, W. M. Parker, B. L. Holmes, J. D. Gentry, E. J. Field, O. F. Heilbron, John Woodhouse, J. W. Curtis, L. A. Stromee, Z. T. Bell, E. H. Sharpe, H. C. McAllister and W. S. Shephardson.

Household Department

TANKS INTO TRACTORS

There's a chugging in the low-grounds and a popping in the plain,
Spouts of smoke are wreathing, rising from the cornfields and the cane.
Tanks are turned into tractors—may prosperity increase—
Engines of destruction shifted to the needs of times of peace.

Work of twenty mules is concentrated in one mass of steel,
And exhaust is only heard—there's no exhausting one can feel—
New team doesn't waste a third of all his time to just produce
Food to feed himself—the fuel from the depths supplies the juice.

Talk of beating swords to pruning hooks and spears into plows,
Utilizing wartime implements for peace pursuits! Say, how's
Turning tanks into the plough-teams, saving labor, time and sweat—
That's efficiency outclassing all that ever was, you bet!—D. G. B. in Macon Daily Telegraph.

STEAM SHOVEL NUMBER 13

CALVIN EWING was a civil engineer from Cornell. The opportunity offered by the greatest engineering feat in the world had attracted him to the Canal Zone. There civil engineers were as numerous as the mosquitoes. He had taken the best thing offered him. He was craneman of Steam Shovel No. 13, in the Bas Obispo ditch.

When his men started up the banked fires in the mist of the early morning, he found that the steam somewhere was escaping. A careful search disclosed the exhaust wide open and broken. Valuable moments were lost ere the damage was repaired. Every moment counted now, if he was to win the bonus.

He thought the occurrence suspicious. When he found next morning that over-night his fires had been thoroughly extinguished and the furnace saturated with water, he knew it was the work of some criminal hand. Someone was tampering with his machine during the night. It was to keep him from winning the bonus.

He approached Dailey, the fireman of his crew, who already had helped him out of one scrape.

"I'm going to sleep here tonight," he said.

A faint light of suspicion was in the workman's eyes.

"You better," he said. "Starratt was saying last night that he thought you were monkeying with your own machine to keep from winning the prize. It looks suspicious, I tell you, sir. All the men think so. And I've got a wife and children up in the States. The bonus means something to me."

Ewing made a rude bed of blankets in the cab of the huge steam shovel and drowsed through an uneventful night. No one approached the machine. Nothing went wrong the following day.

"Now it's up to you, Dailey," Ewing said to the workman. "I've proved for my own benefit that someone was tampering with the machine. It's up to you to learn likewise. You sleep here tonight."

Early that morning, just as false dawn was graying the east, Dailey woke to the pit-pat of approaching footsteps. Through the mist he made out Starratt coming toward the machine, even as the craneman saw him.

"Heilo, Dailey," said that frog-mouthed individual. "Just thought I'd drop around and catch Ewing at his tricks. I believe he is putting his own machine out of whack. I wanted to nab him at it."

"Starratt's the culprit," said Ewing when he appeared and Dailey told him of the occurrence.

"I think the same, sir."

"Well, I'll tell you what we'll do We'll make sure tonight. We'll keep up steam. Also, we'll loosen the step of the cab. We'll fix a string from the steam exhaust of the engine to the step. We'll turn the exhaust to face that way. Then, if any one places foot upon the step, it will fail and release the exhaust and shoot a stream of steam into his face. Inside in the cab we'll lie low till then, and at that jump upon him."

Through the long dark tropical evening they lay outstretched in the cab and waited. Nothing happened.

"Starratt's afraid to go back to his old tricks so soon," said Ewing.

They rigged up the contraption on the following evening. It was the night before the final day of the try for the bonus. Everybody was out of the race by now, save only Ewing and Starratt. Ewing had worked superhumanly. The race had dwindled down to the two. They were running neck and neck, despite all the mishaps that had occurred to Ewing's machine.

The shriek of escaping steam awakened the civil engineer and his workman early next morning. There on the ground near the fallen step and writhing under a blast of superheated water was the craneman, Mike Starratt.

Ewing jumped down and lifted him to his feet. Dailey shut off the steam

"Well, we've got you red-handed this time, Mike," said Ewing. He was in complete control of himself. "Now, I'll tell you what I'm going to do. I'm going to win that bonus from you. I won't say a word about this. But after I get the bonus, watch out."

Starratt approached the division boss of the steam shovel gang. A sly smirk was on his face.

"If you please, sir," he said, "I'd like to move my machine up a bit."

"What's the matter with the old station?" asked the blond Scandinavian boss.

"It threatens to landslide, sir. A regular overhanging cliff, sir, right above the machine."

"Your fault, Starratt. You've worked ruthlessly. You should have kept to the berme of the bank. I know. It's that bonus. I wish Smith would cut it out."

"Can I move, sir?"

"Oh, yes. Go ahead."

"And, sir—"

"Well?"

"Someone has to tackle that cliff sooner or later. Why not an expert workman? There's Ewing, now."

The hint was sufficient.

"That's true," the boss said thoughtfully. "I'll tell you what you do, Starratt. You take Ewing's station. Tell him to move up to yours. He's the best man I've got. I'll give him the chance to prove it there."

When Ewing heard, he realized the plot afoot. Starratt was in hopes that a landslide would ruin his chances of beating him and winning the bonus. His accusation then against the craneman would sound as though he were incensed at losing and took this means in revenge. His words would be discredited. Starratt would be victor all around. Quite probably Ewing would be kicked off the works as a spy.

But the realization of the odds and forces against him made Ewing work all the more carefully and scientifically. To lessen the danger, he worked in a fever of haste and anxiety from the top and sides of the overhanging cliff.

Meanwhile, with the tropical heat and the tension of waiting for the landslide, Starratt was in a damp sweat. Near noon he could wait no longer. He made along the cliff to fathom how it was that there was no landslide.

But there were landslides. Not large avalanches, but small flows of detritus down the bank. When Cal from the cab saw Starratt far above and running toward him, he waved frantically for him to turn back There was constant danger from the loosening of soil.

A new infernal idea had laid siege to Starratt's brain. He would run

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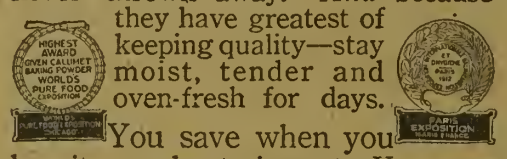

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BEST BY TEST

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along the top of the cliff. It ought to be enough to loosen the whole embankment. He realized how little was needed to send the whole cascading down upon Ewing's shovels. A disturbed boulder, the slight trembling under his footsteps, a hair-fine shock would work the catastrophe.

It did. With a sudden sweep, from immediately under his feet, the whole outer crust of the cliff slipped and bounded, helter-skelter, down toward the machine.

He went with it. It seemed like awful justice. Over and over he went. All about him catapulted earth and huge boulders. Any one of those boulders could crush the life from him.

Down in the cab, Cal Ewing retained his presence of mind. He peered through the flying shale and dust. He saw Starratt rolling and tumbling under the racing dangers. He pulled the lever. The huge shovel swung out and up. He brought it over the spot to which in a breath Starratt's body would fall.

The jaws of the iron monster yawned. Starratt fell beneath it. Down it swooped. It locked in its cavernous depths man and shale and boulders. Then it swung out. As by a miracle, Starratt's life had been saved.

When Starratt came to, he found he was looking up into the face of Cal Ewing. The young fellow had been mopping his brow with a damp cloth.

"You win, kid," he said. "You're white clean through. Cricky! that was some handling of the shovel!"

For answer, Edwing modestly reached down his hand and grasped that of the bruised craneman. He shook Starratt by the hand.

"All by-gones, Mike," he said. "From now we'll begin over again."—Successful Farming.

HOUSEHOLD QUERIES

Pickling Ripe Olives

Please give recipe for pickling ripe olives in a small way for family use. —Subscriber, Pasadena.

Complete directions are given by Prof. W. V. Cruess on another page of this issue.

Guava Paste

Is there any use I can make of what is left of guavas after I have used the juice for jelly making? It seems a waste to throw this pulp away but it is so full of seed that I don't know what to do with it.—Subscriber, Pasadena.

The pulp can be pressed through colander to remove seeds and then made into paste—if the bloom end of the fruit has been cut off before cooking. Allow half cup sugar to each cup pulp. Cook quickly, stirring to prevent burning. When very thick spread one inch layer on greased pans. Put waxed paper over it and set in sunny window to dry. When sufficiently dry cut in inch wide strips, roll in sugar and pack in boxes with oiled paper between layers. This is a delightful confection and may be used in cakes and puddings.

Cement for Dishes

Can you tell me how to make a good home made cement for dishes? I used to have a recipe for a good one with plaster of paris in it, but don't remember how it was made.—Subscriber.

A good white cement for dishes is made by stirring plaster of paris into a thick solution of gum arabic until it is of the consistency of cream. Use brush to paint this on the broken edges, join accurately together and allow to set at last three days. Mix only as much cement as is needed for use at one time as it hardens quickly and is useless for mending.

Thousand Island Dressing

Can someone through "Household Query" column give recipe for "Thousand Island" salad dressing?—Subscriber, Goleta.

So far we have been unable to locate a regular written recipe, but our impression has always been that Thousand Island dressing was simply mayonnaise with additions according to circumstances. This has so far been confirmed by the experience of the past two days. In the interests of the inquirer we had Thousand island dressing yesterday at a Los Angeles cafeteria. It apparently was a mayonnaise with addition of chopped pimento, onion and parsley. Today at another cafeteria, the additions were of catsup, chopped pimento and green chili. If any of our readers can help us out we will appreciate it.

GRAPEFRUIT AND ORANGE BUTTERS

The Citrus By-Products Laboratory sends to Cultivator readers these valuable recipes. Account of its work done in the interests of our citrus growers may be read on another page of this week's issue.

Orange Butter

The following recipe makes a product similar in many ways to apple butter. It spreads better than most marmalades or jellies and is not too sweet. It is especially popular with children. The fruit is washed, the stems and blemish spots being carefully removed. It is then cut into slices or small pieces, covered with water and cooked until the peel is tender. Usually this takes two to three hours. Granulated sugar, either beet or cane, is now added, using only one-half the weight of the fruit taken; i. e., for every pound of fruit cooked, one-half pound of sugar is added. The mixture is cooked rapidly with constant stirring until a small sample, when cooled, has the desired consistency. It is best to cook beyond the jelly point. We like the product best when cooked to 225-227 degrees Fahrenheit. As soon as it is sufficiently cool, it is passed through a food grinder until all lumps are reduced.

Grapefruit Butter

The skin is removed from the fruit, leaving as little of the white material attached to the pulp as possible. The peel is then cut in small pieces and repeatedly boiled with fresh lots of water until, when a small piece is removed from the batch and tasted, there is little, if any, bitter flavor left in it. The peel is then placed on a towel and thoroughly drained, the water being gently pressed from it.

If a bitter product is desired, the pulp of the fruit, after removal of the seeds, is cooked until thoroughly disintegrated. When this stage is reached the peel is added to the pulp and thoroughly stirred in, together with one-half pound sugar for every pound of fruit used. The whole batch is now cooked rapidly, with constant stirring, until the desired consistency is reached. This is usually at about a boiling point of 225-227 degrees Fahrenheit, quite beyond the jellying point. The best way of ascertaining the proper consistency is to remove a tablespoon of the material, while cooking, and cool it rapidly in a small dish placed in ice water.

If a mild product is desired it is best to split the segments of the grapefruit after peeling and remove the pulp, discarding the partition walls and seeds.

When the product has finished cooking, it is passed through a food grinder, using the smallest possible cutter. If fairly stiff, it can be passed through the peanut butter grinder very readily. This operation should be carried out while the material is hot, and it can be packed in freshly washed, hot fruit jars. If desired, the exposed surface at the top can be covered with melted paraffin.

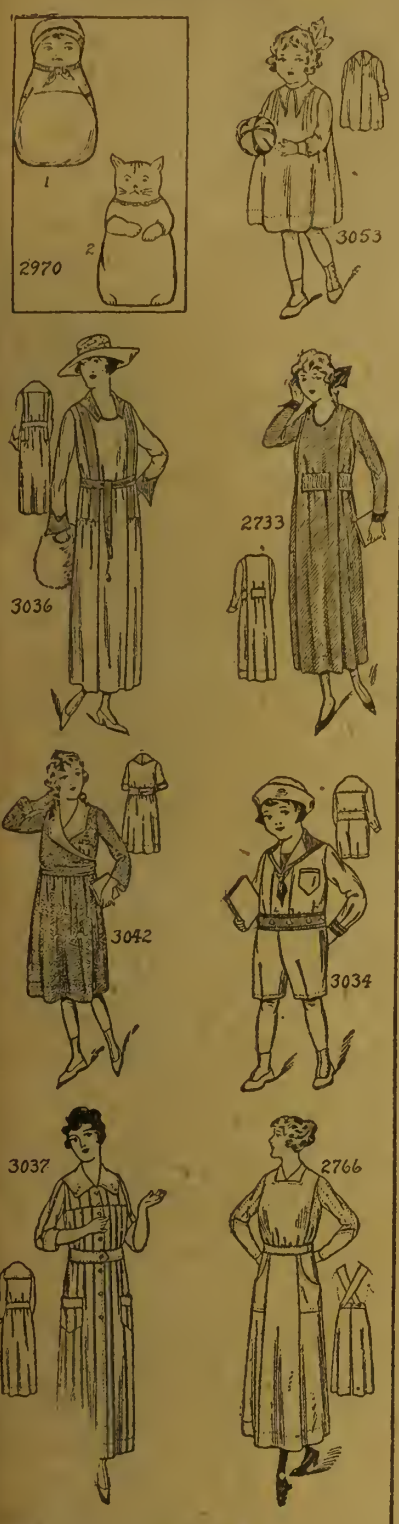
A BORN OPTIMIST

"That fellow Jones is a born optimist — most hopeful fellow I ever knew."

"Yes?"

"He certainly is. No matter how hard a job you've got, no odds how difficult, you can be worrying yourself to death, but he won't; no, sir! He'll just smile and tell you to keep on, dear heart; behind the sun the clouds are darkest; never say die; until you could almost waste a brick on him!"—Exchange.

The Cultivator Patterns



2970. A Set of Pleasing Toys for the Nursery. Cut in 1 size. Either style requires ¾ yard of 27 inch material. Price 10 cents.

3036. A Popular Style. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5⅝ yards of 44-inch material. The dress measures about 2 yards at lower edge with plaits extended. Price 10 cents.

3042. Girl's Dress. Cut in 4 sizes: 8, 10, 12 and 14 years. Size 10 requires 4⅛ yards of 27 inch material. Price 10 cents.

3037. A Practical Model. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5⅞ yards of 36 inch material. Width of dress at lower edge is about 2¼ yards. Price 10 cents.

3053. Child's Dress. Cut in 5 sizes: 1, 2, 3, 4 and 5 years. Size 4 requires 2¼ yards of 36 inch material. Price 10 cents.

2733. Misses' Dress. Cut in 3 sizes: 16, 18 and 20 years. Size 16 will require 3⅞ yards of 44 inch material. The dress measures about 2 yards at the foot. Price 10 cents.

3034. A Popular Style. Cut in 4 sizes: 2, 3, 4 and 6 years. Size 4 requires 2⅝ yards of 44 inch material. Price 10 cents.

2766. Ladies' Apron. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size 38 requires 3⅞ yards of 36 inch material. The Sleeve Protectors require ⅝ yard. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest Chicago stylee, all pattern orders are filled in Chicago. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
California Cultivator
Los Angeles.

THIS WEEK'S PATTERNS

The roly-poly doll and cuddly pussy cat look like Christmas. They may be made of toweling, flannel, velvet, jersey, stockinet, any good wearing material. Patterns for a chicken and a duck will be shown next week. But if you are in a hurry to start work on then, we will tell you, the number of the pattern so you may send for it right away. It is 2,937. Patterns of two other toys, a dog and a cat will also appear later on this page. They are No. 2,967. The duck can be made to float if stuffed with cork and made of toweling, or, better, oil cloth or waterproof material of any kind. An old curtain of a carriage would make a beautiful shiny black duck. The toys may be stuffed with fine cut paper, rags, string, cotton, excelsior, etc.

The features can be outlined with thread or yarn or painted or put on with crayola. The doll would be cunning with the portion below the arms made of a contrasting color or with separate, loose cap with a real ribbon tied under the chin. A little knitted or crocheted cap would be pretty.

The little girl's dress, 3,053, would be pretty in any soft material, particularly a wash flannel or challis. Feather stitching on the shoulder tucks would add a dainty touch.

An unusually attractive one-piece dress, 3,036, shows the new feature of the winter's skirts, a fullness at the sides while keeping back and front straight. The new flaring cuff is also well worked out in this model. Collar, belt, cuffs and shoulder straps of tricotine, silk serge, or jersey cloth are especially stylish. If the trimming is brown over beige, you will have the very latest of color combinations.

A jaunty and practical style for a boy's suit is 3,034. Of dark blue with red on collar, cuffs and belt, with tie of same, it would be just right.

No. 2,733 with its long, graceful lines would be especially good for a stoutish girl. Be sure to leave the belt loose enough so there is no break in the straight line from shoulder to to hem of skirt. A pretty finish for neck and sleeves would be three lines of stitching in yarn of graded shades of color contrasting with material of dress, for instance, cream, tan and brown on dark blue.

THREE GOOD PIES

By Florence MacLean.

Chocolate Pie.

Bake crust first.

One cup sugar, one teaspoon corn starch, one cup cold water, one egg yolk, one tablespoon melted butter, 1-8 cake Baker's chocolate. Flavor with vanilla.

Mix thoroughly and cook in a double boiler till thickened. Pour into a baked pie crust. Beat the white of egg, lightly add tablespoon sugar, spread over the top of pie and brown in oven (light). (A delicious pie, and so quickly prepared. Have the crust for this pie baked first, then the filling is soon ready to pour in.)

Vinegar Pie.

Bake the crust first.

Filling—Mix dry two tablespoons flour and three tablespoons sugar, nutmeg to flavor, water to stiff batter. Two tablespoons vinegar in two-thirds pint water, with tablespoon butter, heated, then added slowly to the "dry mixture."

Lemon Pie.

One lemon; use grated rind and all (take out seeds); one cup sugar, yolks two eggs, two tablespoons corn starch or flour, one tablespoon butter, one cup boiling water. Stir all together on the stove till cooked thick, then pour mixture in the baked crust. Spread the beaten whites of eggs and tablespoon sugar over pie and brown lightly in oven.

NO JOKE EITHER

Employer—For this job you've got to know French and Spanish and the pay is $18 a week.

"Lord, mister! I ain't got no education; I'm after a job in the yards."

"See the yard boss. We'll start you in at $40."—Life.

THE FAITHFUL

"What is an idle jest, pa?"

"There are no idle jests, my son; they are working all the time."—Life.

COCONUT-CORN MEAL RECIPES

Coconut combined with corn meal in various breads is considered very good eating in the West Indies. While coconut is not so cheap here, Cultivator readers all like to try new combinations in cookery. That recipe for coconut corn waffles sounds "puffeckly dee-lirious."

Coconut Corn 'Bread.

Into a bowl put one cup grated coconut; add two cups corn meal, one teaspoon salt, one teaspoon baking soda, two tablespoons melted shortening, two cups sour milk and two well-beaten eggs. Beat well, turn into a greased shallow pan and bake in a moderate oven for 30 minutes.

Coconut Spoon Bread

Mix two cups water with one cup corn meal, bring to the boiling point and cook for five minutes, stirring constantly. Take from the fire; add two well-beaten eggs, one cup grated coconut, one cup milk, two tablespoons melted shortening and one teaspoon salt. Beat well and bake in well greased pan in a hot oven for 30 minutes. Serve from the same dish with a spoon. This bread is delicious with milk or syrup.

Coconut and Corn Waffles

Mix one cup corn meal mush with the beaten yolks of two eggs; add three-quarters cup grated coconut, half cup wheat flour sifted with two teaspoons baking powder and half teaspoon salt; add two tablespoons honey or syrup, one cup milk and two tablespoons melted shortening and beat well. Fold in the stiffly beaten whites of eggs and cook in a hot, well greased waffle iron. Serve hot with syrup.

PICKLING SYRUPS: HOW TO MAKE THEM

Recipes for syrups for pickling as recommended by Miss Weigley of the Minnesota agricultural college are as follows:

Sweet Pickle Syrup

Four cups of sugar, two cups of vinegar. This syrup can be used for sweet cucumber pickles or pickled fruits.

Sour Pickle Syrup

Two quarts vinegar, one tablespoon salt, one cup sugar, one and one-half tablespoons each of mustard seed and celery seed and one tablespoon of cinnamon may be added to make a spicy syrup.

Spiced Vinegar for Fruit

Two cups of vinegar, four cups brown sugar, four tablespoons mixed spices.

Mustard Pickle Syrup

Two quarts of vinegar and water if too strong, four cups brown sugar, one-half cup salt, two cups mustard, one-half cup flower, one teaspoon tumeric powder.

Some fruits and vegetables may be cooked directly in the syrups or brine; with others better results are secured by soaking in salt water over night or parboiling in salt water. The object of the soaking or parboiling is to make it possible for the fruit or vegetable to absorb the vinegar or syrup better.

WORST IS LAST

On the Bassans docks at Bordeaux, France, an old time sergeant of a negro regiment was having trouble with a detail of men of his own race, who seemed inclined to loaf on their work of loading box cars with provisions for the army of occupation. Addressing one negro who was especially lazy, he exclaimed:

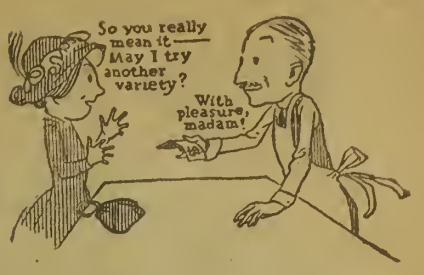
"Come on, you. Git to work, dar!"

"Shucks, sergeant," replied the lazy one. "Ah 'listed foh de war, an' hit's over."

"Yo' all's a durn fool," the sergeant yelled. "Yo' 'listed foh de wah. Y-a-s! An' also for de duration of de wah. Now, nigger, de wah hit's over, but de duration, hit's jes' done begun.—Ernest Hamilton Baxter, 58th Artillery, in Judge.

SAFETY FIRST

Full many a grave
Is filled today
By men who had
The right of way.



Money-back on Schilling Tea means: We know you will like the tea.

Try each kind at our expense until you find the one you like best.

There's nothing generous about this; it's business. So please do it. Your grocer pays you the money back; we pay him.

There are four flavors of Schilling Tea—Japan, Ceylon-India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

Is Your Home Ready?

The Holidays bring added responsibilities of Hospitality.

Is your Home ready to do its duty? Have you all the needed things for Guest room, Living room, Dining room and Kitchen that will insure your guests' enjoyment and warrant pride in your Home's completeness?

Whether the needs be little or much, Barker Bros. will serve you quickly and well with every kind of Furniture, Home Furnishings or Household Appliance to make your Home ready for the Holidays.

Our unusual and efficient Mail Order Service places every article in our immense stock at your call. You can select by mail as surely as in person. May we show you how this sure and satisfying Personal Service will help you wherever your home may be?

Or if you are undecided about your Home's needs, but want suggestions, let us send you a copy of the Holiday Number of our beautiful Magazine BETTER HOMES, just issued. It is not sent broadcast.

A Postal request will bring it with our Compliments.

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Complete and Helpful Furnishers of Successful Better Homes

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NATIONAL BACK REST

To the seat of your tractor or farm machinery. It saves your back and you ride in comfort. The National Back Rest fits on nearly any seat no matter what style or shape, it can be quickly and easily attached without the use of tools. No screws or bolts. Will not slip off. Three dollars delivered. Some agency territory still open. Satisfaction guaranteed or money refunded

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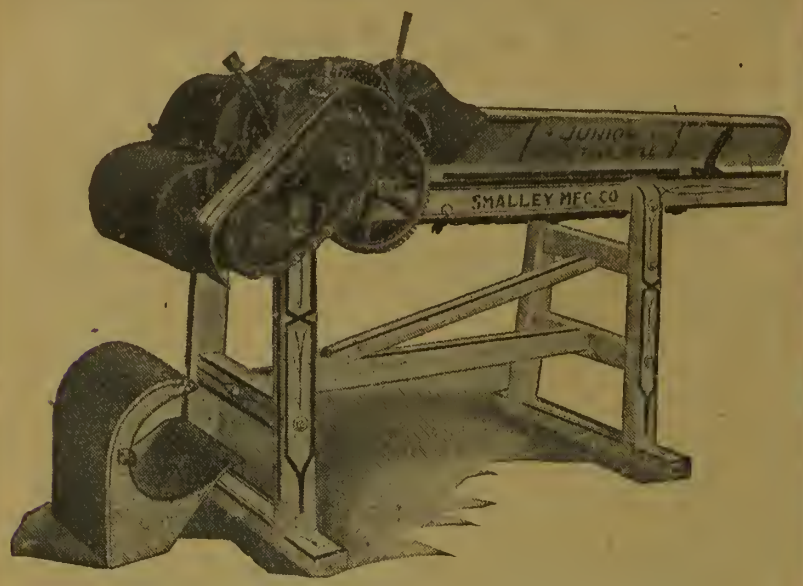
RHUBARB
WAGNER'S IMPROVED
Plant Now Growers making $1000 and over per acre annually. Splendid results in six months. Special prices for immediate planting. Also berries and small fruit, etc. Write to the originator, J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, Calif.

CUTS ENSILAGE CUTS ALFALFA MAKES MEAL



THE POWERFUL SMALLEY

THREE MACHINES COMBINED IN ONE

Why Pay Big Prices This Winter for Alfalfa Meal?

Make your own meal with a Smalley. Then next year fill your silo. All with the same machine. A catalogue is waiting for you.

WRITE

PACIFIC IMPLEMENT CO.

San Francisco

Harvest 20 to 45 Bushel to Acre Wheat in WESTERN CANADA

Think what that means to you in good hard dollars with the great demand for wheat at high prices. Many farmers in Western Canada have paid for their land from a single crop. The same success may still be yours, for you can buy on easy terms,

Farm Land at $15 to $30 an Acre

located near thriving towns, good markets, railways—land of a kind which grows **20 to 45 bushels of wheat to the acre.** Good grazing lands at low prices convenient to your grain farm enable you to reap the **profits from stock raising and dairying.**

Learn the Facts About Western Canada

—low taxation (none on improvements), healthful climate, good schools, churches, pleasant social relationships, a prosperous and industrious people.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., write Department of Immigration, Ottawa, Canada, or

Gilbert Roche,
3-5 First St., Sheldon Block, San Francisco, Cal.
Canadian Government Agent.

WESTERN CANADA Farm Lands at Low Prices in the Wheat Belt of America

The Famous Hardie Junior is a Real Power Sprayer

It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight, and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Junior. Equipped with 1½ horsepower engine, Magneto ignition, 150-gallon tank with mechanical agitator, capacity of four gallons per minute with a steady working pressure of 200 pounds, and two 25-foot of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All for $325. *Delivered anywhere in this state*

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

The HARDIE ORCHARD GUN is $12.00, none better. Every one is guaranteed to give satisfaction to the user, or his money refunded.

The Hardie Spray Hose is the safest hose to buy.

The Hardie Manufacturing Co.

224 N. Los Angeles St., Los Angeles

Los Angeles Markets

Los Angeles, November 12, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 66 cents.

Dairy Exchange prices last week on extras:

Nov.	5	6	7	8	10	11
'19 ...	65	66	66	..	66	66

CHEESE

Brokers' prices:

California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 76 dozen; case count, Produce Exchange closing price 74 dozen; pullets, Produce Exchange closing price 65 dozen; pewee pullets, 53.

Dairy Exchange prices last week on extras:

Nov.	5	6	7	8	10	11
'19 ...	76	76	76	..	76	76

POULTRY

Prices to producers: Hens, lt. 32; heavy, 33; colored over 4 lbs., 36; broilers, 43@44; fryers, 33; roasters, 33; old roosters, 19; ducks, old, 28; ducklings, 30; ducklings, Pekins, 3½ up, 32; geese, 25; turkeys, live, young tom, 37; dr., 43; hen turkeys, dr. 35@41; squabs, 43@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 14.00; 150 to 175 lbs., 14.50.

Cattle (on foot, gross weight): Steers, good, 10.00@10.50; medium, 9.00@9.50; heifers, good, 8.00@8.50; fair, 7.50@8.00; cows, fair to good, 7.50@8.00; hulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00@13.00; 175 to 225 lbs., 10.00@11.00. 14.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@14.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock November 11, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate. New stock, Stockton: Burbank, best, 3.25@3.50; others 2.75@3.00 per cwt.; Russets, 3.00@3.35 per cwt. Local: Lug boxes, 1.15@1.25.

Sweet Potatoes: 80 per lug; 2½@2¾ per lb.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, lug 1.25@1.40; per cwt., 4.25@4.50; Brown and Yellow varieties, 4.50@5.00 per cwt.; lug, 1.50@1.60.

VEGETABLES

These are the actual prics obtained November 11, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk

Beans, green, lb., 10@12½; fy. shipping, 13@14; Limas, 9@10; shipping, 10@11.

Cabbage: Per lb., 1½@1¾; crates, 1.65@1.75, mostly 1.75; sacks, 1.25.

Carrots, doz., 35@40; lb., 3; sk., 1.25.

Cauliflower: Local, per doz., 1.65@1.70; field crates, best, 3.00@3.25; other 2.75@3.00.

Celery: Local stock 1.00@1.25 per dozen bunches. Crates, 4.00@4.25; fancy shipping stock, 4.50@4.75; celery root, dozen, 1.10.

Cucumbers: Local stock scarce, lug boxes, 2.00@2.50; shipping stock, lug, 2.50@2.75.

Chicory, dozen, 45@50.

Corn: Roasting ears, lug of 3 dozen, 90@1.15; mostly 90@1.00.

Eggplant, best, lb., 4@5½.

Peas, local, lb., 12½@13½; best, 15.

Lettuce, local, cr., 2.25@2.75; shipping, 2.75@3.00.

Peppers: Lug boxes, wide range; Bells, 80@85; Chills, best, 45@50; shipping stock, high as 1.00 per lb.; best Chills, 4@7; Belle, 5@7; best, 8@9.

Pumpkins, 1½@2 lb.

Parsnips, lug, 85@1.00; sk., 2.25@2.50; doz., 50.

Romaine, doz., 45@50.

Rhubarb: Local, box, 1.00@1.35.

Squash: Summer, lug, 85@1.00; Hubbard, 1½@2¼.

Spinach, doz., 35@40.

Tomatoes: Lug boxes, ripe stock, best 85@1.00; poorer, 50@75; shipping stock, 1.25@1.35.

Turnips, doz., 40@45; others, 30@35.

FRUITS

These are the actual prices obtained November 4, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California: 4-tier, Bellefleur, 1.85@2.00, mostly 1.85@1.90; 3½@4½ tiers, 1.75@1.85; loose, 4@4½ per lb.; Delicious, boxes, 3.50@3.57; extra large sizes, 4.50; loose 5@6 per lb.; Baldwins, per lb., 4@5; Newton Pippins, 4@5. Northern: Jonathans, extra fancy, 3.20@3.25; fancy, 2.85@3.00; choice, 2.50@2.60; loose, 6@7 per lb.; Spitzenburgs, extra fancy, 3.10@3.25, mostly 3.10@3.25; fancy, 2.75@3.00; per lb., 6@6½.

Bananas, 9½@10.

Cranberries: Barrels, 12.00@15.00; boxes, mostly 5.00; lb., 12½@13.

Grapes: Local and northern, per lb.: Tokays, 6½@7; best, high as 9; Malagas, 7@9; Black Cornichons, 7@9, mostly 7@7½; Red Emperors, wide range, 6½@9; Queen, 10; Mission, 7½.

Nectarines, lb., best 6@7; others, 5@6.

Pears: Northern Bartletts, No. 1, 8@9; No. 2's, 5@6 per lb.; lug boxes, 2.00@2.50; best packed boxes, 3.25@3.50; D'Anjous, 8½@9.

Persimmons, lb., 8@11.

Pineapples, lb., 19@20.

Pomegranates, lb., 6½@8½.

Quinces: Local lug, 1.10@1.35; lb., 4@5.

Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1, small ½ lb.

Lemons: Fancy packed, 5.50@5.75; loose, 4.00@4.50; juice, 2.50. Local: Packed, 3.50@4.00; best, 4.00@5.00; loose, 3.00@3.25.

Oranges: Valencias, medium fancy, 4.75@5.00; best brands, 5.50; local pack, 2.50@3.00.

Grapefruit: Local stock, 5.00@6.00, mostly 5.25@5.50; fancy, 64's-80's mostly 6.00@6.50; 46's and 96's, 4.50@5.00; choice, 2.50 up; seedlings, 4.00.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.

No. 2, 26.

Diamond Brand Buds, 34.

Golden State Buds, 34.

1918 No. 1 price was 28; fancy budded 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14½; baby, 13.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	21.00@24.00
Barley	17.00@22.00
Alfalfa	20.00@25.00
Fertilizer Bean Straw	9.00@11.00
Barley Straw	9.00@11.00

San Francisco Markets

San Francisco, November 11, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	67½
Firsts	Nominal

Prices extras last week and year ago:

Nov.	4	5	6	7	8	10
'19 ...	67	67	67½	68	67½	..
'18 ...	59	..	59	59	59	..

Rcts., five days ending Nov. 10, 3,190 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	30@34
Cal. Y. A.	37
Ore. Triplets	34
Jack, full cream	33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	87
Extras, Pullets	71
Undersized	68

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago:

Nov.	4	5	6	7	8	10
'19 ...	89	90	90	90	87	..
'18 ...	88½	..	88	88½	89	..

Rcts., five days ending Nov. 10, 220,748 dozen.

POULTRY

Wholesale prices are:

Hens, 32; Leghorn, 30@32; colored, 35@36; roosters, young, 30@32; old, 20@22; broilers, 43@46; fryers, 33@34; turkeys, live, broiler, 38@40; old, 35@37; turkeys dressed, young, 45@47; old, 40@45; geese, 23@25; ducks, Indian Runner, 18@20; Pekin, 24@26; squabs, 50@60.

Belgian hares, live, 16@17; Jack Rabbits, doz., 1.50@3.50.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10½@11; do, 1,200 to 1,400 lbs., 10@10½; do, second quality, 8½@9; do, thin, 6½@7½.

Cows and heifers: No. 1, 8½@9; second quality, 7@7½; common to thin, 4½@6.

Calves: Light weight, 11; medium, 10; heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 9@9½; ewes, 6½@7.

Hogs: Hard, grain fed, 100 to 225 lbs., 14; do, 225 to 300 lbs., 13½; 300 to 400 lbs., 12½.

Moran & Co.'s livestock market delivered and weighed off cars at their plant in South San Francisco:

Cattle: Good grass steers, 1,000 to 1,200 lbs. and over, 9½@10; good heifers, 1,600 and over, 8½@9; good cows, 1,000 and over, 8@8½; canner cows, 4@5; good bulls, 5@6½; calves, light, 12.

Hogs: Top packer hogs, hard and well finished, 150 to 225 lbs., 13; 250 to 300 lbs., 12; over 300 lbs., 11½. Usual dock and price discounts for other weights and kinds.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs. Rivers, fancy 2.75@2.90; choice, 2.50@2.75; sweets, 3½@4 lb.

Carloads, Stockton: Demand and movement good, market firm. Quality and condition generally good. Carloads f. o. b. usual terms, 100 lbs. sacked, Burbanks fancy, 2.65@2.75.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 4.00@4.25; choice, 3.75@4.00; Yellow, 3.75@4.00; Whites, 3.00@3.25; Garlic, lb., 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 12½@15; Lima, 12½@14.

Carrots, per sack, 1.00@1.25.

Cauliflower, doz., 1.25.

Cabbage, doz., 40@55.

Celery, doz., 25@40.

Cucumbers: Per box, 1.00@1.50; hot house, 2.00@2.25 box.

Corn, sack, 2.00@2.25.

Eggplant, southern, fancy, box, 75@1.00.

Lettuce, cr. of 3 doz., 1.25.

Peppers, Bell, lb., 85@1.00; Chili 75.

Peas, lb., 11@18.

Pumpkins, per sack, 75@1.25.

Radish, 7@9 doz. bunches.
Tomatoes: Sacramento River, 1.00@1.50; green, 50@1.25.
Squash: Summer, cr., 1.25@1.50; Hubbard, sk., 1.25@1.50.
Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:
Apples: Greenings, 1.50@1.75; Bellflowers, 1.65@2.00; Winter Bananas, 2.25@2.75; Newtown Pippins, 2.15@2.40; Jonathans, 2.50@3.00.
Avocados, doz., 5.00@5.50; Cal., doz., 75@1.00.
Bananas, 8½@9.
Cantaloupes, per crate, 75@1.00; pony crate, 40@50; Casabas, doz., 50@75.
Cranberries, 4.50@5.00 per standard box; barrel, 13.50.
Figs, double or single layer, 1.00@2.00 box.
Grapes: Malaga, 2.00@2.50 per box; Muscats, 2.00@2.50; Tokays, 1.25@2.50; Isabellas, 1.25@1.75 per crate.
Huckleberries, lb., 13@15.
Peaches: Sacramento 1.25@1.50 per crate; 1.00@1.50 per box; Cling, 1.00@1.50 per box.
Pears, box, 1.25@2.00.
Persimmons, box, 1.25@1.50.
Plums, 1.00@2.00.
Prunes: Fancy, 2.50@3.00; choice, 1.00@1.80.
Pineapples, doz., 4.00@5.00.
Pomegranates, 1.50@2.00 box.
Quinces, box, 1.00@1.50.
Raspberries, ch., 10.00@12.00.
Strawberries, ch., 15.00@18.00.

CITRUS

Wholesale selling price:
Per box: Lemons, fancy, 6.50@7.00; choice, 5.00@5.50; standards, 3.00@3.50; 4.50@5.00; oranges, fancy, 5.25@5.50; choice, 4.25@4.50; limes, 2.00 per crate; tangerines, 3.00 per crate.

ALMONDS

California Almond Growers Exchange opening prices:
Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HONEY

Jobbing prices: Extracted, Water White, 20@22 per lb.; Light Amber, 15@17; Amber, 13@14.

HOPS

1919 contracts per lb. around 60@70.

RICE

Prices per 100 lb. bag:
California: Fy., 10.50; ch., 10.25; flour, 6.25.

BEANS, PEAS

Wholesale selling prices:
Beans: Per cental: Small White, 7.25@7.50; Large White, 6.50@6.75; Lima, 14.50; Baby Lima, 13.00; Pink, 6.75@7.00; Cranberry, 7.25@7.50; Blackeye, 6.00@6.50; California Bayos, 6.75@7.00; Mexican Red, 6.00@6.50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 5.75, in bond.
Dried Peas: Old crop, green, lb., 7½@7¾.

GRAIN AND FEEDS

Wholesale selling prices:
Oats: Red feed, 3.00@3.05; black, 3.00@3.10 per cental.
Corn: California yellow, 3.40@3.55 cwt.; Egyptian, 3.25@3.35; Milo Maize, 3.07½@3.15.
Rye, 3.25@3.35.
Barley, feed, 3.15@3.20; brewing, 3.25@3.30.
Wheat: Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles Terminals:

	Per Bushel	Per Cental
Hard Wheat—		
No. 1	2.20	3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	2.18	3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 1-3
Club and Sonora—		
No. 1	2.16	3.60
No. 2	2.13	3.55
No. 3	2.09	3.48 1-3

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.
Mill Feed (per ton): Bran, 43.00@44.00; mill run, 42.00@43.00; Rolled Barley, 52.00@54.00. Linseed oil cake meal, nominal; cocoanut cake or meal, 41.00@42.00 per ton.

HAY

We quote today wholesale prices in carload lots as appear from dealers transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy wheat hay (light 5-wire bales)	21.00@23.00
No. 1 Wheat or Wheat and Oat hay	18.00@22.00
No. 2 Wheat or Wheat and Oat hay	17.00@19.00
Choice Tame Oat hay	20.00@23.00
Other Tame Oat hay	17.00@20.00
Wild Oat hay	16.00@10.00
Barley hay	16.00@20.00
Alfalfa hay	18.00@23.00
Stock hay	13.00@16.00
No. 1 Barley straw, bale	50@80

Citrus Markets

Los Angeles, November 12, 1919.

Valencias are bringing a wide range of prices in the Eastern markets, some as low as $1.80, the best $9. There are 1,800 cars yet in California, and shippers are faced by car shortage, contending with grape shippers in this state and apple shippers in the Northwest. The Tulare district expects to start shipment of holiday fruit immediately. The oranges are running to large sizes but the holiday trade is expected to take care of these. Florida fruit has been very slow in maturing this season and as yet has not affected sales of Californias.
Cold weather in the East has cut down the demand for lemons and there is fairly large supply of foreigns available.

Shipments

Shipment of oranges from Southern California to date since November 1, 1919: Oranges, 611 cars; lemons, 122; total 733. To same date last season: Oranges, 22; lemons 290, total 312.

AT THE AUCTIONS

November 4
New York: 29 Val. 5 lem. Val. 2.35-9.65, lem. 3.80-7.40.
Boston: 6 Val., 3.90-6.10.
Philadelphia: 10 Val., 1 lem. Val. 3.20-6.40, lem. 2.10-4.95.
Pittsburg: 2 Val., 2.30-3.60.
St. Louis: 2 Val., 1 lem. Val. 3.45-4.75, lem. 1.65-4.00.
Cleveland: 3 Val., 1 lem. Val. 2.90-5.75, lem. 3.55-4.55.
Cincinnati: 2 Val., 1 lem. Val. 2.70-3.15, lem. 1.95-3.60.

November 7
New York: 19 Val., 2 lem. Val. 2.45-6.10.
Boston: 8 Val., 2 lem. Val. 4.00-6.75, lem. 3.70-6.05.
Philadelphia: 7 Val. 2.15-5.65.
Pittsburg: 3 Val., 1 lem. Val. 3.15-5.65.
Cleveland: 3 Val., 1 lem. Val. 4.20-5.55, lem. 3.00.
St. Louis: 2 Val., 1 lem. Val. 3.00-4.50, lem. 2.95.

November 11
New York: 26 cr., 3 lem. Val. 1.80-8.25, lem. 3.25-6.00.
Philadelphia: 8 Val., 1 lem. Val. 2.60-5.55, lem. 1.65-3.10.
Pittsburg: 2 Val., 1.85-4.60.
St. Louis: 2 Val., 1 lem. Val. 2.50-5.80, lem. 2.40-3.50.

PRODUCER LOOKING FORWARD

Continued from Page 649.

doubt but that their ideas would have readily been met by their employers. Their publicity department was inadequate but the employers have put a true value on public sentiment and their publicity departments have been working overtime.

With half the nation's capital invested in agriculture, there is no reason in the world why, through the proper organization, the biggest and best publicity department should not be developed to apprise the city man of the opportunities and freedom of the country and let him know how he can be his own boss and independent. Teach him how he can become a successful farmer if he is willing to combine intelligent effort and hard work. Through this method the old "back to the soil" movement would be speedily revived and production would hold pace with consumption and the country would enjoy a prosperity beyond all anticipations.

If the public moneys being spent at present on investigations of profiteering and in court proceedings against producers were diverted to a strong publicity campaign depicting the advantages of agriculture as an occupation, incomparably better results would be obtained, more moderate and steady prices would prevail; the entire nation would be greatly benefited and agitation quieted.

PANAMA TRADE

The American consul general at Panama City says that increased trade between the United States and Panama and the retention of the trade established during the war depend largely upon the observance of suggestions offered by Panama merchants, for the business of Panama consists largely of the wholesaling and retailing of imported merchandise. We must have good shipping facilities and a representative sent out to cover the field thoroughly to obtain a knowledge of the customs and manners of the people. Careful packing, prompt execution of orders, no substitutions, easy terms of credit (60 days after sight), and an intimate knowledge of Panama banking methods are necessary. In 1919 the most valuable cargoes sent to Panama from the United States were textiles and manufactures, with edible animal products and mineral oils and derivatives second and third, respectively. Our heaviest purchase from Panama was bananas, to the value of $2,467,442. Next to this came rubber, and then $707,637 worth of coconuts.

PROBABLY NOT

"I was reading, the other evening," mused honest Farmer Hornbeak, "that in China, I believe it was, the dawn comes up like thunder. But I don't s'pose the hired men there are inclined to pay any more attention to it than they do to the alarm clocks over here."

Russell "Quality" Tractors

RUSSELL "BIG BOSS" TRACTOR 20-40

Russell Tractors are Built in Five Sizes:

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The high grade material and workmanship that goes into every OilPull keeps upkeep expense at a minimum. For example—during the 10 years we have built OilPulls we have never heard of a crankshaft breaking through usage, and there are over 15,000 OilPulls now in use.

A 16-30 OilPull near Salida, Calif., has been in use constantly since April, 1918, with only $5.00 expended for repairs.

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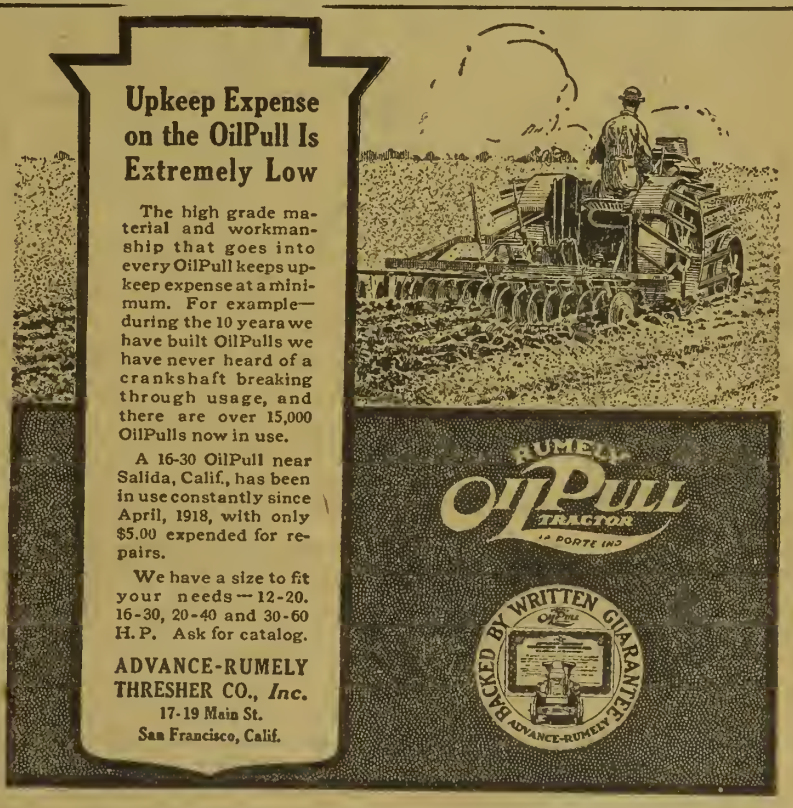

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Waterloo Boy 12-24, California Special	500.00
Waterloo Boy 12-24, California Special	650.00
Waterloo Boy 12-24, Model R, used one week	1000.00
Waterloo Boy 12-24, Model N, practically new	1000.00
Invincible 10-20, a bargain, new	750.00

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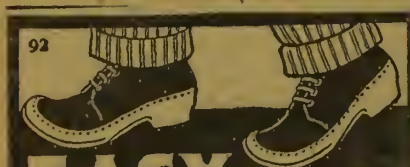

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Hatching Eggs---Their Selection and Care

By Jean A. Koethen

THE history of a hatching egg might easily begin, as Dr. Holmes would have the education of a child begin, several generations back. When we consider the wonderful complexity of the forces which combine to make so small and weak a creature as a baby chick it is not difficult to realize that the selection of a grandfather or grandmother may make a world of difference in the finished product. The vigor of the germ is a factor which enters into every consideration for there is now and then a germ so vigorous that no abuse can kill it and now and then one so weak that no care can keep it alive.

The eggs from which we expect to hatch profitable layers or winners at fall and winter shows must be laid by hens that are profitable layers or winners of the blue. Like produces like, and the offspring, while in most cases it will not quite come up to the parents in quality, can be made to excel them only by the most careful mating. It is most important, therefore, that the breeders be the most vigorous birds in the flock or the most vigorous to be purchased, and that they as nearly as possible approach perfection in other respects. Better hatch from a single hen, if she is the best pattern for the flock you wish to develop, than from hens of mediocre quality.

Remember too that to a large extent the eggs of next year's pullets will be like the eggs you use for hatching. Do you want your hens to lay eggs that will run 24 ounces to the dozen? Then select good sized eggs for hatching, not overly large eggs, for they are apt to be infertile, but eggs that will themselves weigh two ounces each. Do you wish eggs of a uniform shade of cream or brown? Then select eggs of the shade you wish and use no others. White eggs, I believe, are always white, but brown eggs are not always brown. Sometimes they are cream, sometimes almost white. Select the shade you prefer or the shade the majority of your hens lay and stick to that. Even then you will be disappointed sometimes in the results for hens have a queer way of throwing back in color of eggs as in other respects.

The market demands eggs that are uniform in color and size. If yours are not they will have to be graded and you pay for the grading. If you select for hatching eggs that are uniform in color, size and shape, there will be less grading to do afterwards. Avoid eggs of odd shapes or with rough, uneven surface, and do not be tempted to put in cull eggs to fill out a hatch or setting. If these eggs fail to hatch, as they may, or hatch culls, as they are more than likely to do, they are less profitable than if you had eaten them in the beginning.

Take Care of the Germ

The fertile egg contains a germ that is very susceptible to external influences. Left in the nest a few hours in warm weather it may begin to develop. If it is kept in a warm place in the house the same thing may happen. Broody hens allowed to stay on the nest for several days have spoiled many a hatching egg. On the other hand, if the egg is chilled the germ is just as certainly injured. Hatching eggs should be taken from the nest soon after they are laid and kept in a temperature approximating 50 degrees. A dry closet or cellar is the best place.

In what position does the germ rest most comfortably? Some say on its side. Others keep all hatching eggs in a rack with the large end up. Since the hen that steals her nest and fills it an egg a day or less is obliged to leave her eggs lying on the side, we may safely conclude that this position is as good as any.

More important, probably, than the position in which it rests is the rule so often given and so often neglected, that the egg should be turned every day. This is simply to keep the germ from settling down against one side of the shell and adhering there. Turning the egg daily in any direction is sufficient. After incubation is commenced this daily turning is just as necessary and probably more necessary than it was before. Some incubator manufacturers provide an extra tray with the instruction that the eggs are to be turned from one tray to the other twice daily. Others advise rolling the eggs about by hand. It does not matter just how it is done if only the position of the germ is shifted from time to time. The hen rolls the eggs about under her wings with her beak, and it is a matter of common observance that the hen that sits "tight," rarely moving on the nest or from it usually brings off a smaller brood than the lively hen that keeps her eggs moving and airs them frequently.

Do Not Keep Eggs Too Long

The most important rule connected with the care of hatching eggs has to do with the length of time they are kept before incubation begins. More hatches are spoiled, I believe, by keeping hatching eggs too long than in any other way. An egg that is not turned while it is waiting for inbucation may still produce a husky chick, but an egg that is kept more than two weeks will rarely if ever hatch. Whether this is because of the evaporation of the air in the cell or because the germ can live only a certain length of time the fact remains that every day an egg is kept after the first week lessens its hatchability. Two weeks is the utmost limit of time and only in an emergency should eggs be kept more than ten days. We are told that it is better for them to rest a day after they are laid before being put in the incubator. Why this should be the case I do not know, and I have my doubts if it is so. At any rate, the sooner after the first 24 hours incubation is commenced, the better chance of a good hatch. This is extremely important. It is far better to set a small number of eggs that are fresh and fully hatchable than to set a full setting a third of which are too old to hatch.

EGG LAYING CONTEST

Storrs, Connecticut, October 31, 1919.—Report for the week ending October 30:

A pen of Barred Rocks from New York won the eighth international egg laying contest conducted by the Connecticut agricultural college at Storrs. For the year ending October 30, the ten pullets in this pen entered by Jules F. Francais of Westhampton Beach, Long Island, laid 2022 eggs. This was the only pen in the entire competition to average more than 200 eggs for each of the ten hens. The winning pen has led all comers for the last 32 weeks and won in spite of the fact that one of their number went on strike last July and has not laid an egg since. This is the second time that Barred Rocks have outlaid all competitors as can be seen from the following list of winners and their records in the contest at Storrs during the past eight years:

1912, White Leghorns (5 birds), F. G. Yost, Sayre, Pennsylvania, 1,071.

1913, White Leghorns (5 birds), Tom Barron, Catforth, England, 1,190.

1914, White Leghorns (10 birds), Francis F. Lincoln, Mt. Carmel, Connecticut, 2,088.

1915, White Wyandottes (10 birds), Tom Barron, Catforth, England, 2,072.

1916, White Wyandottes (10 birds), Obed G. Knight, Bridgeton, Rhode Island, 2,265.

1917, Barred Plymouth Rocks (10 birds), Applecock Farm, Fitzwilliam, New Hampshire, 2,119.

1918, Oregons (10 birds), Agricultural College, Corvallis, Oregon, 2,352.

1919, Barred Plymouth Rocks (10 birds), Jules F. Francais, Westhampton Beach, Long Island, 2,022.

There were 1,000 birds in the contest of 11 different breeds and varie-

Smoke in rear of den drives animals out. Pays for itself ten times over with your first catch. Easy to operate. Price $2 each.

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RIVETED PIPE — 4 to 12 inches, as good as new
We also carry valves and fittings.
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ties and from 15 states and three of the Canadian provinces. They laid a grand total of 145,462 eggs. The following table shows the number of birds in each of the four principal classes, the average individual egg yield for the year and the general average for all varieties that participated in the contest.

500 Leghorns	149.7
220 Plymouth Rocks	147.5
100 Rhode Island Reds	147.3
130 Wyandottes	134.8
50 Miscellaneous	119.1
1,000 Average all breeds	145.5

The best individual work was done by White Leghorn hen No. 522, owned by S. G. McLean, South Glastonbury, Connecticut. This hen laid more eggs than any other hen in the contest. Her record for the year was 260 eggs. Laurel Hill Farm's Rhode Island Red No. 402 from Bridgeton, Rhode Island, was best in her class with a score of 258 eggs. Two Barred Rock hens, Nos. 46 and 47, from Laurel, Quebec, tied for first with a score of 235 eggs each. Curtis L. Allen's hen No. 275 from Nicholson, Pennsylvania, was at the top in the Wyandotte division with a yield of 238 eggs. The following list shows the 20 best pens in the order of their production, also their records for the year.

Jules F. Francais, Barred Plymouth Rocks, 2,022.

Laurel Poultry Farm, Laurel, Quebec, Barred Plymouth Rocks, 1,918.

J. Frank Dubois, East Lynn, Massachusetts, White Leghorns, 1,867.

Kirkup Bros, Mattituck, New York, White Leghorns, 1,845.

D. Tancred, Kent, Washington, White Leghorns, 1,833.

Deer Brook Poultry Farm, Short Falls, New Hampshire, Rhode Island Reds, 1,828.

Laurel Hill Farm, Bridgeton, Rhode Island, Rhode Island Reds, 1,825.

James O. LeFevre, New Platz, New York, White Leghorns, 1,789.

Howard R. Sullivan, Hartford, Connecticut, Barred Plymouth Rocks, 1,774.

Ingleside Poultry Farm, Palenville, New York, Barred Plymouth Rocks, 1,737.

Mrs. J. L. Thuesen, New Haven, Connecticut, White Leghorns, 1,735.

Agricultural College, East Lansing, Michigan, Barred Plymouth Rocks, 1,730.

Hilltop Poultry Yards, Suffield, Connecticut, White Leghorns, 1,728.

S. G. McLean, So. Glastonbury, Connecticut, White Leghorns, 1,724.

Chas. H. Lane, Southboro, Massachusetts, Rhode Island Reds, 1,714.

Mount Hope Farm, Williamstown, Massachusetts, White Leghorns, 1,713.

R. Lindsay Ireland, Louisville, Kentucky, White Leghorns, 1,695.

W. Bradley, Langford, Pennsylvania, White Wyandottes, 1,667.

Poultry Queries

Conducted by J. A. Koethen

Worms in Chickens

Please tell me what to give my chickens for worms.—Subscriber, Strathmore.

Tobacco is the only worm remedy now recommended by the California station. Until recently Dr. Beach and the other experts advised making a decoction by steeping in water sufficient to cover a pound of tobacco stems for each 100 birds for two hours and with this moistening a light feed of mash. Now their treatment is even more simple. A pound of tobacco powder is thoroughly mixed into 50 pounds of dry laying mash and this is kept before the hens till all symptoms of worms have disappeared. If the moist mash is used it should be fed after the birds have fasted 24 hours and should be followed two hours later by another very light meal of mash moistened with water in which Epsom salts has been dissolved, 11 ounces for 100 fowls. It is claimed that the dry tobacco may be used indefinitely in the mash without harm to the birds or to egg production.

Lice

What will rid poultry of lice?—Subscriber, Strathmore.

There are three methods of getting rid of lice, dusting, greasing and dipping. Of these dusting with a good strong powder is generally preferred. There are several such powders on the market for adult fowls. For young chicks buhach powder is considered safest. A home made powder made by mixing three parts gasoline and one part crude carbolic acid and adding plaster of paris till the moisture is all absorbed is highly recommended by the Maine station. If greasing is preferred try blue ointment diluted with eight times its weight of lard or with vaseline half and half. This second preparation is quite strong and must be used with care, a bit the size of a pea being rubbed about the vent. Dipping with a solution of sodium fluoride has been recently recommended, but no dip should be used in any but the warmest weather.

TO PREVENT ROUP

By Jean A. Koethen

Fall, with its warm days and chilly nights and rapid changes of weather, is the time when roup is most prevalent. A little care now in protecting the birds may keep them free from this troublesome disease the winter through. A little neglect may result in chronic colds that will last till spring if they do not sooner terminate the life of the bird.

First of all, see to it that the birds have plenty of fresh air at night. A closely shut up chicken house is a regular roup breeder. If you have a house that is not open in front, open it. Take out one side. That much anyone can do.

Second, look out for knot holes and cracks through which a draft may blow on the heads of the hens. A piece of heavy wrapping paper or an old burlap sack tacked over such a place is better than nothing, but a sound piece of battening is better still.

Third, clean up. I trust there is no reader of the Cultivator who does not clean his droppings boards at least twice a week. You cannot have fresh, pure air in your roosting house, no matter how well ventilated it is, if the birds have to roost over a pile of filth. Carry out old, dirty scratching litter and replace with clean straw or leaves or sand. Cover the droppings boards with sand or dry dirt. Spade up the yards. Get rid of must and mold and smells. Roup is a disease very largely of filth. Foul air, dirty houses, contaminated drinking water are all contributory causes.

Fourth, mend that leaky roof. Dampness in the chicken house is almost as prolific a cause of roup as filth. If the house is so located or constructed that water can run under the walls, bank up or put in a cement foundation. Keep the birds dry in rainy weather.

Fifth, see that they have protection from the north winds which are sure to blow before winter is over. If the house has its back to the wind the birds may be sufficiently protected. If it has not some windbreak should be erected. Lumber, even at present prices, is cheaper than an epidemic of roup.

EVERY-DAY HELPS

We all want friendship, but are we always worthy of it?

Something is lacking in the courtesy of one who makes a practice of being late.

The things we admire pretty nearly reveal what we are.

There may be nothing sensational or brilliant in just keeping on doing what is right, but it is the sort of faithfulness that counts in the end.

Only those pleasures are safe that leave sweet memories, instead of uneasy ones or half regrets.

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Stop at the nearest United States Tire Sales and Service Depot. There you will find good treatment and good *values*.

CA

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

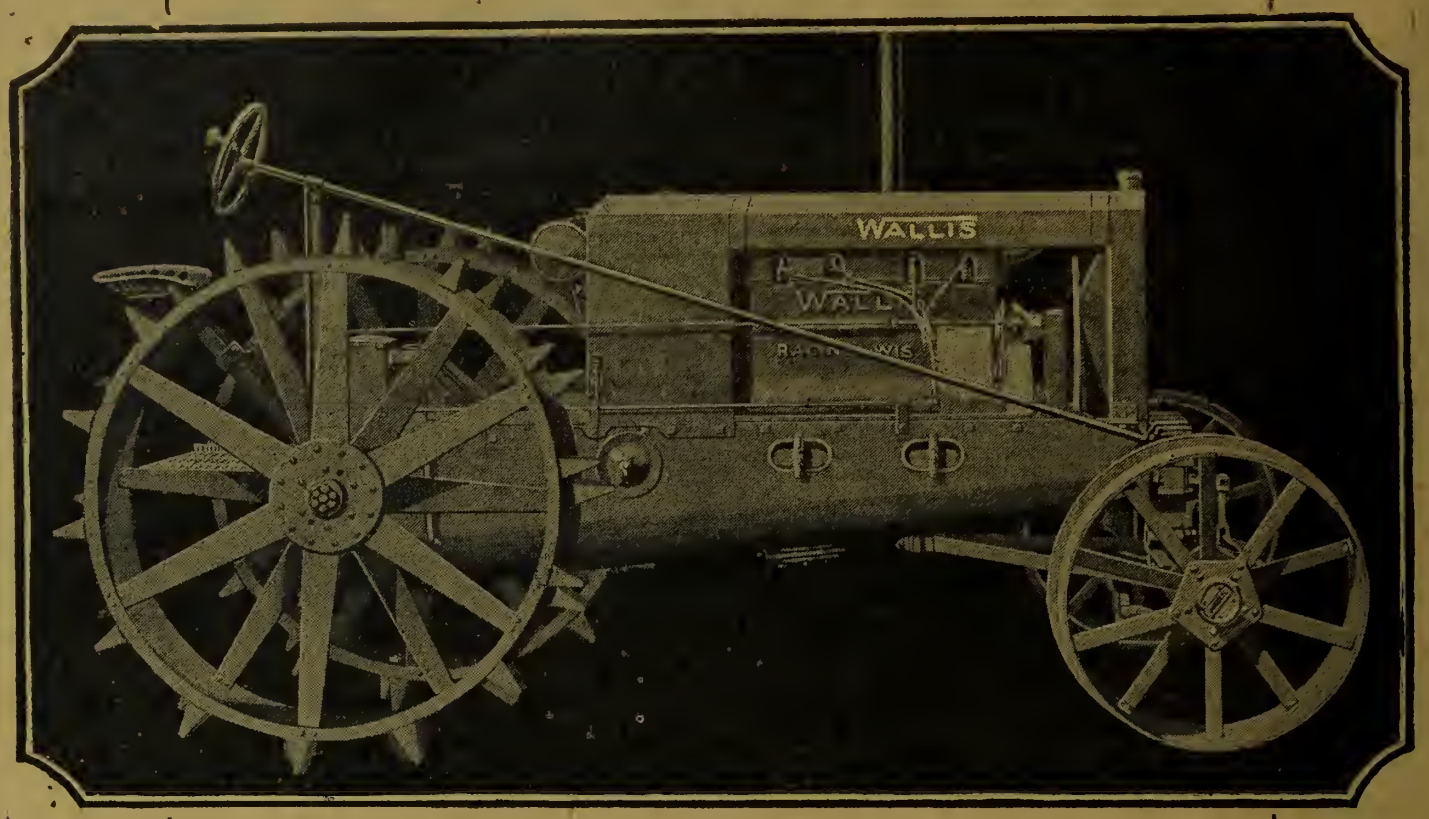
Vol. LIII — November 22, 1919 — No. 21

Let Our Hearts be Filled with Thanksgiving

"There shall be an handful of corn in the earth upon the top of the mountains; the fruit thereof shall shake like Lebanon; and they . . . . shall flourish like grass of the earth."

WALLIS

America's Foremost Tractor



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THE important feature for you to ascertain when selecting a tractor is durability—long life. Will it last?

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For over 12 years the Wallis has been serving on American farms and throughout the world.

Wallis advanced ideas of tractor design, light weight, simplicity, durability and economy have been proven more than practical. This master tractor has unmistakably proven its ability to do the work demanded of it year after year. It has power. But, more important, it has stamina.

The Wallis "valve-in-head" engine—with completely machine finished combustion chambers—the wonderful "U" frame—the cut and hardened steel gears, fully enclosed and running in a constant bath of clean oil—the oversize bearings—the exact machining of every part and the unusual care in every step of Wallis building, are responsible for this tremendous success.

Wallis has proven that the rough work required of the farm tractor demands the finest materials and most accurate workmanship. Long life lies in quality and design, not in bulk or heavy weight.

Wallis users—who know that after years of service the Wallis is as efficient as ever—readily confirm this fact. And phenomenal records of low cost plowing and low upkeep per year of service attest to the economy of Wallis operation.

Naturally, the Wallis is in great demand. Men realize that it is a profitable investment because its service is constant.

If you want a Wallis for next Spring, today is not an hour too early to see the local Wallis dealer or write us.

J. I. Case Plow Works Company, Dept. T31, Racine, Wis., U.S.A

Branches and Distributing Houses in All Principal Cities (68)

California Cultivator

Vol. LIII, No. 21 Los Angeles, November 22, 1919 One Dollar Yearly

Arsenical War Babies

By Geo. P. Gray

THE time will soon be here when the wholesale houses will be laying in their stocks of arsenicals and will be receiving inquiries from customers about possible substitutes for lead arsenate. The writer has taken a keen interest in following the trend of thought in regard to the newer insecticides but has always advocated conservatism in their adoption. When inquiries have come in about the newer arsenicals the advice has always been not to be in haste to try out the new things except in an experimental way. There has been so much said in the past year or two about calcium arsenate and certain other arsenicals as substitutes for lead arsenate that a discussion of the available information about them may be of interest at this time.

The desirable chemical and physical properties of lead arsenate, the only arsenate to have come into general use in spray practice, has led to a search for other arsenates which would meet the insolubility and stability requirements but be of higher poison content and of greater toxic value. The higher prices during war times, the concerted effort of the nation toward conservation of our resources, and the unjustifiable talk of probable shortage of arsenicals, all served as an added stimulus to thought and experiment in this direction. The heavy combining weight of lead compared to the lighter calcium and magnesium and the cheapness of these latter elements occurring so abundantly in nature as limestone and magnesite, are all facts worthy of note and naturally focused attention to calcium and magnesium arsenates, particularly the former, as possible substitutes for lead arsenate. Both compounds are known to be nominally insoluble in water, and being salts of an acid stronger than carbonic, one would not expect them to be decomposed by carbon dioxide when exposed to the weather. Directions have been published for the home preparation of calcium arsenate, the commercial material is advertised by many of the manufacturers and magnesium arsenate is widely advertised by at least one company, but it cannot be said that the status of these newer poisons has yet been established.

Calcium Arsenates

The attention of horticulturists was first directed to this material by a publication of Scott and Siegler, reporting the results of three years experiments. They conclude: "The most promising new insecticide developed during the course of the experimental work is arsenate of calcium. This arsenical may be manufactured at less cost than arsenate of lead, or may be readily prepared at home. During the seasons of 1912 and 1913, arsenate of calcium gave encouraging results. In 1914 a commercial arsenate of calcium paste in combination with lime-sulphur gave very satisfactory control of the codling moth. While arsenate of calcium may have certain limitations, it will doubtless prove of value for the control of chewing insects on certain host plants."

Use

The United States bureau of entomology considers it a safe arsenical for use on plants whose foliage is not tender, such as apple, pear, grape and many vegetables, but not on peach, cherry, plum, or other stone fruits. The growers in general have been wise in hesitating to adopt this new remedy as a substitute for lead arsenate which has given such good satisfaction for more than 25 years. So far as known to the writer, calcium arsenate has not come into general use except in Nova Scotia. It is stated by Sanders that in 1918 the orders for this material in the Annapolis Valley, Nova Scotia, exceeded those for all other arsenical insecticides combined. According to his investigations and observations, when calcium arsenate is used alone on apples the results are usually disastrous, causing a yellowing and burning of foliage. It was found, however, that when mixed with lime or with lime-sulphur solution the injury was greatly reduced or prevented. Foliage injury was much less when calcium arsenate and lime-sulphur solution were used than when lead arsenate and lime-sulphur solution was the combination spray employed. The chemical compatibility of the former combination spray and the incompatibility of the latter (formation of troublesome black sludge of lead sulphide) together with less cost and higher poison content, have caused this investigator to become an enthusiastic advocate of the use of calcium arsenate.

Properties

The chemical and physical properties and method of preparation of calcium arsenate have been studied by Robinson, Holland and Buckley, Haywood and Smith, and Scott and Siegler. Theoretically the number and

Continued on Page 702

The Fifteenth Arizona Fair

By M. E. Bemis

ARIZONA'S fifteenth territorial and state fair is now history. Of the 15 fairs that have been held I believe that I have attended the last nine or ten. I have seen many changes in a decade. Ten years ago the number of people who drove to the fair in automobiles was comparatively small; now the number who come from the country by any other means of conveyance is small indeed. Even many of the Indians drive in from the reservations in autos. Then the so-called desert auto race from Los Angeles to Phoenix was the big event; now the daredevil stunts of the bird men seem tame in comparison to those endurance tests of a decade ago.

Progress in the development of agriculture and livestock is even more marked than in means of transit. We had then only a few herds of pure bred cattle, so few that they were something of a rarity; now pure bred herds dot the farm lands all over the state. Long staple cotton then had not been grown on any farm except the experimental farms at Sacaton and at Yuma; now it is grown on 95,000 acres in the state and the products of these acres bring the farmers close to $20,000,000. Tractors then were big, cumbersome steam machines, impractical for any except the biggest farms; today no up to date farm of 100 acres or larger is considered complete without a tractor, and many smaller farms find their use economical.

"Bigger and Better" used to be the motto of the Arizona state fair commission. For many years each succeeding fair was bigger and better than its predecessor; then came the big war with its consequent worries and distractions that diverted people from the usual fair attractions and cut down the attendance. This year in point of attendance the fair was bigger than any preceding it; in exhibits of livestock and farm products there have been fairs that have excelled this last one.

There were many splendid animals shown, however, and many fine products of the soil. In an educational way there were many things to instruct, and the visitor to this year's fair must have gone back home wiser in many ways unless he were blind or directed his eyes to the race track and midway attractions alone.

In beef cattle there was a good showing. W. B. Mitchell of Marfa, Texas, exhibited a herd of 75 head of registered Herefords. He divided honors in this breed with C. E. Schilling of Wilcox, Arizona. The grand champion bull of the show was owned by this breeder. Ayrshires were shown by A. C. MacMinn of Phoenix and L. A. Johnson of Mesa. Jerseys were shown by Grimes Brothers of Phoenix, W. H. Bukey of Mesa, Wm. Bradshaw of Phoenix and Clyde Hussey of Phoenix. Holstein-Friesians were shown by John Bradshaw of Phoenix, the Tempe Normal School, and A. C. MacMinn of Phoenix. Many of the best cows of this breed have been shipped out of the state within the past year, and while some fine animals were shown the exhibit in dairy cattle has been better in some former fairs.

The exhibit of hogs was better than for several years, overflowing into the sheep barn. H. W. Haines of Casa Grande, Arizona, was there with some of his prize Poland Chinas, one of which weighed 900 pounds. The Winsor Ranch of Bonita, California, had some fine Duroc-Jerseys. Homan's Hog Farm of Ysleta, Texas, also was an out-of-state exhibitor of this popular breed. Mrs. George Lane and the Southwest Cotton Company of Phoenix were also exhibitors.

The sheep and goats were not there in the numbers sometimes seen, but good specimens were shown by several exhibitors, including the Grand Canyon Sheep Company of Flagstaff, The Sanford Sheep Company of Seligman and the University of Arizona. Aubrey Gist of Skull Valley, Arizona, one of the best known breeders of Angora goats in the United States, had some of his choice animals at the show.

The poultry show was worth while so far as quality is concerned, but not so large in numbers as in some former shows. White Leghorns led in numbers, with Rhode Island Whites second. There were quite a few out-of-state birds. A larger display of rabbits than common helped to increase the interest in the poultry department.

Tractors and farm implements occupied a considerable section of the fair grounds. Tents were erected to house the various machines, and the crowds of farmers that thronged them gave ample evidence of the importance of modern machines on the well kept farms.

In agricultural exhibits as well as livestock the display was not all that had been expected. Possibly fashions in ideas are changing. Possibly there was the thought that the proportionate prizes offered for the best pumpkin and for the fastest horse on the track were not equitable and that the horse was the more favored. Perhaps the producers were too busy to bother with preparing an exhibit for the doubtful chance of winning a dollar or two. The people that go to fairs seem to look for these things though and are disappointed if they don't find them; a disappointment that may, and may not, be forgotten in watching the races. If fairs are worth while then it would seem that some means should be used to get out exhibits of the best in livestock and products of the farm and orchards, though I cannot say just what those methods should be, but if it is necessary to increase the size of the purses for the races, in view of the high cost of production, might it not be still more advisable to raise the value of the premiums offered for cows and corn, for chickens and cotton, for hogs and for wheat.

The government exhibits and the exhibits of the several departments of the state university, experiment station and the agricultural extension workers were entertaining, instructive and altogether worth while. There was much that could be learned in a brief visit and far more that could be learned if one had time to stop, look and, in some cases, listen.

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture, and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday Nov. 22, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The past year has been one of bountiful crops. The corn fields and the orchards and all animal kind have united apparently in the endeavor to overcome man's destruction. There have been failures and there has been suffering, as has been the case every year since time began, and today the world is endeavoring to peer into the future and learn of next year rather than to consider the blessings of the past. It is a time for faith in the future and thankfulness for the gifts of the past.

LABORER OF TODAY

Dean Van Norman referred to tbe labor question as one of the live questions of today, and from an unusual angue. The laborer of today is the land owner of tomorrow. If conditions are created which make labor attractive to the brighter American boys of today tbey will become the land owners. If, upon the other hand, farm labor is relegated to another race of people that race will ultimately own our property. Californians are beginning to appreciate this fact. There is no necessity for a movement to urge people back to the land, but there is necessity for creating conditions which will offer inducements on the farm to the boys already there and struggling for a chance to stay.

This fact has long been appreciated, but the time has come when the thinking should be done out loud, and, better, that there should be effective action.

WATCHING CALIFORNIA

Mr. Easton, a representative of the London Times, is making investigation at California's only state land settlement, and before going on and making other investigations in Australia will send to "The Thunderer" his impressions and account of methods of work at Durham. The settlement is less than a year old, but California's fame is already extending because of it. Several other states of the Union have sent representatives to Durham, one, the son of a governor, having worked on the settlement in order to secure first hand dependable information. Now comes selection of a new tract located near Turlock, and on this tract work has already begun to prepare the 8,000 acres for the making of a large number of farm homes. The taxpayers of California are not paying for these lands for the improvements upon them; every dollar is to be returned by the purchasers. The credit of the state is used, it is true, but even the costs of making collections and superintending the work is passed to the purchasers. But amongst the many advantages there is no addition to these costs in the form of excessive charges of real estate agents or profits to the promoter. And again, the welfare of the state and of these particular purchasers is safeguarded by the employment of advisers, farm engineers, soil experts, farm planners and others.

Mr. Easton's own country, Australia, has similar examples of wisdom in land settlement, but we believe none which have great advantage over that of California.

THE DOLLARETTE

Frank Swett remarked at the recent state convention that the dollar has become a very diminutive dollarette. The amount of corn and bacon, of calico and wool stuffs it will purchase is proof of the contempt in which it is held. And of course the farmer gets tbe blame.

On this point we will give our readers moro of what Mr. Swett said, in a later Cultivator. His readable story in Frank Swett style, delivered at the convention, took the 60 cent can of pears for which the consumer laid down a 50 cent piece and a ten cent piece with a grumble at the immense profit the pear grower was getting; the 50 cent piece was dissected and found to belong entirely to the canner, the transportation company, the can maker, the sugar factory, the laborer, and to so many others that there was nothing whatever left for the farmer. However, he was content to walk away with ten cents, but even of this he had to give up so much for fertilizer, for the labor of cultivation and irrigation and other farm expenses that ultimately but four cents of the 60 remained in his pocket.

In other words, "de ducks gets it all," which reminds us of Mr. Powell's story at the convention. Rastus was congratulated on his big crop and the big prices of cotton, but he looked serious and said, "De ducks gets it all." Ducks not being known to have a specially strong liking for cotton, he was asked for an explanation. He said: "Well, Boss, it's thisaway. My old mule he up and laid down and died. Massa he bought me a new mule. When he settles up for de cotton he tells me 'bout dat mule and deducks $100. Den we had to have bacon and hominy to live on and he deducks some more. Jomima had to have a calico dress and Massa he deducks some more."

The pear story and the duck story go together—"de ducks gets it all."

FROM THE PRESIDENT'S PROCLAMATION

A year ago our people poured out their hearts in praise and thanksgiving that through Divine aid the right was victorious and peace had come to the nations which had so courageously struggled in defense of human liberty and justice. Now that the stern task is ended and the fruits of achievement are ours, we look forward with confidence to the dawn of an era where the sacrifices of the nations will find recompense in a world at peace.

But to attain the consummation of the great work to which the American people devoted their manhood and the vast resources of their country they should, as they give thanks to God, reconsecrate themselves to those principles of right which triumphed through His merciful goodness. Our gratitude can find no more perfect expression than to bulwark with loyalty and patriotism those principles for which the free peoples of the earth fought and died.

During the past year we have had much to make us grateful. In spite of the confusion in our economic life resulting from the war, we have prospered. Our harvests have been plentiful and of our abundance we have been able to render succor to less favored nations. Our democracy remains unshaken in a world torn with political and social unrest. Our traditional ideals are still our guides in the path of progress and civilization.

These great blessings, vouchsafed to us, for which we devoutly give thanks, should arouse us to a fuller sense of our duty to ourselves and to mankind to see to it that nothing we may do shall mar the completeness of the victory which we helped to win. No selfish purpose animated us in becoming participants in the world war, and with a like spirit of unselfishness we should strive to aid by our example and by our cooperation in realizing the enduring welfare of all peoples and in bringing into being a world ruled by friendship and good will.

CAR WINDOW NOTES

When one travels by train from a point 150 miles north of the southern boundary of a state to within about the same distance of its northern boundary, and the trip occupies a full 24 hours, it seems it must be a state of some size. California is that state, and on such a trip several things come in through the car window.

* * *

Most glorious of these is the vision of reds, yellows and browns in canyons and on hillsides. The alders, the poplar and many other trees show these gorgeous colors. Contrasting with these is the bluish green of the juniper.

* * *

The brown has been accentuated by the need for rain. The soil, the trees, the grasses which would paint in green the pastures, the livestock, all are calling for rain.

* * *

Here and there 12 horse gangs are fallowing the ground, making ready for seeding and for the belated rain. More often the big 75's or smaller tractors are being used.

* * *

Besides tractors in the field there are tractors on flat cars. Many of these in obscure little towns are on railway sidings where the only improvement within sight is a great warehouse, and, again, in larger numbers on the cars or in the loading in the town where many tractors are made. As time passes the number of these tractors which will come through the car windows of California will increase.

* * *

A great trestle like structure where an endless belt or carrier is taking cakes of ice along its several hundred feet of length. Occasionally a car of California perishables and men with ice hooks dexterously giving a push or a pull while the ice drops into the refrigerator end of the car. It is simply one of those devices contrived by man to save of that most expensive factor in production, labor.

* * *

A California state built highway borders much of the railway through the great valley. Occasionally a low wheeled wagon in which is wood, tank for heating asphaltum and various tools, accompanied by smells of which the passing train is permitted to partake, indicates up-keep work which makes for California's well kept roads This continual repair work explains why express train speed means less as an expression of swiftness than does auto speed. Several times between Bakersfield and Sacramento autos came alongside and deliberately passed our swiftly moving train. Nor were these all daredevil drivers; simply business men on a business mission, if a car window look afforded opportunity for judging.

* * *

In Tokay Town they are still harvesting grapes. Thousands of boxes are still scattered through vineyards, and it looked as if some of the packing houses were still working. On the other hand, flat cars were occasionally passed in which were many tons of grapes loosely dumped, apparently ready for the winery. We are wondering where they will go.

* * *

Already pruning of apricots has begun. Some orchards of two and three years show about the trees litter of pruning. Nor was this pruning so severe as in former years. "Prune longer" seems to be the slogan. Is it best? Ask us later, or, better, ask the trees when they yield their crops in a few years.

* * *

"California Almond Growers" appears on many a great packing house on sidings from Stanislaus County north. It is quite convincing proof of the several thousand tons of this delicious nut produced in California.

* * *

One wouldn't think it, but occasionally a great combined harvester comes through the car window. One wouldn't think it for the simple reason that those great machines cost a great many of the dollars which are of lesser purchasing power than formerly, hence why these magnificent machines exposed to the elements to be rusted and warped and decayed so that their efficiency is lessened? Why

* * *

Blanket men—about one a mile Seems like a lot, though no accurate count was made, but by ones and twos, and occasionally in small crowds around a railway tie fire, they were busy standing or possibly strolling and going—nowhere. Yet our labor shortage is serious.

* * *

By the roadside a long stretch of walnuts, the trunks of the trees rough of bark and black like the bark of the native, the tops showing the smooth white bark of the English or, usually called, California nut. Apparently roadside trees grafted over and made to produce valuable crops.

Cooperation the Keyword at State Convention

Editorial Correspondence

ONE word describes better than any other the tenor of addresses, discussions and actions of the sessions of the Fifty Second State Fruit Growers and Farmers' Convention now closing here in Butte County. I say in Butte County, rather than Chico, for the whole county, the whole of the Sacramento Valley, has cooperated in making the convention a success.

From the moment of opening on Wednesday morning, when Rev. Geo. T. Meeker asked divine direction for producers of food and makers of homes in California valleys and hills, as they planned for more food and better homes, to the closing moment Saturday afternoon the cooperative spirit prevailed.

Mayor Reynolds spoke of the cooperative spirit which had prevailed in preparing for the convention and the unaminous welcome which he assured us was as hearty as that which John Bidwell would have extended had he been here.

George H. Hecke, director of agriculture for California, gave as the keyword for the convention, "Cooperation." After reviewing the history and work of the department, Mr. Hecke said:

Geo. H. Hecke

Agriculture is by far the largest and most important industry in California. Figures recently prepared by this office show production values for the year 1918 as follows:

Fruit and grape crops	$171,626,000
Field and truck crops	351,400,000
	$523,026,000
Marketable farm animals	$ 67,696,955
Dairy products	54,528,056
	$122,125,011
Total agricultural and livestock	$645,151,011

The figures of 1919 naturally will exceed the 1918 production estimates by many millions and at least 15 per cent would be only a very conservative increase.

For further comparison the 1918 production values show:

Minerals	$ 37,686,072
Oil	127,459,221
Lumber	29,000,000

or that the agricultural production is more than three times as large as these three great industries combined; and it is thus very evident that the great bulk of California's economic wealth accrues to her revenues from agricultural production.

As a logical conclusion it follows that the department of agriculture, which is now charged with the protection of such an extensive industry, must expand to meet the heavy demands upon it now and increasingly in the near future.

The need for adequate assistance for agriculture has been fully recognized by Governor Stephens who has laid out his agricultural platform in an editorial, "Why We Must Foster Agriculture," which will appear in the October number of the Monthly Bulletin of the department of agriculture.

The important aspect of these questions may be gathered from the timely statements included by Governor Stephens as a part of his article: "Never before in the history of the world has the realization of humanity's utter dependence on the agriculturist been so acute as it is today."

How, then, may we promote the growth of this department of agriculture to realize the maximum benefits at this time? Let us look back upon the proceedings of years ago. It was at fruit growers conventions that the need and possibility of cooperative marketing organizations were emphasized, and where the ideas materialized which later resulted in the formation of the earlier cooperative associations, which have proved of sterling worth from every viewpoint.

The outgrowth of the cooperative idea has been the organization of growers of practically every kind of farm products and fruit, and this has resulted in placing the individual growers in a position where instead of realizing a loss for their time and work, they have been able to secure at least a reasonable profit.

These cooperative associations represent the greatest development which has come to California agriculture, and as a united body they are in a position gracefully to suggest such needful agricultural legislation and to secure the well merited attention which their projects justify. Here then are the means by which adequate assistance and necessary protection to the agricultural industry may be secured.

In the past special attention has been given to questions of labor and capital by our legislatures, and under the extraordinary stress of present conditions this is the time for agriculture to be accorded its well deserved and vital consideration. Especially is it timely that these problems be given due consideration and provided for against the coming of the 1921 legislature with its usual complement of progressive agricultural legislation. We feel that these cooperative marketing organizations form the logical bodies from which to secure such needful legislation and that the ideal method of procedure is through the creation of a legislative committee composed of a representative from each of these associations.

The reasons for the formation of a legislative committee may easily be found in the fact that our recent legislatures as a whole have been kindly disposed toward measures fostering progressive agriculture. In the past, however, no concerted effort has ever been made to bring the farmers case to the attention of the legislature in a unified way. Every agricultural appropriation bill usually has met with opposition through unfortunate misunderstanding. Under such conditions, was it not almost impossible for our lawmakers to know the great thing to be done in any given case? The very lack of concerted action on the part of the farmers, added to the uncertainty of the legislators, had inadvertently clouded the merits of the case, and it is through such ill timed and disconcerted activity that a resulting lack of support was realized in many cases.

The attention of this committee then should be turned to a consideration of the various needs, their relative importance and urgency, and some definite and workable plan prepared for presentation to the coming legislature, behind which plan the entire force of all these organizations can be placed.

Every step taken by the committee would be under the direct control of the organizations that it represents, and its work would be submitted at last to the fruit growers and farmers for approval at the next fruit growers and farmers convention, and finally to the legislators for enactment. It is certain that such procedure would suggest a proper guide to legislative consideration and one that would command respect and support from all concerned.

To summarize the principal duties of this committee:

First, it must investigate the needs of agriculture and secure concerted and definite action.

Second, it must act impartially, looking always for the opportunity to secure the best legislation regardless of what branches of the state government or individual agencies may be affected.

Third, it must enjoy absolute freedom from politics, and must avoid all reference to political controversies.

This, then, is the all important and history making step which this Chico convention may take toward the upbuilding of California agriculture. To my mind this movement bids fair to become one of the most effective steps that could possibly be taken, and is one which will maintain our agricultural industry in its rightful first place as, indeed, no other single step has ever done.

Last Session of the Convention

Meeting under the oaks in Durham Land Settlement. Judge Shields calling the convention to order.

Reveries of a Californian

The topic given to James Mills was "California Agriculture; Its Importance; the Things that Threaten It; the Need for Protection." This is somewhat of a lengthy title and Mr. Mills was inspired by it to give us a most eloquent reverie touching upon things as they were in California when he came here in the 80's and as they have grown to be in the 'teens.

Cooperation With the Punch

"Accomplishments and Possibilities of Cooperatioon" set the pace for the whole convention. It was discussed by cooperators who have succeeded in cooperating. They told not how it ought to be done by somebody else but how it has been done and is being done and will continue to be done by growers who have saved millions of dollars for themselves and their industry because of cooperation. These statements were so forceful that we hope later to give more fully than is possible in this week's limited space. These addresses were made by Geo. W. Pierce of the Almond Growers Association; F. A. Seymour of the Raisin Growers Association; Frank T. Swett of the Pear Growers Association; A. E. Sunderland of the Peach Growers Association; G. Harold Powell of the California Fruit Growers Exchange; J. H. Stephens of the California Rice Growers Association; Charles H. Gray of the California Cooperative Canneries.

An Educational Evening

Contrary to all former conventions a set program for an entire evening was only carried out at one session. One evening was given up to a banquet at Oroville, another to a banquet a Chico. However, Wednesday evening's program called for a discussion of "Function of the Junior College in Its Relation to Agriculture." This topic was handled by Dr. E. B. Copeland, president of the Chico chamber of commerce; by J. B. Lillard, state supervisor of agricultural education, and by Mrs. Elizabeth Hughes, assemblywoman of the 7th district. These speakers and the audience were unanimous in the belief that the one and one-half per cent of American young people who have the advantage of a college education shall be materially increased. To that end the junior college, not exactly carried into the home but carried into the home town of the young people of the state, will greatly increase this percentage.

Some have expressed fear that this movement for a junior college would increase the work of the high school. This it would not, though it may have a certain connection with high schools. The course will give to graduates of the high school the first two years of work which is now given in the state universities. Such schooling advantage is already provided in one California town, Ontario in San Bernardino County. This school was held by all the speakers to be an example of the advantages which should be given in every California town.

At Oroville

The next day an early start was made for Oroville, 21 miles away.

Continued on Page 689.

Agricultural News Notes of the Pacific Coast

Northern California

Butte County found it necessary to raise the coyote bounty from $3 to $5.

Onions at Stockton are selling at $4.50 a hundred and potatoes as high as $3.

There are still 1,000 cars of grapes to be shipped from the Sacramento Valley.

Sacramento shipped a car of 1,000 sacks of almonds worth $30 a sack, or $30,000.

A bass weighing 51 pounds was caught in the river at Petaluma, Sonoma County.

Hamilton City, Glenn County, is to have a large deciduous fruit dehydrating plant.

More than 5,500,000 pounds of rice were handled on the Sacramento River this season.

A Colusa County rice grower who sold 105,000 bags says it will net him about two dollars a bag.

Yuba and Sutter Counties shipped 5,000 tons of raisins, an increase of 1,600 tons over last year.

Papers filed in Sonoma County show three Japanese are directors of the Hanamura Farm Company.

There have been more than 50 prosecutions of violators of the apple standardization law in Oakland.

Wheatland, Yuba County, at one time a great hop-producing town, has hopped over to a record for deciduous fruits.

The Western Rice Growers' Company has purchased another 5,000 acres of rice lands near Nelson, Butte County.

J. W. Lightfoot at Chico, Butte County, caught a salmon out of the Sacramento River that weighed 78 pounds.

San Franciscans report the toyon or Christmas berry is becoming extinct in the north by reason of reckless picking.

Land in Colusa County which a few years ago rented for 35 cents an acre now rents for $47.50 an acre for rice culture.

The famous Hooker oak at Chico, Butte County, was 105 feet high but a stroke of lightning clipped off four feet of the topmost branch.

Every grape grower in the wine grape counties is being questioned by federal agents. Uncle Sam is after that tax of 16 cents a gallon.

Stockton is fighting to hold the headquarters of the California Bean Growers Association which the directors voted to move to San Francisco.

The Solano Courier says Warren A. Woods sold his 27 acre orchard to a Japanese and Edward Dinkelspiel sold his 60 acre orchard to a Chinaman.

The manager of the California Almond Growers' Exchange, now in New York, wires that 16,000 bags of California almonds sold there for more than $500,000.

Ten years ago a piece of land near Arbuckle sold for $60 an acre. As it was improved it sold for $125, then $210, again for $410, now for $500 and is offered for $625.

According to reports received from Chico, the value of the three principal orchard crops in that vicinity this year was $3,000,000. The crops are peaches, prunes and almonds.

Central California

Porterville has shipped 30 cars of Wonderful pomegranates.

Watsonville will ship about 100 cars of potatoes and 30 cars of onions.

The best broom corn in Tulare County is selling for $200-$300 a ton.

Lindsay, Tulare County, will hold a chrysanthemum show November 11-12.

The total pay roll for Tulare County creameries in October was $206,188.33.

Brooms from rice straw are being manufactured at Oakdale, Stanislaus County.

The 80 acre Ramm vineyard at Dinuba, Tulare County, sold for $80,000.

A 15 acre alfalfa ranch near Yuma, Arizona, brought $350 an acre for the seed crop.

Kern County is warring on the weed known as bur-nut, by name Tribulus terrestris.

Large shipments of casabas are still being sent from Ripon, San Joaquin County.

Reedley, Fresno County, is building a new cannery, the second one for that district.

The delta lands of the San Joaquin River, heretofore impassable in wet seasons, are becoming a network of good roads.

A carload of Tulare County grapefruit sold in San Francisco last week for $6 a box.

From 15,000 to 20,000 sacks of potatoes to 100 acres is the yield in Santa Cruz County.

More than 1,800 acres of prunes were planted in Tulare County in the 1918-19 season.

One shipper at Turlock, Stanislaus County, sent out 270 carloads of cantaloupes in 1919.

C. B. Hunt of Porterville, Tulare County, sold his avocados in New York for $1.50 a dozen net, or more than $100 a tree.

D. C. Mattison of Modesto, Stanislaus County, has a pineapple casaba melon weighing 16 pounds, grown without irrigation.

Four ten acre sites for experiments in citrus groves have been chosen in Tulare County by representatives of the state university.

A Santa Clara County Mission fig tree 62 years old is 62 feet high, 60 feet in spread and smallest circumference of trunk is 12 feet.

Carloads of fruit shipped from Tulare County during the season just closed: Grapes, 1,008; peaches, 63; Plums, 135; apricots, 3; figs, 1; mixed, 2.

The fire damaged almonds in the warehouse at Turlock, Stanislaus County, sold for $80 a ton, and the insurance company paid the loss in full, more than $40,000.

The Fresno County Chamber of Commerce backs the California Associated Raisin Company in its price making and has sent resolutions to that effect to Washington.

A sale of school lands will be held in Madera, Fresno, Tulare and Kern Counties during November. Madera County contains 1,440 acres; Fresno County, 4,680 acres; Tulare County, 2,070 acres, and Kern County 14,315 acres of vacant school land.

Southern California

Van Nuys reports the biggest building boom in its history.

El Centro will vote on a bond issue of $200,000 to improve the water system, fire alarm system and to build a city hall.

The honey crop was so short in Orange County that apiarists are feeding bees.

The first chilis of the 1919 crop are being shipped; the price is 16 cents a pound.

About 600 acres is the area of citrus fruits in the Fallbrok, San Diego County, region.

A party of Hindus have leased 800 acres of land near Holtville and will plant cotton.

The work of partitioning the 23,503 acre Broome ranch in Ventura County has been completed.

W. J. Stokes of Hemet, Riverside County, gathered 800 pounds of walnuts from five trees.

Cotton touched its highest price in the Imperial Valley when some sales were made at 52 cents.

The date harvest in the Coachella Valley is over and the crop was much larger than that of 1918.

Ripley is the name of a new town just started in the Palo Verde Valley nine miles south of Blythe.

Blythe in the Palo Verde section of Imperial County is bragging on a pumpkin weighing 97 pounds.

The Upland Lemon Growers will erect another packing house at Upland, San Bernardino County.

Hemet, Riverside County, shipped a car of walnuts that brought the growers a gross return of $16,098.

Planting of Bermuda onions, both Crystal Wax and Yellow, is now in full swing in the Coachella Valley.

Somewhat more than 6,000 acres of citrus trees have been fumigated in Los Angeles County during 1919.

The Old Newport Lima Bean Growers Association is the name of the latest organization in Orange County.

A caterpillar tractor with three trailers delivered a load of beans at Garden Grove, Orange County, valued at $4,000.

The Sylmar olive orchard in the San Fernando Valley, the largest in the world, is this year carrying its heaviest crop.

During September in the Whittier district of Los Angeles County 1,072 acres of oranges and lemons were fumigated.

In spite of the light frosts the Pomona Los Angeles County cannery is still running on tomatoes and believes it will continue to December.

The state highway commission denied the petition of an Orange County farmer to cut down the eucalyptus trees on the state highway in front of his property.

The supervisors of Imperial County have appropriated $3,000 for the celebrating of the opening of the San Diego and Arizona Railroad, to be held December 5-6.

For the past five years the United States department of agriculture has maintained a chemical laboratory at Los Angeles for the study of by-products of citrus fruits.

The Coast and General

The 1919 Wenatchee, Washington, apple output is 10,500 cars.

Hood River, Oregon, shipped 30 carloads of Bartlett pears this season.

Two new cider mills have started operations at Hood River, Oregon.

Long staple cotton at Chandler, Arizona, has gone to 75 cents and is still rising.

Prune growers at Mosier, Oregon, received $1,000 per acre from their orchards.

A large acreage of almonds will be planted near Yuma, Arizona, the coming spring.

A car shortage is preventing potato growers of British Columbia from shipping their crops.

Roseburg, Oregon, brags of a field of corn "15 feet high, each stalk carrying three huge ears."

In the Willamette Valley, Oregon, more than 10,000 acres of loganberries will be grown next year.

Since 1902 the Wenatchee Valley, Washington, apple crop has grown from two to 10,000 carloads.

A farmer at Punta Gorda has picked 40 good sized pumpkins from one vine and has a dozen more still green.

A carload of pears from Rogue River Valley, Oregon, sold in New York for $6.47 a box, a record price.

The Florida Grower says oranges and grapefruit are running small, requiring 200 to fill the expected 150-box.

The L. B. Harris ranch near Sunnyside, Washington, was purchased by the Carnation Milk Company for $62,000.

Fewer potatoes than common are said to have been stored in Coconino County, Arizona, the potato section of the state.

Hood River apples to the number of 4,000 boxes comprised the first shipment to the Philippines from Seattle last week.

A news item states the rice harvest on the west coast of Florida is completed, much of it yielding 40 to 50 bushels to the acre.

A late Florida hurricane aided the asparagus growers on low seaside lands $100 an acre by covering the land with salt spray.

An official survey of Florida reveals 11,356,414 citrus trees of which 8,000,000 are of bearing age. The acreage covered is 160,397, owned by 47,401 persons.

A young Bartlett pear at Cottage Grove, Oregon, bore four crops this summer. The first was very large, diminishing in the fourth to the size of hazel nuts.

The castor bean growers of this country are to be paid about four and a half million dollars for losses incurred in trying to produce a crop for the government.

A new organization of cotton growers, known as the Arizona American-Egyptian Cotton Growers Association, has been formed in the Salt River Valley of Arizona. It is expected to do for the cotton growers what the Fruit Growers Association of California has done for the fruit growers of that state in the way of marketing, credits, shipments and many other features.

"THE use of Goodyear Cord Pneumatic Truck Tires on my truck has saved me a great deal of time and money. They are an economy all around in general farm work and livestock hauling—especially over farm land and rough, slippery country roads."—Mr. W. H. Duley, Livestock Farmer, Starks, Maine

THE photograph above was taken January 3rd, 1919, on the livestock farm of W. H. Duley, ten miles from Starks, Maine.

At that time Mr. Duley told us that he had been hauling on Goodyear Cord Pneumatic Truck Tires during weather that had stopped local solid-tired trucks.

The tractive Goodyear Cords had enabled his truck to overcome fierce road conditions and, in addition, to pull solid-tired trucks out of mire and up stiff grades.

The easy-rolling Goodyear Cords had enabled his truck to average three and four trips to town per day, an amount of hauling which would have required three teams.

The cushioning Goodyear Cords had enabled his truck to deliver decidedly good mileage on gasoline and oil and to remain in excellent mechanical order despite the bad going.

On top of all this, the tough Goodyear Cords had outlasted neighbors' solid tires which wore down rapidly due to spinning in the gravel on the steep hills.

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County Horticultural Commissioners in State Convention

Editorial Correspondence

THE aggregation of conventions which responds to the call for the State Convention of Fruit Growers and Farmers always has for its forerunner the state convention of county horticultural commissioners. This Chico convention was no exception. The commissioners were here—nearly all of them—and in occasional instances, deputies and inspectors. How to make the best bug policeman and standardization cop was the main topic. But occasionally a restiveness appeared to sweep over the assemblage and some commissioner moved that "we go into executive session." Then President Seuiberger looked genial and said: "Our latch string is no longer out; newspaper representatives and others who do not find this environment congenial may have relief by closing the door—from the outside."

So far as I could learn there was no furniture broken up during these sessions. There was some peekin' under, or over, or leaking at least, for the Chico papers came across with full accounts of these "executive" sessions and no one seemed to worry.

How to enforce standardization laws, secure honest pack, protect the consumer and create a greater demand for the products of California, whether of nursery, orchard or field, gave to the commissioners opportunity for variety in oratory and more opportunity for downright earnest discussion.

For instanee, one commissioner reported finding boxes of apples bearing certificate of inspector in which were wormy appies in abundance. Arrest and fine followed, but how can such violations of the law be prevented? Chief Standardizer Avery Hoyt said that nothing could prevent an apple shipper purchasing the stamps for using on apple boxes. These stamps are sold to shipper and the proceeds of the sale pay for services of inspectors.

Regarding the News Letter issued by the state department and of which Bronte A. Reynoids is editor, the commissioners thought family affairs should be omitted and information of real value in pest control or in standardization should be given place.

Weed control on state highways is deemed in the province of the state highway commission. There are millions of star thisties along some of the highways, which make it impossible for acreage owners alongside to eradicate the pest. A committee consisting of Commissioners Sharp, Bremner and Gorton was instructed to petition the state highway commission to eradicate weed pests.

W. C. Jacobsen, superintendent of rodent control, is supposed to own all the ground squirrels of California, but he doesn't keep them under proper control and they trespass. They trespass without conscience or consideration of H. C. L. for each ground squirrel in the state has an appetite which costs the farmers of the state approximately $30 (yes, that's no mistake of the printer, it's 30 dollars, not 30 cents).

That figure is taken from an address before the horticultural commissioners, which was made by Dr. W. T Harrison of the United States public health service. Dr. Harrison dwelt largely upon the economic aspect of the squirrel control though his work has to do with the suppression of the pest because of its direct connection with that deadliest of all diseases, bubonic plague. He referred to the recent incident, tragedy rather, in which one bubonic plague infected squirrel was the cause of 15 deaths in Oakland. A Mexican went into the hills and killed some squirrels. It is supposed one of these was infected with bubonic plague germs which in the skinning of the squirrel may have infected some wound on the hand. In any case the Mexican died, as did 14 others. Of the number were two doctors and two nurses, who had attended the patients. Most of these deaths were from pneumonic plague which developed from the original bubonic. In pneumonic plague there is invariably a 100 per cent death rate.

Bubonic plague infested squirrels have been found in ten California Counties at some time during the past four or five years. Most of these cases are found within a few miles of San Francisco harbor.

One county alone, Tulare, in which there never has been any bubonic plague, has used during the past year seven cars of carbon bisulphide for smothering squirrels, and Dr. Harrison estimates that the money invested in these seven cars has been returned to Tulare County, in crops saved, at least 50 times.

There has been spent in the state of California $375.000 in squirrel control. and it has saved foods and fuels to the value of at least $5.000,000.

Statistics

In the matter of gathering statistics there is diversity. Shall an acre on which is planted, say, a number of walnuts interset with peaches and again interplanted to beans, be reported in as an acre of walnuts, also an acre of peaches, also an acre of beans? Or shall it be a third of an acre of each, or shall it be by the number of plants. Discussion of various ramifications of these questions afforded many a happy hour for the commissioners.

And still they hadn't talked enough, so after the banquet where they "et a lot, talked a lot and said something," they

Resolved. Whereas, there are many matters of vital importance to the work of the county horticultural commissioners which should have careful consideration and concerted action taken:

Therefore be it resolved, that we, county horticultural commissioners in convention assembled, express ourselves as favoring a meeting of all commissioners to be called by the director of agriculture at a time and place to be selected by him.

Also

"We pledge our loyal support to the new director of agriculture."

Also

There exists a very urgent need for pure seed legislation.

Therefore we favor the passage of measures by the coming legislature, and we will pledge our support to this matter to the Associated Chambers of Commerce. State Association of Farm Bureaus, and similar organizations of this state, for the purpose of furthering the agricultural interests of this state.

Next Year's Officers

The following officers were elected for the coming year: G R. Gorton San Diego, was elected president; A A. Brock, Ventura, vice president.

Continued on Page 709.

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Some Convention Attendants

Upper picture, left to right: Geo. H. Hecke, state director of agriculture; Dr. Elwood Mead, chairman state land settlement board; Wm. C. Kreutzer, superintendent Durham settlement; Mr. Easton, Australian representative of London Times, attending convention and gathering information as to land settlement. Next picture: G. P. Rixford and Walter T. Swingle of the bureau of plant industry, U. S. D. A. Third picture from top: Judge Peter J. Shields, John P. Irish, B. F. Walton. Bottom picture: Frederick J. Rose, convention reporter; R. H. Taylor, convention secretary and all around general manager.

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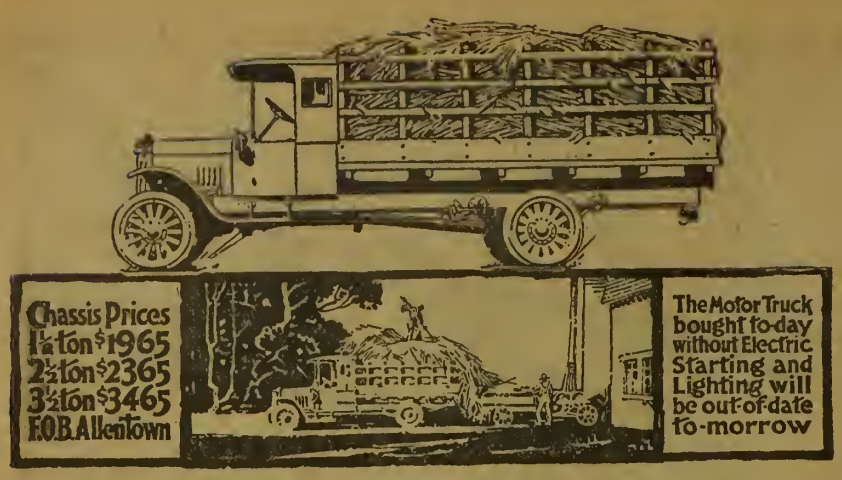
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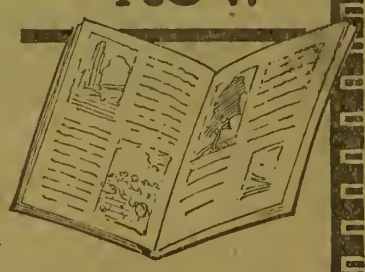
$1,036,336 for Shelled Almonds

The above amount was paid for almonds imported into the United States during April. California fruit growers should plant more almond trees and keep this money at home.

Write to us about best varieties to plant.



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Helps From Uncle Sam

By Ernest Braunton

THE United States department of agriculture has a minature manufacturing plant in Los Angeles that is turning out samples of a great many by-products from our varied fruit industries. And yet the field studies are as extensive as the laboratory research and of even greater value. Few are aware of the existence of this plant, much less do they know of the great work going on there for the benefit of the California fruit growers and the allied industries.

The Citrus By-Products Laboratory was established in 1914, after a staff of field chemists had been sent from Washington to study the maturity of citrus and other fruits. There was such a strong demand for information regarding the utilization of cull oranges, lemons and grapefruit that a laboratory was established at 142 South Anderson Street, Los Angeles, under the direction of E. M. Chace, chemist in charge. There is an enormous amount of citrus culls each year from undersized or too large fruit, from that which is misshapen, unsightly, thorn punctured, injured in picking or in other ways. All this was waste aside from a small amount used in two primitive plants for the production of citric acid. Cull oranges could be obtained in large quantities for $5 a ton; now they bring $25, and the two small commercial concerns have grown to 20 that are producing orange by-products to the extent of 7,000,000 pounds a year. Four concerns on lemon by-products also have a capacity of over 50,000 pounds of lemon oil, 500,000 pounds of citrate of lime and over 1,500,000 pounds of citric acid.

One of the most patient of Mr. Chace's researches has been for drinks from cull fruits, especially from grapefruit, and experts who have tasted a blend he now has are loud in their praises. The writer was asked to sample some that had been bottled 18 months and its flavor had in no wise deteriorated. It is composed of 80 per cent grapefruit juice and 20 per cent loganberry juice. It is very pleasing, both to the eye and the palate and will no doubt soon be manufactured at some of the local plants. The juices are bottled without dilution, though a little sweetening is added Many other blends of good quality are being tried, one of them having a base of pineapple juice, another a blend of juices from pomegranate and grapefruit. Orange juice is more of a problem as it has a higher sugar content than grapefruit juice and does not lend itself so well to sterilization, and of course, by reason of the sugar, ferments more quickly. But their greatest problem is to devise an improved process of separating the oil from lemon peel. Mr. Chace having visited Sicily to investigate the processess and methods of expression used there.

Field Work

Thus far we have mentioned only laboratory experiment and research, but field work is carried on in every county in the south end of the state, and each year part of the staff visits Florida to tell about and demonstrate the good work accomplished in California. Mr. Chace is just leaving for Florida, and one of his assistants, H. D. Poore, preceded him by some weeks. During Mr. Chace's absence, C. G. Church, assistant chemist, is in charge of local investigations. For some years they have been studying the maturity of cantaloupes in the Imperial and Coachella Valleys to devise a means by which the grower can tell at just what stage he may harvest his crop with greatest safety and profit. The latest study taken up is the maturity of the avocado, and members of the avocado growers association have kindly set aside for the use of the government experts one tree of each variety. These are visited monthly and accurate notes made of their condition so that even slight changes are closely observed. It is believed accurate data may be secured which will enable the grower to judge the maturing of his fruit, so that while none may be marketed green, all may be allowed to remain on the trees until it has reached the most palatable state. Inquiries of all sorts pertaining to fruits and their uses are constantly coming in and, as means of utilization are determined, circulars will be issued to all applicants, containing approved recipes. The first two of these appeared in our household department last week.

California Crop Prospects

The crop reporting bureau of the bureau of crop estimates, United States department of agriculture, makes the following estimates of crop conditions in California.

The total production of apples will exceed the early estimates, it now appears. The commercial, or boxed crop will be around four million boxes, which will be slightly less than 60 per cent of the total crop.

Pears will exceed last year's crop by at least 10 per cent. Shipments are not so large as in 1918 and 1917, but the tonnage dried and canned will both be materially larger, making the total crop about 110,000 tons.

Production figures on almonds and walnuts will be fully up to the forecasts of previous months, and owing to older trees and new bearing acreage both will be record crops.

Both wine and table grapes are still being shipped to the limit of available cars, although the end of the season is in sight.

Raisins are now all in the sweat boxes. The indicated average yield was not quite a ton to the acre, and the acreage picked about five per cent greater than the usual. The total production will be very close to 180,000 tons of raisins.

Oranges are ripening in Northern and Central California, and before the end of the month picking in these districts will be general. Reports on conditions show the navel crop to be about on a par with last year but only 60 per cent of a normal. Valencias and miscellaneous varieties are only 70 per cent of a normal and 80 per cent of last year.

Lemons are only 77 per cent of a normal compared with 88 last year and a ten-year average of 86.

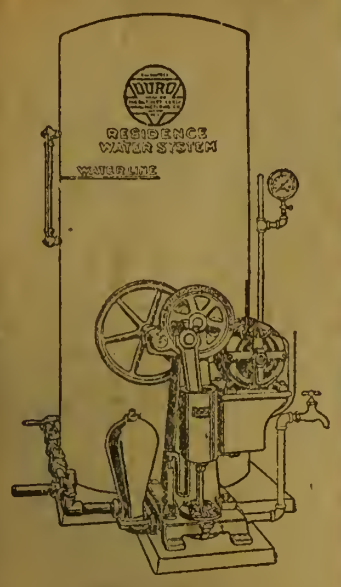
The yield of "beans other than limas" varies from two sacks to the acre in some sections to over 15 sacks in others, with an average of all varieties for the state [illegible] pounds, or about 13 bushels. Of the 290,000 acres planted, 95 per cent, or about 275,000 acres, were harvested, making the total production 2,262,000 centals.

The production of limas was estimated one month ago at 540,000 centals. This will give a total of all beans of 2,802,000 centals, equivalent to 4,672,000 bushels compared to 8,534,000 bushels last year and 8,091,000 bushels in 1917.

The condition of sugar beets on November 1 was 68, the same as one month ago. Harvest of beets is about over with very disappointing yields in some sections. Drouth, bugs and plant diseases all took a crack at the beet men this year, and the indicated average yield per acre is only 7.30 tons compared to an average of 9.55 tons for the past nine years.

As the harvesting of the corn crop is still in progress, it is difficult to determine accurately the yield per acre in California. Based on reports now at hand, it appears to be 33 bushels, as compared with 35 bushels last year The percentage of acreage cut for silos is greater than in 1918.

The yield per acre of Irish potatoes in California shows a falling off of six bushels—129 bushels as compared with 135 last year Our estimate of the states' total production is 11,760,000 bushels. Our reports show that 80 per cent of the acreage was grown for the market. About 60 per cent of the California commercial production is made up of late winter potatoes or that portion of the crop moving after September 1. This year the



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shipments of potatoes harvested after September 1 promise to be about 5,260 cars as compared with 6,200 last year, 4,590 in 1917 and 4,590 in 1916. Most of the late potatoes in California are grown in the delta region, which will probably produce 95 per cent of the late storage crop of potatoes, or nearly 5,000 cars.

Sweet potatoes in California have not met early expectations. The shortage of water for irrigation at a critical period cut down the average per acre from 170 bushels last year to 133 bushels this year. They are running small in size, but the quality is good. It is found in harvesting the crop that the earlier estimate of acreage planted was too low; therefore the total production will be about 1,000,000 bushels.

The weather has been ideal for rice harvesting and threshing. Though there have been some phenomenal yields in a few fields, the average yield is falling a little below earlier predictions.

BUD SELECTION

At the last annual convention of the California Association of Nurserymen, the most interesting discussion was upon the subject of bud selection for deciduous trees. For several years this method has been followed by the leading propagators of citrus stock, but only of late has the grower of deciduous trees turned his attention to this most vital matter. California's fruit industries are growing now as never before, and as they develop competition becomes keener. Certain sections and certain growers in those sections become noted for their production, which commands the highest price. Even in these orchards some trees are better than others, in yield, size, flavor and shipping qualities, and no argument is needed to convince all that only from these best trees should buds be taken. But no standardization of this work has yet been undertaken, and it is the belief of several prominent members that the association should exercise some means of control so that the public could rest assured that purchases from its members would be from such selected stock, for there are always some dealers offering for sale stock of inferior quality, propagated from buds indiscriminatingly cut from the orchard.

AVOCADO GROWERS MEET

The recent semi annual meeting of the California Avacado Association at Hotel Belvedere, Santa Barbara, proved one of the best this association has held. Secretary Hardin writes:

"There were 130 present at the dinner on Friday evening. Wilson Popenoe's illustrated lecture was most interesting and instructive. A large number of beautifully colored slides were shown on the screen. In addition to the regular program on Saturday, Professor David Fairchild, of the United States department of agriculture, was present and gave a most interesting talk on the avocado industry. There was an excellent exhibition of fruit, some of it weighing as much as three pounds. Avocados were served at the dinner in cocktail, salad and ice cream."

One of the most interesting features of the program was the addresses on June Drop by Messrs. Elliott, Taft, Thacher, Popenoe, Barron and Stewart. Other addresses were made by Drs. Hitchcock and Manning and Messrs. Jamieson, Spinks, Shamel and Adams.

DATE GROWERS INSTALL VACUUM FUMIGATORS

Date growers of the Coachella Valley have installed machinery for fumigation of dates to control pests. Carbon bi-sulphide is the agent and the work is done under vacuum, permitting the fumes to penetrate every particle of the fruit. All eggs, larvae, pupae and adults of the stored date pests are killed by one to two hours' fumigation, utilizing a 26 inch vacuum. Two fumigators, each with a daily capacity of over two tons of dates, are already installed and operating successfully. The California Date Association and A. W. Risher are the growers who will thus protect their pack. Not only are these two machines the first ever used for fumigating dates under this method, but this is perhaps the first commercial use of carbon bisulphide under vacuum in the United States.

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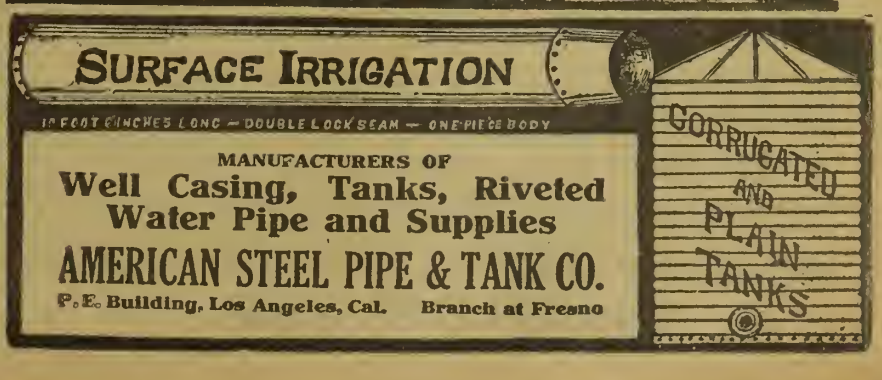
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Our Subsoiler is easily made into a Furrow Plow by changing standards.

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Subsoil your orchard first. Break your soil so the water can get down into it, then attach the plow standard to the Subsoiler frame and open up a furrow. Then put the manure into the ground.

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Write for catalogue and price, also our booklet on Deep Tillage.

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Blackeye Beans for Stock

I have about 200 sacks of Blackeye beans which cannot be sold as a human food because they are discolored by the rain. In buying rolled barley for my horses I have to pay $3 for 80 pounds and they say pretty soon barley is going up. In regard to the food value, compared with barley, I think Blackeye beans should be worth considerably more than the former, but I received as the highest offer only $2.50 per 100 pounds. As I don't like to give my beans away, I beg your advice as to how I can make a better or more profitable use of them. Could I feed some of the beans to my horses in place of rolled barley? If so, how much at a time and in what state? Would it pay to buy some little pigs and feed the beans to them? Of course, I know beans alone would not be the right ration. Or how about using them as fertilizer for my orange trees? Would that be better and more profitable? Of course in choosing the first way the pig manure must be good for trees also.—Subscriber, Fullerton.

These questions were referred to Prof. F. W. Woll of the state university, and he writes:

No direct experiments as to the relative value of Blackeye beans or other cowpeas and barley as hog feeds have been conducted so far as I am aware, but cowpeas have been found to have approximately the same feeding value as Indian corn in experiments conducted at southern stations. This would place them a little ahead of barley as a feed for fattening hogs, since barley is 90 to 95 per cent as efficient a feed for this purpose as is Indian corn. The best results are obtained by feeding Blackeye beans cooked, with an addition of a little salt, feeding them mixed with ground or soaked barley in the proportion of one part of beans to two of barley, by dry weight. If the beans make up a larger proportion of the grain feed than this, the pork will be of poor quality and a low dressing percentage will be obtained. Pigs will not eat beans or cowpeas satisfactorily if soaked or ground, so far as our experience goes, so that the expense of cooking should be considered in placing a money value on them. It would seem that at ruling quotations for barley they can hardly be worth more as a bog feed than the price given. If they could be used as a part of the grain mixture for dairy cows, in which case they might be fed ground, one would be warranted in paying a similar price for them as for barley.

Brazing With Acetylene Gas

Will you please tell me if it is possible to braze with acetylene gas from a presto tank?—Subscriber, Bakersfield.

The gas from an ordinary prestolite tank will not make heat sufficient to braze metals though it can be used in soldering light work.—J. B. N.

Pump Trouble

We had a well drilled on our chicken ranch, 82 feet deep. We have 21 feet of water, have a standard make pump, eight inch bore. Pipe is two inch, cylinder 3 inch and is 20 feet from the bottom. We have an Olds gas engine, 1½ horse power, but it doesn't seem to have the power to lift the water. It pumps so hard it can not be pumped by hand. A man can hardly lift a pail of water. Can anyone tell me the reason or what is the matter? Any information will be thankfully received.—Subscriber, Vacaville.

The description is not clear, but the result as stated would indicate a scarcity of water. The cylinder is rather large for hand work at that lift, but if the water has free access to the cylinder the engine should handle it readily provided there is plenty of water. We are inferring that the pump has an eight inch stroke and if so would change to a two and one-half inch diameter cylinder placed within five feet of the bottom of the well and without any pipe on the bottom of the cylinder. The pump should not be run more than 40 double strokes per minute. The two inch pipe should be used with the smaller cylinder. —J. B. N.

Water Measurement

Is there a meter that will measure water as it flows over a weir and where can it be got? Are irrigation measures the same in the southern and northern part of the state, and what is the right measurement for a miner's inch? How deep would water have to be in a box one foot wide, running over a weir, to make four miner's inches?—Subscriber, Escondido.

There are meters made for use in open flow water channels but more correct measurements can be made in irrigation ditches by a properly constructed weir. The agricultural experiment station at Berkeley in Bulletin 247 gives drawings and measurements for construction of such weirs and can be had on application to the station. Common usage in many parts of the state allows a miner's inch of water which is a constant flow of nine gallons per minute, but if such amount is not specified the legal flow of 11½ gallons per minute is applied. While the meaning of the inch varies in different localities, it is not a stream of water an inch wide and an inch deep regardless of pressure. This cannot be answered without knowing the form of weir used.—J. B. N.

Veterinary

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Lumps in Udder

One of my milk cows has hard lumps form in the udder; usually at the base of the teats. They are sore to the touch and at times break out. Does this condition render the milk unsafe for use and is there anything that can be done for her?—Subscriber, Campo.

The lumps may be caused by tuberculosis. Better have her tested. The milk should not be used for children. Older people are not so apt to contract the disease. Write State Veterinarian, Sacramento, to have her tested. He will tell you what to do after testing her.

ELECTRICAL GOODS FOR BRAZIL

According to consular reports Brazil is a promising field for American electrical goods of all kinds. In Argentina and Uruguay the lack of water power limits the use of electricity to some extent, but in Brazil the immense amount of water power available makes the electrical field one of unusual attraction. Before the war American materials were not an important factor, but now the power plants in all the large cities use American materials almost exclusively.

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COOPERATION AT CONVENTION

Continued from Page 681.

Oroville machines were at the service of convention attendants, and a visit was made to the larger orange orchards of the county at Thermalito; thence back through the town to Wyandotte and over the great stretch of land of approximately 20,000 acres for which recent bond election will provide water. Scattered here and there over the tract are developed properties which give promise of great future development. The great olive curing plants of the Mt. Ida Association and the Ehmann people were visited. In one of these plants an acre and a quarter of ground covered with concrete vats, termed by Mr. Pierce the "municipal baths," contained hundreds of tons of olives in the curing.

B. B. Meek, one of the largest of Oroville's olive growers, presided at the afternoon session in the Exposition Auditorium.

Manager Powell of the California Fruit Growers Exchange told of the $225,000,000 industry and some of the methods which have been necessary to build it up and make it of such enormous value to the state of California. The industry employs today 27,000 laborers, and with them are others, making 150,000 people dependent upon that industry for their living.

The past season's return to the industry has been $75,000,000. Of this $55,000,000 has gone to members of the Exchange, in which there are 200 associations and 20 sub-exchanges.

E. W. Ehmann, at the head of the great packing plant which is responsible for the introduction of manufacture of the California ripe olive in a large commercial way, referred to the fact that California must use every effort to dispose of the great crop which will come from her 50,000 acres of olives. We think of this as a great production, but when we also learn that Spain has a planting of over 4,000,000 and increases this by an amount greater than California's total acreage every year, it is seen that California is not alone in olive production.

C. C. Teague gave of his experience in handling citrus orchards and described the heavy requirements of the grower of citrus fruits. These demands must be met if success is to be wrought from that industry. Butte County citrus growers have not yet had to face these problems, as have those of the South. "Only through the cooperative movement can the great fruit industry be perpetuated. Were it not for it I would sell my orchards today."

F. J. Mason spoke of Butte County citrus conditions and output. "We believe in real cooperation in its true sense, and we believe in good teamwork between the grower, the shipper and the consumer."

In merest outline, Prof. Bioletti said:

By Frederic T. Bioletti

The large crops of fine fruit produced by some olive orchards in California demonstrate the suitability of the climate and soil of some locations for this fruit. Some failures indicate that other locations are less suited.

Olive growing tends to concentrate in the lower foothill regions of the Sierras and in similar situations in Southern California, though scattered profitable orchards are found in other localities. The least favorable localities are in the extreme north, in the coast belt subject to summer fogs and at elevations above 1500 feet.

With suitable climate, sufficient water and skillful handling, almost any good soil will yield profitable crops.

The main factors under the control of the grower are choice of variety, application of water, pruning and fertilization.

The Mission is still the safest variety for most locations; the Manzanillo, Ascolano and Sevillano coming next in about this order for special localities.

Irrigation is necessary for the best results in practically every locality. Two irrigations, one in spring and another a few weeks before the fruit commences to ripen, are almost always needed. In the hotter localities and in shallow or leachy soil, one, two, or more supplementary irrigations are necessary.

Young trees should be pruned no more than is absolutely necessary to give them the required shape. The common method of severe pruning delays the growth and bearing of the tree several years.

Old trees should be pruned every year to preserve their form, to promote an annual growth of fruiting wood, and to allow the sun to penetrate to every part of the tree. This should be done almost entirely by "thinning out" and not by "cutting back." Where trees are too close they do not bear well. Thinning out of the trees is therefore often advisable. It has in some cases been found possible to double the crop by removing half the trees.

Fertilization is useful in some cases. but is of little use unless accompanied by proper irrigation and pruning. So far nitrogenous manures have given the best results. These are farmyard manure, including sheep and chicken manure, tankage, and nitrate of soda. Green manuring by winter and summer cover crops plowed in should be practiced whenever possible.

The following general rules for the improvement of olive orchards may be given:

Promote vigorous growths by good cultivation, sufficient irrigation, and where needed by green manuring and nitrogenous fertilizers.

Prune bearing trees regularly every year to promote a moderate growth of new fruiting wood, to open up all parts of the trees to the sun and to preserve its form.

Prune young trees as little as possible while developing the desired form.

A Banquet

That evening was long to be remembered. Oroville ladies cooked Oroville products. We all ate and can certify that Oroville ladies are good cooks. Oroville musicians entertained.

W. W. Jengles presided. Director Hecke and Marshall De Motte of the state board of control made the principal addresses. Other short talks were made by Col. Harris Weinstock, Dr. E. D. Copeland, Assemblywoman Elizabeth Hughes, James Mills, Freda Ehmann, Geo. Pierce, A. R. Sprague and C. B. Messenger.

Friday Morning

With so many conventions in session at once one is unable to attend all, and Friday was my day with the Nurserymen's Association. But in addition to Prof. Whitten we believe the addresses as scheduled by Prof. Vichmeyer on irrigation investigations and by E. M. Sheehan on evaporators for fruit drying were both made. Certain I am that addresses by Prof. De Ong and Prof. Cruess were made and will afford the basis for excellent articles in later Cultivators, especially that of Prof. Cruess, which will be given with illustrations.

Effects of irrigation, pruning and spraying as factors in frost control, by Dr. J. C. Whitten—more in a later Cultivator. While Dr. Whitten was not present his paper was read by Prof. Vichmeyer.

In the afternoon Avery S. Hoyt made a strong appeal for fullest support of fruit growers in the work of standardization. California products are being given a place in the markets of the world that they never would have had were it not for the work of Mr. Hoyt and his assistants.

Charles H. Gray spoke for the California Cooperative Canneries and of the value of this great institution in stabilizing the market for canning fruit.

A Duck a Piece

The banquet on Friday evening was full of pep and punch and plenty to eat. In fact a duck for every attendant was supplied, and they were some ducks. It is safe to predict they will never molest rice fields again. C. M. Osenbaugh, president of the state normal school, was toastmaster. Addresses were made by Director Hecke, Col. John S. Chambers, Vice President Bentley of the California Packing Corporation, and Prof. W. S. Weeks. And Professor Weeks is a vaudeville artist, — especially in the handling of Scotch dialect.

Saturday

Saturday, like every day of the convention, gave to us perfect weather.

Continued on Page 709.

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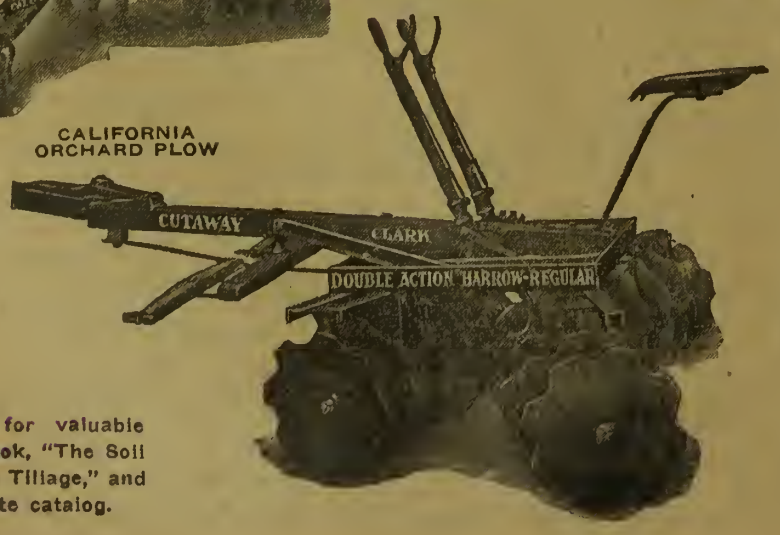

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Close Road

A owns a ranch. B and C are adjoining ranch owners who have been coming through A's ranch for a number of years. A has kept gates at the entrances. Often times these gates are left open and A's stock gets away. Can B and C claim a right of way or can A close them out? The lands of B and C both border on the county road.—Subscriber, Mountain View.

The courts have held in cases exactly similar to this that the use of a right of way is not sufficient to establish a prescriptive right over the lands of another. The use must be accompanied by a claim of right communicated to the owner of the land or it must be shown that the use was so continuous and so openly and notoriously adverse to the owner as to create a presumptive knowledge in the owner that the person using the land was doing so under a claim of right. It has been held that the posting of notices on such a private road to the effect that the same is private property, strongly tended to negative any presumption of adverse user or communicated claim of right. The maintenance of gates which are closed by the owner of the private road would also very clearly tend to negative any such claim of right. It would therefore seem unquestionable that A can close his gates and refuse to permit his neighbors to use his way.

Legal Proceedings With Stray Stock

Some time ago I took up a stray heifer in my pasture. How shall I proceed to recover cost of keep?—Subscriber, San Jacinto.

Confine in a secure place and within five days file with county recorder or pound keeper a notice containing description of animal with marks and brands, probable value and a statement of the places where taken up and confined. Fee for filing 50 cents. If the value of animal exceeds $10 the notice must also be published in a newspaper in the county at least once a week for three successive weeks, stating time when animal will be delivered to the constable, or if the finder knows the owner, then within five days after the animal is taken up he shall notify the owner or person in charge of it, this notice to contain the same information as the notice above, and for this notice a charge of 50 cents may be made.

At any time within 30 days from filing the notice, any person claiming the animal may demand possession and pay taker-up all damages, expenses and costs as follows: Fee for filing the notice, costs of publishing notice and attorney's fee for preparing the notice, when recorded only, not to exceed $2.50, 50 cents a day for the keeping and care of each horse, mule, jennie, ass, cow, bull, ox, steer or calf, not to exceed 15 cents a day for keeping of sheep, goat, hog or other animal. The taker-up is obliged to properly feed and water the animal while in his care and if he fails to do so forfeits all right of lien.

If no one claims animal within the 30 days or if the claimant fails to pay expenses and commence action within said 30 days for recovery of animal, then the taker-up shall in writing notify a constable of township in which the animal is held, which notice shall specify that he has complied with all of the foregoing provisions, that the claimant of the animal has failed to appear, or if he has appeared he has failed to pay the expenses and costs, and he has failed to commence or prosecute with diligence an action for the recovery of the possession of the animal within the time provided, and that the animal is held by the taker-up subject to sale. The constable shall immediately proceed to sell the animal at public sale in conformity with the law and shall be entitled to the same fees as in sales on execution.

Out of the money realized from the sale, the constable shall first retain his fees, then pay to the taker-up his expenses and costs, and any surplus he shall pay the county treasurer to be held for the owner of the estray. If anyone within a year thereafter proves to the satisfaction of the board of supervisors that he is entitled to this sum the board shall order it paid over, and if not so proven within one year then the money shall become a part of the common school fund of the county. All sales made by the constable shall convey good and valid title to the purchaser and the owner is thereafter barred from all right to recover the animal.

Pumping Plants and Irrigation Rights

Is there any law requiring registration or the making of a report to any official by an irrigator who has his pumping plant on his own place and simply supplies his own needs? What is the law regarding supplying one's neighbors, that is to say, is there danger of their acquiring right which might prove embarrassing to the one owning the pumping plant? What regulation governs such situation?—Subscriber, Los Angeles.

If the irrigator were pumping water from a stream he would of course be required to make an appropriation and obtain permit from the state water commission. The state water commission is contending that the term "stream" applies not only to those streams which appear upon the surface, but also under ground. That matter has not been determined, however. Clearly an irrigator who merely pumps water lying under his ground, technically known as percolating or local water, would be required to make no report. It may be somewhat different in respect to supplying neighbors. It would seem that a supply from a pumping plant would be so clearly one of license and permissive use that no possible right could be acquired by adverse user such as might be in the case of a spring or stream arising upon or flowing through one's land, and in case such water was supplied without charge it would seem that there would be no difficulty arising. However, if a charge is made, the owner of the pumping plant would probably come under the definition of a public utility. The latest amendment to the public utility act provides as follows:

"When any person performs any service or delivers any commodity to any person or persons, etc., which in turn either directly or indirectly perform such service or deliver such commodity to or for the public or some portion thereof, such person, etc., is hereby declared to be a public utility and to be subject to the jurisdiction control and regulation of the railroad commission and to the provisions of this act."

"The term public or any portion thereof, means the public generally or any limited portion of the public including a person, private corporation, etc." In the event that such person sold water to his neighbors and came within the provisions of the

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public utility act it would be necessary for him to file with the state railroad commission his schedule of rates and make the reports as required in the public utility act, and he would be subject to the rulings of the commission in respect to the reasonableness of his charges.

Avoiding Probate

How can real estate be arranged so that in case of death of husband it will not be necessary to probate the real estate which has been acquired since marriage?—Subscriber, Hemet.

If the parties are residing upon the property the best method is to record a joint homestead declaration; another method is to deed the property to some third person, and for that third person to deed it back to the husband and wife as joint tenants with the right of survivorship; a third method is for the husband to execute a deed to the wife for all of the property. The last two methods are not recommended as they have caused considerable litigation.

Administration of Estate

At the time of death a man owned three city lots, valued at $75 each, and no other property. Can his widow hold these lots and give clear title? If not, what must she do in order to sell them, and what will the expense be?—Subscriber, National City.

The code provision in respect to such estates provides that if the deceased leave a widow or minor child or children a petition may be filed in the superior court, verified by the administrator, widow or guardian of the children, showing that the net value of the estate over liens or encumbrances of record thereon at the date of the death of the deceased does not exceed $1,500, which allegation is enforced upon the return of the inventory of the estate showing the estate to be less than that sum, and an order shall issue fixing a certain day in the court whereupon any person interested may appear and show cause why the whole estate should not be assigned for the use and support of the family of the deceased. A notice of this order must be posted for ten days in three public places. If the allegations of the petition are found to be correct, then the whole of the estate shall be assigned to the widow of the deceased, or if there be no widow, then to the minor children, subject to encumbrances, after the payment of the expenses of the last illness, funeral charges and expenses of administration. The party to whom the estate is so assigned is then vested with absolute title to the estate and no further proceedings need be had. It is within the discretion of the court to appoint but one appraiser, whose fee would be not more than $5. It costs $6 for the filing of the petition, and the whole matter should not cost in excess of $50, including the services of the attorney. The widow could not give the title without taking probate upon the estate for the reason that there must be some means of judicially ascertaining of record that there are no other heirs, that there is no will, and that the creditors are entitled to no interaest in the estate. In fact there is nothing to show of record that the widow is the widow of the deceased, so that in order to complete the chain of title upon the death of the owner of the property it is necessary to take probate proceedings in the forms provided.

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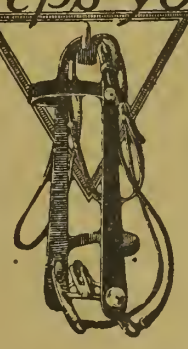

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Thursday, December 18, 1919

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MORE THAN 50 per cent of the individuals are daughters of Prince Gelsche Walker or granddaughters of the two former world's record cows Aralia De Kol and Riverside Sadie De Kol Burke.

PRACTICALLY 75 per cent of the females are three and four year olds, bred in the families that dominate the herd, and they would stay in the herd and be more fully developed were it not for the extreme necessity of making this sale.

EVERY FEMALE IN THE SALE is of milking age, and they are all bred to one of three bulls: SIR AAGGIE DE KOL MEAD, son of Miss Valley Mead De Kol Walker; KING AAGGIE MEAD, son of Aaggie Acme of Riverside; and KING MORCO ALCARTRA, son of Tilly Alcartra.

Think of This

The females in this sale are mostly A. R. O. cows with records up to over 30 lbs. butter in 7 days and from 750 pound 2 year old to 1093 pound yearly butter records, including a number of daughters of 1000 pound cows! And bred to the three bulls named above!

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Dairy Cattle at San Francisco

By R. P. Royce

NOTWITHSTANDING the fact that the show of dairy cattle was of extremely high order, in some classes touching the high point of quality, the show as a whole was not up to the full possibilities of California. This was rather an off year for many of the leading herds that made the earlier shows and it will perhaps be necessary to arrange the dates of the three larger shows so as to follow each other more closely if complete and even more representative exhibits are to be gotten out.

Perhaps the outstanding feature of the show was the quality found in all classes and the narrow margin noted between the top and bottom places. The judges for each of the four principal breeds were men of recognized ability and their placings were followed with marked interest by the large crowd about the ringside. Each year and each succeeding show but strengthens the often expressed opinion that California is producing some of the best cattle to be found in America.

The Holsteins

Nine California herds and one from Arizona staged a particularly strong and pleasing exhibit of Black and Whites. For the most part none of the different herds had met before and many of the classes furnished competition that was looked forward to with keen interest. E. W. Major, who made the ratings, took plenty of time and tied the ribbons in a most painstaking and careful manner.

A feature of the Holstein division was the fine record made by the blood of Tilly Alcartra. that was in strong evidence in the Morris exhibit.

The five aged bulls lined up with King Morco Alcartra, a son of Tilly Alcartra, in first and the judge liked him well enough to make him senior and grand champion. Vogel was second with Segis Alcartra De Kol Burke over the Toyon entry, Sir Pietertje Ormsby Mercedes. Sanders was fourth and the Napa State Hospital fifth.

The four two year olds did not make an exceptionally strong class and each fell into his place without much disagreement. Holmes' Segis Alcartra Springbrook led the three senior yearlings, Sanders was second and Toyon third. No junior yearlings appeared.

The senior bull calves furnished a strong class and it required a hairline decision to determine the rating of the two top calves. A stronger chest carried the Morris entry, King Mead of Riverside 16th, above the Dolcini calf, Sir Aaggie Korndyke Mead, with perhaps more quality and a better skin.

The junior bull calves presented one of the strong classes of the show that was topped out by the junior champion, King Morco Alcartra Mead, a son of the grand champion. Another Morris entry was second, with a university calf slipping into fourth place between two Toyon youngsters.

The outstanding class of the show and the one that was declared to be stronger than the same class at the recent National Dairy Show, was the line-up of 16 aged cows. Few shows have uncovered a stronger showing of type and production and the fact that only five names appear in the list is due to the limit of awards. Sixteen ribbons might have been given. The honor of leading such a notable class very popularly was awarded to Betsy Lamb Prilly, from the Vogel herd. In every way Betsy Lamb Prilly is one of the most acceptable types seen in a California show ring. She is a cow of ample size, disclosing dairy temperament throughout, with excellent capacity and constitutional strength to carry her through. She swings a large, capacious, well balanced udder of fine texture. Hazelwood Helio Queen, from the Napa herd, a cow of extreme size, lacking the general balance of the winner, more particularly as regards constitution, but of pleasing lines and dairy conformation, was second. Toyon Farms took the next threo places, the third and fourth rating going to cows that have recently completed records of 1,100 pounds. One of the most popular entries for high honors was the good cow, Pleasant View Johanna Aaggie, shown by Phillips. Only one three year old was in the ring.

Just before entering the show ring, Miss Aaggie Grace Alcartra, a Morris two year old, calved, and notwithstanding that she was a trifle shaky from her natural labors she was good enough to be sent forward by the judge with the remark that she was very promising. Betty Beets Banostine, a beautiful heifer owned by Phillips, was second. Toyon had the third, fourth and fifth places.

The junior and reserve grand champion, Josephine Johanna Oak De Kol, owned by Phillips, headed the senior yearlings. She is a heifer of very pleasing lines and quality. She has a beautiful head, good withers, ample depth, a strong top and splendid udder development. Toyon Colantha Fayne Valdessa in second for Toyon was a good type but lacked the finish of the one above her. Holmes showed a good heifer in milk in third. Vogel was fourth and Dolcini fifth. Only two junior yearlings were in the ring, Toyon taking first over Sanders.

The senior heifer calves made up a strong class. Napa Hospital landed first and third, Toyon second and fifth and Holmes fourth. A daughter of Tilly Alcartra won over a good class of juniors.

Exhibitors: A. W. Morris & Sons, Corporation, Woodland; Toyon Farm Association, Los Altos; H. E. Vogel, Fresno; J. P. Phillips, Fresno; V. F. Dolcini, Davis; Napa State Hospital, Napa; R. L. Holmes, Modesto; University of California, Davis; Jared W. Scudder, Holt; Frank Reed Sanders, Phoenix, Arizona.

The awards follow:

Aged bull—1, Morris on King Morco Alcartra; 2, Vogel on Segis Alcartra De Kol Burke; 3, Toyon on Sir Pietertjo Ormsby Mercedes 43rd; 4, Sanders on King Pearl Segis Pontiac; 5, Napa State Hospital on Prince Rag Apple Imperial. Two year old—1. Scudder on Model Domino Glista; 2, Sanders on Prince Hengerveld Paltz DeKol; 3, Holmes on Prince Abbekerk Aralia Walker; 4, Morris & Sons on King Aaggie Mead. Senior yearling—1, Holmes on Segis Alcartra Springbrook; 2, Sanders on Palo Verde King Pearl Pontiac; 3, Toyon on Toyon King Jondine Fayne Valdessa. Senior calf—1 and 3, Morris on King Mead of Riverside 16th and King Meade of Riverside 17th; 2, Dolcini on Sir Aaggie Korndyke Mead; 4, Holmes on Karlray Pontiac Ormsby; 5, Toyon on Sir Aaggie Mead. Junior calf—1 and 2, Morris on King Morco Alcartra Mead and King Korndyke Pontiac Acme; 3 and 5, Toyon on Toyon Butter Boy Valdessa and Toyon Circucla Valdessa; 4, U. of C. on Korndyke Senorita Boy.

Aged Cow—1, Vogel on Besty Lamb Prilly; 2, Napa Hospital on Hazelwood Helio Queen; 3, 4 and 5, Toyon on Ava Model Hengerveld 2d, Ormsby Segis Marie and Queen Van Beers 4th. Three year olds—Toyon on North Star Fayne Champion. Two year olds—1, Morris on Miss Aaggie Grace Alcartra; 2, Phillips on Betty Beets Bostine; 3, 4 and 5, Toyon on Moxie Johanna Korndyke Flebe, Korndyke Model Hartog 3d and Cascade Daisy. Senior yearling—1, Phillips on Josephine Johanna Oak DeKol; 2, Toyon on Toyon Colantha Fayne Valdessa; 3, Holmes; 4, Vogel on Annabelle Westlawn; 5, Dolcini on Netherland Snowball. Junior yearling—1, Toyon on Johanna Skylark Ormsby; 2, Sanders on Palo Verdo Hilda Segis Pontiac. Senior heifer calf—1 and 3, Napa Hospital on Napastahos Lady Lilith and Napastahos Asa Queen; 2 and 5, Toyon on Moxie Pearl Johanna and Isabella Ormsby Valdessa; 4, Holmes on Holmes Silverton Pontiac. Junior heifer calf—1 and 3, Morris on Tilly Alcartra 3d and Segis Margaret Mead; 2, and 4, Napa Hospital; 5, Toyon on Toyon Nora Hengerveld. Cow having official yearly record begun at five years or over—1, Toyon on Ava Model Hengerveld 2d; 2, Phillips on Pleasant View Johanna Aaggie. Cow having official yearly record begun under the age of five years—1, Toyon on Ormsby Segis Marie; 2, Morris on Zaza Tuebe Prophetess.

Senior champion bull—King Morco Alcartra. Junior champion bull—King Morco Alcartra Mead. Senior champion cow—Betsy Lamb Prilly. Junior champion heifer—Josephine Johanna Oak DeKol. Grand champion bull—King Morco Alcartra. Reserve—King Morco Alcartra Mead. Grand champion female—Betsy Lamb Prilly. Reserve—Josephine Johanna Oak DeKol.

Aged her—1, Vogel; 2, Toyon. Young herd—1, Toyon; 2, Sanders. Get of sire—1, Sanders; 2, Morris; 3, Toyon. Produce of dam—1, Morris; 2, Phillips; 3, Toyon. Dairy herd, to consist of five cows in milk all to be owned by exhibitor—1, Toyon.

The Jerseys

The Jersey exhibit afforded satisfaction to the breed's friends, but the Jersey breeders of California are capa-

ble of bringing out a much stronger showing in point of numbers. Several of the leading herds did not make entries.

Professor J. B. Fitch of the Kansas state agricultural college judged the Jerseys and stated that he was greatly impressed with the fact that every exhibitor was making his living from his herd, thus demonstrating the real and sound value of the breed.

J. E. Thorp, Lockeford, and Guy H. Miller, Modesto, two veterans of the show ring, were the heaviest exhibitors and winners. Thorp's aged bull, Jolly Senator Raleigh, with an undefeated record this year again won his class and went through to the championship. Miller was second with Altama Interest. Miller showed the one two year old. Making his initial showing, E. F. Smith of Hayward won the senior yearling class with Goldie's Nehalem Gold, afterwards made reserve junior champion. Thorp was second and Jersey Queen Farm third. Miller's Wanda's Altama Interest, first in the senior bull class, was junior and reserve grand champion. Thorp had the only junior bull calf.

Thorp's grand old cow, Salome of Mossdale, carries her ten years lightly and stepped out in front of a strong class of aged matrons, and kept going through to the championship. Sanders was second, Thorp third and Miller fourth and fifth. The champion is a fine combination of type and producing ability. Fronted with an expressive head, thin neck, sharp withers, a top line that is quite good for her age, she also boasts of excellent quality.

Miller won the next class over Thorp. Sanders took first, third and fourth in two year olds. The university slipped in second and Miller was fifth. The winner, Desert Honeysuckle, was reserve senior champion. Thorp and Miller divided honors on their senior yearlings. Sanders won the junior yearling tie. The senior heifers acknowledged first place to the lovely Jewel of Tintagel, shown by Fortini, that was later made junior and reserve grand champion. Sanders won the baby class.

Exhibitors: J. E. Thorp, Lockeford; Guy H. Miller, Modesto; M. Fortini, Orland; E. F. Smith, Haywards; University of California, Davis; Jersey Queen Farm, San Jose; Frank Reed Sanders, Phoenix, Arizona.

The awards follow:

Aged bulls—1, Thorp on Jolly Senator Raleigh; 2, Miller on Altama Interest. Two year olds—1, Miller on Jap's Perfection Owl. Senior yearling—1, Smith on Goldies Nehalem Gold; 2, Thorp on Golden Legacy's Champion; 3, Jersey Queen on Rioter's Prince of St. Lambert. Senior bull calf—1, Miller on Altama Interest; 2, Thorp on Biddy's King of Mossdale. Junior bull calf—1, Thorp on Jolly Ben of Mossdale.

Aged cows—1 and 3, Thorp on Salome of Mossdale and Eminent's Wardress; 2, Sanders on Honeysuckles Maid; 4 and 5, Miller on Goldie of Venadera and Wanda of Venadera. Three year olds—1, Miller on Angela of Venadera; 2, Thorp on Nomie of Mossdale. Two year olds—1, 3 and 4, Sanders on Desert Honeysuckle, Jolly Francesca and Cheewanbeeks Beatrice; 2, U. of C. on California's Owl Rose; 5, Miller on Vega of Venadera. Senior yearling—1 and 3, Thorp on Fair Salome of Mossdale and Bonnie of Mossdale; 2, Sanders on Maid's Grey Beauty. Junior yearling—1 and 5, Sanders on Jolly Valley Rose and Dorothy of the Rancho; 2, Thorp on Marcelia of Mossdale 2d; 3 and 4, Miller on Daphne of Venadera and Arla of Venadera. Senior heifer calf—1, Fortini on Jewel of Tintagel; 2, Miller on Dagmar of Venadera; 3, Thorp on Gladys of Mossdale; 4 and 5, U. of C. on Owl's Mermaiden Fera and Owl's California Nora. Junior heifer calf—1 and 5, Sanders on Oxford Nora's Pretty Daisy and Golden King Lady Violet; 3, Thorp on Queen Bess of Mossdale; 3 and 4, Miller on Fay of Venadera and Diana of Venadera. Cow having official yearly record begun at five years or over—1 and 2, Miller on Goldie of Venadera and Wanda of Venadera; 3, Thorp on one entry. Cow having official yearly record begun under the age of five years—1, Thorp on one entry; 2 and 3, Miller on Angela of Venadera and Lucille of Venadera.

Senior champion bull—Jolly Senator Raleigh. Reserve—Altama Interest. Junior champion—Wanda's Altama Interest. Reserve—Goldies Nehalem Gold. Senior champion cow—Salome of Mossdale. Reserve—Desert Honeysuckle. Junior champion—Jewel of Tintagel. Grand champion bull—Jolly Senator Raleigh. Reserve—Wanda's Altama Interest. Grand champion cow—Salome of Mossdale. Reserve—Jewel of Tintagel.

Aged herd—1, Miller. Young herd—1, Thorp; 2, Miller. Calf herd—1, Miller; 2, Thorp. Get of sire—1, Sanders; 2, Thorp; 3,U. of C.; 4, Miller. Produce of dam—1, Thorp; 2 and 3, Sanders. Dairy herd to consist of five cows in milk all to be owned by exhibitor—1, Thorp; 2, Miller.

California Central Creameries Special

For the best grade cow, sired by registered bull, any age, with a testing association year's record for milk and butter fat production, completed since November 1, 1918—J. W. Coppini.

The Guernseys

Two herds of Guernseys represented the breed at San Francisco. A. B. Humphrey of Escalon made pretty much of a clean sweep over the L. Dee Smith cattle, Humphrey taking every championship and allowing only three firsts to his competitor. J. B. Fitch made the awards, which follow:

Aged bull—1, Humphrey on Bullion of Edgemoor; 2, Smith, on Mysie's Duke of Claremont. Two year olds—1, Humphrey on Escalon Challenger; 2, Smith on Polo Boy. Senior yearling—1, Humphrey on Nobleman of Maple Hill; 2, Smith on Mysie's Laddie Claremont. Senior bull calf—1, Humphrey on Escalon Dandy; 2, Smith on Prince Mysie of Claremont. Junior bull calf—1, Humphrey on Escalon True Type; 2, Smith on Glen's Fawn of Claremont.

Aged cows—1, Smith on Mysie May of Claremont; 2, Humphrey on Fairy of Alfalfa Farms. Three year old—1, Smith on Mysie Star of Claremont. Two year olds—1, Humphrey on Escalon Fairy; 2, Smith on Mysie's Moon of Claremont. Senior yearling—1, Humphrey on Escalon Evangeline; 2, Smith on Mysie's May of Claremont 2d; 3, Humphrey on Escalon Bo-peep. Junior yearling—1, Humphrey on Calla Grove Merry Princess; 2, Smith on Mysie's Poppy of Claremont. Senior heifer calf—1, Humphrey on Escalon Lassie; 2, Smith on Mysie's Cherry of Claremont 2d; 3, Humphrey on Escalon Maggie. Junior heifer calf—1 and 2, Humphrey on Escalon Rose and Escalon Flossie; 3, Smith on Unnamed. Cow having official yearly record begun under the age of five years—1, Smith on Mysie's Star of Claremont; 2, Humphrey on Fairy of Alfalfa Farms.

Senior champion bull—Escalon Challenger. Junior champion—Escalon True Type. Senior champion cow—Escalon Fairy. Junior champion—Escalon Evangeline. Grand champion bull—Escalon Challenger. Reserve—Escalon True Type. Grand champion cow—Escalon Fairy. Reserve—Escalon Bo-peep.

Aged herds—1, Humphrey; 2, Smith. Young herd—1, Humphrey; 2, Smith. Calf herd—1, Humphrey; 2, Smith. Get of sire—1, Humphrey; 2, Smith. Produce of dam—1, Humphrey; 2, Smith.

The Ayrshires

With but two herds competing the showing made by the Ayrshire was a distinct credit to the breed and averaged as high in quality as any of the dairy classes.

H. H. Kildee of Iowa was the judge and said he had been at few shows where the general level of quality was superior to the cattle shown by J. Henry Meyer of San Francisco and E. B. McFarland of San Mateo. Meyer took all championships except the junior and reserve grand championship.

Elkhorn Public Opinion was again given premier honors and Highland Ithan, a grand and bonnie coo', held her usual place.

The awards follow:

Two year olds—1, Meyer on Holehouse Secretary Imp.; 2, McFarland on Steybrae Improver. Senior calf—1, Meyer on Elkhorn Public Opinion; 2, McFarland on Steybrae Master Douglas. Junior calf—1,Meyer on Elkhorn Royal Review; 2, 3 and 4, McFarland on Ayrmont 359, Ayrmont 361 and Steybrae Bobbie Burns.

Aged cow—1, 4 and 5, Myer on Highland Ithan, Curfew Bell 3d and Hardcroft Favorite Imp; 2 and 3, McFarland on Willowmoor Happy Girl and Willowmoor Vesta 4th. Three year olds—1 and 2, McFarland on Lady Stair of Steybrae and Auchinbay Jean 8th; 3, Meyer on Torr of Elkhorn. Two year olds—1, 3, 4 and 5. McFarland on Steybrae Ellen, Steybrae Hangle, Steybrae Grace Darling and Steybrae Jeannie Deans; 2, Meyer on Robin's Lucy of Elkhorn. Senior yearling—1 and 3, Meyer on Baron's Snow Maid of Elkhorn and Baron's Bright Eyes of Elkhorn; 2, McFarland on Steybrae Kirsty. Junior yearling—1, McFarland on Burnside Miss Courtney; 3, Meyer on Elkhorn Kirsty. Senior heifer calf—1,

Continued on Page 696.

You'll Like These Holsteins

The registered Holsteins to be sold at Tulare are noteworthy in more respects than one:

FIRST. They represent some of the most popular families of heavy producers, and the cows in the sale include a number with official records up to over 26 lbs. butter in seven days.

SECOND. There are many fresh cows and others in calf to some of the best bred yearly record bulls in California in the offering. These are a first class investment anywhere, any time.

THIRD. The sale includes daughters or granddaughters of such famous bulls as Pontiac Korndyke, Sir Korndyke Hengerveld De Kol, Sir Aaggie De Kol Acme, King Segis Alcartra Prilly, Johanna McKinley Segis and others of high merit, and many of them are bred to KING KORNDYKE PONTIAC 20th, Higdon's $6500 son of Miss Valley Mead De Kol Walker, SIR AAGGIE DE KOL ACME 2nd, Whaley's son of Aralia De Kol 3d, his five nearest dams averaging over 1150 lbs. butter in one year; Phillips' SIR PIETERTJE KORNDYKE ORMSBY, son of Sir Pietertje Ormsby Mercedes, the greatest sire of yearly record producers and show ring winners of the breed; Post-Card Ranch's KING PONTIAC PIETERTJE ORMSBY, a 31 pound son Spring Farm King; Sturgeon's SEGIS PONTIAC ABBEKERK, half brother to the $11,000 bull and out of the only 35 pound cow in California that made over 34 lbs. at previous freshening; and to other bulls of equally substantial breeding.

FOURTH. Every animal in the sale is positively guaranteed to be a breeder. EVERY ANIMAL OVER SIX MONTHS OF AGE IS TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

The Sale Will Be Held at

Sales Pavilion, Tulare, Cal.

Tuesday, November 25, 1919

Beginning at 10 A.M.

CONTRIBUTORS TO SALE:

W. J. HIGDON, Tulare.
ALEX WHALEY, Tulare.
R. C. STURGEON, Tulare.
J. P. PHILLIPS, Fresno.
L. Y. MONTGOMERY, Fresno.
POST-CARD RANCH, Corcoran.
H. J. STEVENS, Visalia.

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Pres. **C. L. Hughes, Sales Manager**

211-212 Ochsner Bldg., Sacramento, Cal.

Auctioneers: Col. Ben. A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare

SALE EXTRAORDINARY

Circumstances over which I have no control force me to sell now instead of next spring as I intended

50 Head of Registered Poland China Hogs

Consisting of a few bred sows and boars, all the rest are open gilts just ready to breed for March litters. This is by far the choicest bunch of pigs I have ever owned. The cream of the East and West in breeding. I surely hate to part with them but my loss is your gain. Sale on

Saturday, November 29, 1919
at King's County Fair Grounds, Hanford, Cal.

Free Lunch at 11:30. Sale begins at 12:30. Everybody Come.

Col. G. W. Bell, Auctioneer W. BERNSTEIN, Owner
Write for Catolog to
W. T. Dice, Sec., P.O. Box 374, Hanford, Cal.

TAKE NOTICE!

THE HIGHEST PRICE paid for a car load of fat hogs at the California International Livestock Show came from the

BASSETT

Herd of Advance Type Poland Chinas

Many firsts, seconds, senior champion sow and GRAND CHAMPION SOW were won in the open classes, proving without a single doubt we are breeding the kind the packer wants and the farmer should raise. Animals of all ages, high class young boars, bred sows and gilts for sale at reasonable prices.

M. Bassett & Son **Hanford, Cal.**

Lendorris Ranch

Good boars will not make a good herd without good sows. A visit to our ranch will prove to you that the matrons mantained have no superiors on the coast. Young, big type, Poland Chinas from good mothers by such boars as Lendorris Liberty Bond, Young Jumbo and Liberator. For sale at reasonable prices.

W. L. Haag & Son **Hanford, Cal.**

Blood Will Tell

In the show ring, in the feed lot or on the butcher's block. The Poland Chinas bred by me fulfill all these requirements. They make money for me and they will for you. My prices for good breeding animals are always reasonable.

Eugene Miner **Lodi, Cal.**

Golden West King

was such a superior type of a big Poland China boar that as a junior boar pig he was made GRAND CHAMPION BOAR at the California International Livestock Show. His litter mate, second to him in class was regarded by the judge as practically his equal. My winnings at the State Fair, Stockton, and at San Francisco, prove my claims for superior Poland Chinas. Eastern judges and breeders pronounce them the equal of any seen at the big eastern shows. I have these kind for sale at reasonable prices.

J. F. LEHMAN **LODI, CAL.**

Come to Paradise

and see my big type Poland Chinas; grandsons and daughters of Caldwell's Big Bob. One of his best sons heads my herd. Also the home of Whiz-Bang. Get my prices and breeding and satisfy yourself that I offer the kind you want.

J. H. Cook **Paradise, Cal.**

Come and See Them

Our Big Type Poland-Chinas are the real kind of hogs. If you can't come write for what you want. We have them if you want the prolific, quick growing, big type kind.

Poland China Ranch H. B. Peake Mgr. **San Bernardino, Calif.**

YOUNG HERD BOARS SIRED BY THE YANKEE JR.

a Poland China boar with no superiors and few equals. Get an outstanding herd boar bred right and of the right type. The demand for the blood of The Yankee, Jr. is strong—some will be disappointed by not placing their order early as a number are alrcady sold. Write for prices and full particulars.

John M. Bernstein **Hanford, Cal.**

The Swine Show at San Francisco

By B. S. Bennett

FROM the opening to the closing day the swine department was one of the main attraction of the show. A numher of the good herds seen at Los Angeles were there and these were augmented by hreeders from the central part of the state and territory adjacent to the show. It was particularly pleasing to note that while some of the older hreeders were exhibitors most of the entries came from the herds of the younger hreeders. The outstanding feature of the show and the one that attracted the greatest attention was the fat barrow contest, and at no time during the judging of these classes was there lack of interest or ringside attention. Let us hope that every fair in the state will in the future arrange for like classifications. The judging commenced early Monday morning and was not finished until late Wednesday afternoon and interest in the various classes was sustained throughout. The judges were H. H. Kildee of the Iowa state agricultural college, Ames, and W. H. Pew, breeder of Poland China swine and Shorthorn cattle, Ravenna, Ohio. Both men have national reputations as judges, and did their work in a rapid, pleasing manner and not a single "kick" was registered relative to the placings. All the exhibitors were from California with the exception of Roy E. Fisher, Lincoln, Nebraska, who showed Duroc-Jerseys and Hampshires.

Berkshires

The Berkshires were the first classes judged and were represented by the herds of six breeders, with J. Francis O'Connor, Santa Rosa, and A. B. Humphrey, Escalon, aving the largest number of entries. Anchorage Farm, Orland, making its first show, captured the highest honors in the hoar classes, winning grand championship on Natomas Baron Duke, that won similar honors at the last state fair. In the sow classes, J. Francis O'Connor duplicated his Los Angeles winning of grand champion on his senior sow pig, Castleview Premier Belle. The classes for senior and junior hoar pigs and senior and junior sows were the outstanding features and afforded the hottest contests of the show.

The exhibitors were: J. Francis O'Connor, Santa Rosa; A. B. Humphrey, Escalon; Anchorage Farm, Orland; A. L. Stephenson, Los Molinos; J. H. Rosseter, Burke; F. B. Anderson, Sacramento; Mrs. John J. Weber, Yuba City. H. H. Kildee was the judge. Following are the awards:

Aged boar — 1 and 2, Humphrey on Grape Wild Emblem and Grape Wild Farm Leader; 3, Stephenson on Wilsonia Chief Leader. Senior yearling—1 and 2, O'Connor on Rose Crest Rival 3d and Castleview Rival Champion. Junior yearling—1, Anchorage Farm on Natomas Baron Duke. Senior pig—1, Humphrey on Escalon Type; 2, 3 and 4, O'Connor on Escalon Artful 5th, Rival's Leader 2d and Rosecrest Rival 7th. Junior pig—1 and 2, Humphrey on Escalon May Bob and Escalon Royal Leader; 3 and 5, O'Connor on Castleview Rival Duke 2d and Castleview Rival Duke; 4, Anderson on Natomas Leader.

Aged sow—1 and 2, Humphrey on Leader's Jeanette and Leader's Artful Belle; 3 and 4, Rosseter on Princess Lee 46th and Princess Lee 47th; 5, Stephenson on Wilsonia Laurel. Senior yearling—1 and 2, Humphrey on Royal Polly 2d and Escalon Emblem Queen 2d; 3 and 4, Rosseter on Wiklup Princess 2d and Wiklup Princess. Junior yearling—1 and 2, Humphrey on Escalon Artful Belle 6th and Escalon Emblem Belle; 3, Anchorage Farm on Anchorage Star 36th; 4, Anderson on Natomas Symboleer Beauty; 5, Anchorage Farm on Anchorage Ruby Lee 2nd. Senior pig—1, O'Connor on Castleview Premier Belle; 2, Humphrey on Leader's Artful Belle 8th; 3, Anchorage Farm on Superior May 31st; 4 and 5, Humphrey on Grape Wild Rose 6th and Grape Wild Rose 7th. Junior pig—1 and 4, Humphrey on Grape Wild Rose 8th and Escalon May 11th; 2 and 3, O'Connor on Castleview Rival Duchess and Doubles Duchess; 5, Anderson on Natomas Leader Beauty.

Senior champion boar, Natomas Baron Duke. Junior champion boar, Escalon Type. Senior champion sow, Emblem's Escalon Belle. Junior champion sow, Castleview Premier Belle. Grand champion boar, Natomas Baron Duke. Reserve, Escalon Type. Grand champion sow, Castleview Premier Belle. Reserve, Emblem's Escalon Belle.

Aged herd—1, Humphrey. Young herd—1, Humphrey; 2, O'Connor; 3, Anderson; 4, Stephenson. Herd bred by exhibitor—1 and 2, Humphrey; 3, O'Connor; 4, Anderson; 5, Stephenson. Get of sire—1, Humphrey; 2, O'Connor; 3, Anderson; 4, Stephenson. Produce of dam—1, O'Connor; 2, Anderson; 3, Stephenson.

Western Berkshire Congress Specials

Boar bred by exhibitor—1, Humphrey; 2, O'Connor; 3, Anderson; 4, Stephenson; 5, Webber. Sow bred by exhibitor — 1 Humphrey; 2, O'Connor; 3, Stephenson; 4, Anderson; 5, Webber. Junior barrow—1, Humphrey; 2, O'Connor; 3, Hollis; 4, Graham.

Duroc-Jerseys

Eight California herds and one from Nebraska met in this division and put up a show that reflected great credit on this hreed of swine. F. M. Johnson won top honors for hoars on his King Orion Jr., which was made grand champion of the show. This boar, one of the hest individuals shown this season, has extreme length and depth, large hone, is very masculine in appearance and will, no douht, be heard from as one of the state's leading sires of Duroc-Jerseys. Conejo Ranch had no trouble in winning grand championship for sow with Grand Lady 66th as she was the class of the show. H. H. Kildee was the judge.

The exhibitors were, F. M. Johnson, Napa; Conejo Ranch, Newbury Park; H. M. Berglund, Dixon; Jersey Queen Farm, San Jose; J. E. Thorp, Lockeford; S. E. Whiting, Sacramento; Western Laboratory Serum Farm; J. H. Rosseter, Burke; Roy E. Fisher, Lincoln, Nebraska.

Aged boar—1, Johnson on King Orion Jr.; 2, Berglund on California Orion King; 3, Fisher on National Critic. Senior yearling—1, Conejo Ranch on Model Lad. Junior yearling—1, Conejo Ranch on Giant Wonder; 2, Fisher on Nebraska Orion; 3, Jersey Queen Farm on Lucy Orion's Model; 4, Whiting on Defender of Hazel Louise Ranch; 5, Rosseter on Beautiful Defender. Senior pig — 1, Conejo Ranch on Big Model; 2, Fisher; 3, Whiting on Top Sensation 2nd; 4, Fisher on Sensation Wonder. Junior pig—1, Western Lab.; 2 and 3, Conejo Ranch on Giant Type and Wonder's Choice 1st; 4 and 5, Thorp on You'll Do Prince and You'll Do Regulator.

Aged sow—1, Conejo on Grand Lady 66th; 2 and 4, Thorp on Happy Lass of Mossdale and Delight of Mossdale; 3, Jersey Queen Farm on Model D.; 5, Berglund on King Orion Lady. Senior yearling—1, Conego on Great Wonder Lady 17th; 2, Fisher on Rainbow Lady. Junior yearling—1 and 2, Conejo on Wonder's Bell and Lady Model 3rd; 3 and 5, Fisher; 4, Thorp on Miss You'll Do. Senior pig—1, 2 and 3, Conejo Ranch on Lady Model 1st, Lady Model and Lady Model 2d; 4, Thorp on Reggie's Twilight of Mossdale; 5, Whiting on Fancy Maid of Mossdale. Junior pig—1, Thorp on Reggie's You'll Do; 2, 3 and 4, Conejo on Giant Bell, Giant Bell 1st and Giant Bell 2d; 5, Whiting on Princess Delight.

Senior champion boar, King Orion Jr. Junior champion boar, Big Model. Senior champion sow, Lady Model 1st. Grand champion boar, King Orion. Jr. Reserve, Big Model. Grand champion sow. Grand Lady 66th. Reserve, Wonder's Bell.

Aged Herd, 1, Conejo; 2, Fisher; 3, Thorp. Young Herd, 1 and 3, Conejo; 2, Thorp. Herd bred by exhibitor, 1, Thorp; 2, Berglund. Get of sire, 1 and 2, Conejo; 3, Fisher. Produce of dam, 1 and 3, Conejo; 2, Fisher.

Poland Chinas

This great breed of swine which has made such a rapid advance the past few years in California was not represented by as many herds nor to the degree to which it is rightfully entitled. Only three breeders entered their herds but these three put up a strong show with honors pretty evenly divided. Golden West King, a junior boar pig from the herd of J. F. Lehman, was made grand champion. It is rather unusual for a hoar of this age to win such honors. but he is a real outstanding individual and King's Timm, from the Bassett herd, his strongest opponent, was not in the condition he was at the state fair, having now been shown at four different fairs and gone through a severe sick spell in the meantime. Hopeful from the Bassett herd was not only the grand champion but was the highest class sow of the show. McCarty & Starkweather were 1, 2, 3, 4 in the senior sow pig class and if these young sows are carried on and properly developed they will, in the opinion of the judge, make a great showing in the senior yearling classes next year. W. H. Pew was the judge.

The exhibitors were M. and A. L. Bassett, Hanford, McCarty and Starkweather, Modesto; J. F. Lehman, Lodi. Following are the awards:

Senior yearling boar—1, Bassett on Kings Timm. Junior yearling—1, Bassett on Model Fellow, Jr.; 2, McCarty and Starkweather on King Jones Over. Senior boar pig—1, Bassett on Golden Model. Junior boar pig—1, 2, 3, 5, Lehman on Golden West King, Queens King, Lehman's King, Long King; 4, Bassett on Big Smooth Gerstdale.

Aged sow—1, Bassett on Hopeful; 2, McCarty and Starkweather on Mc's Miss Wonder. Senior yearling sow — 1, 2, 3, Bassett on Jumbo Dorris; Big Smooth Model, Big Model Maid. Junior yearling

sow—1, Lehman on Bobetta. Senior sow pig—1, 2, 3, 4, McCarty and Starkweather on Nuggett Nell, Long Prospect, Stylish Wonder, California Poppy; 5, Bassett on Big Princess Model. Junior sow pig—1, Bassett on Gerstdale Best; 2, 3, 4, Lehman on Lady King, King's Queen, Miss Goldie; 5, McCarty and Starkweather on Master Lady.

Senior champion boar, King's Timm. Junior champion boar, Golden West King. Senior champion sow, Hopeful. Junior champion sow, Gerstdale Best. Grand champion boar, Golden West King. Reserve, King's Timm. Grand champion sow, Hopeful. Reserve, Gerstdale Best.

Aged herd—1, Bassett. Young herd—1, Lehman; 2, McCarty and Starkweather; 3, Bassett. Herd bred by exhibitor—1, Lehman; 2, McCarty and Starkweather; 3, Bassett. Get of sire—1, Lehman; 2, McCarty and Starkweather; 3, Bassett. Produce of dam—1, Lehman; 2, McCarty and Starkweather; 3, Bassett.

Hampshires

Two California herds and one from Nebraska made up the show for this breed of swine. While this breed has firmly entrenched itself in Southern California it has not, as yet, made much headway in the central and northern part of the state. The showing made at this fair will no doubt create a demand for this breed in this section and will therefore be of much benefit to both the breeders and the breed.

Roy E. Fisher won grand championship for boar on Black Beauty, Conejo Ranch getting the reserve on Rex 2d. Fisher also won the sow grand championship on Duke's Flosine 2d. W. H. Pew was the judge.

The exhibitors were: Conejo Ranch, Newbury Park; C. J. Gilbert, Lancaster; Roy E. Fisher, Lincoln, Nebraska. Following are the awards:

Aged boar—1, Conejo on Challenger; 2, Gilbert on Harvester Again. Senior yearling boar—1, Conejo on Liberty. Junior yearling boar—1, Fisher on Black Beauty; 2, 3, Conejo on Conejo Prince, Conejo Duke Allen; 4, 5, Gilbert on True Allen, Quality Allen. Senior boar pig—1, Fisher on Young Tip; 2, Gilbert on Harvester's Echo. Junior boar pig—1, 2, Conejo on Rex II, Rex I; 3, Gilbert on Chief Harvester.

Aged sow—1, Fisher on Duke's Florine II; 2, Gilbert on Wavelet; 3, Fisher on Elice N.; 4, Gilbert on Mary Pickford; 5, Conejo on Gypsie Maid. Senior yearling sow—1, Fisher on Flora S.; 2, Conejo on Choice Maid. Junior yearling sow—1, 2, 3, 4, Conejo on Florine 2nd, 4th, 5th, 3rd; 5, Gilbert on Mary Allen. Senior sow pig—1, Fisher; 2, 3, Conejo on Rose Tipton, Miss Tipton; 4, Fisher; 5, Conejo on Perfect Maid. Junior sow pig — 1, Fisher; 2, Gilbert on Mary Again; 3, 4, 5, Conejo.

Senior champion boar, Black Beauty. Junior champion boar, Rex II. Senior champion sow, Duke's Florine II. Junior champion sow, Fisher. Grand champion boar, Black Beauty. Reserve, Liberty. Grand champoin sow, Duke's Florine II. Reserve, Flora S.

Aged herd—1, Fisher; 2, 3, Conejo. Young herd—1, 3, Conejo; 2, Fisher. Herd bred by exhibitor—1, Conejo; 2, Gilbert. Get of sire—1, Conejo; 2, Fisher; 3, Gilbert. Produce of dam—1, 2, Conejo; 3, Gilbert.

Chester Whites

C. B. Cunningham, Mills, was awarded all firsts and championships on the most excellent herd he showed.

Yorkshires

Lloyd and Tointon, Santa Rosa, awarded all firsts and championships.

Tamworths

Dr. Jas. J. Summerfield, Santa Rosa, awarded all firsts and championships.

THE BARROW AND FAT HOG SHOW

Nothing at the livestock show attracted wider interest or had greater educational value than did the contests in this division. Practically all breeds had entries, but for championship honors the fight was between the Poland Chinas entered by M. and A. L. Bassett, Hanford, and the Berkshires entered by A. B. Humphrey, Escalon. Bassett had the champion single barrow in the class for barrows farrowed before February 1, 1919, while Humphrey had the champion single barrow farrowed after March 1, 1919. The Bassett entry was made the grand champion barrow of the show and this animal was pronounced by the judges as the best barrow seen for several years at any of the big shows. It was reported that he would be shown at the International Livestock Show, Chicago, in December. In the contest for pen of three barrows the Humphrey entry won grand champion pen on three barrows farrowed after March 1, 1919, over the Bassett entry. While the champion barrow was one of the pen of three shown his individual excellence was not strong enough to carry his two mates to the top against the three highly finished Berkshires shown by Humphrey.

In the carload lots there were three entries in the class for heavy packers weighing over 250 pounds. Napa State Hospital was first on a load of Berkshires, M. and A. L. Bassett second on Poland Chinas and Western Meat Company third on Duroc-Jerseys.

In the light packers class, 175 pounds and under 250 pounds, the Western Meat Company was first on a load of Poland Chinas, M. and A. L. Bassett second on Poland Chinas and Napa State Hospital third on Berkshires.

The Berkshires shown in the heavy packer class were made the grand champion carload on the entry of the Napa State Hospital.

The awards in all classes were as follows:

Berkshires

Senior barrow—1, University of California. Junior barrow—1, 3, Humphrey; 2, O'Connor. Pen of three junior barrows—1, Humphrey; 2, Hillis; 3, Graham. Champion barrow and champion pen of barrows—Humphrey.

Chester Whites

Senior barrow—1, 2, and 3, C. B. Cunningham, Mills. Junior barrow—1, 2 and 3, Cunningham. Pen of three senior barrows—1, Cunningham. Pen of three junior barrows——1, Cunningham. Barrow and pen of barrows, Cunningham.

Duroc-Jerseys

Senior barrow—1, 2 and 3, University of California. Junior barrow—1, 2 and 3, V. F. Dolcini, Davis. Pen of three senior barrows—University of California. Pen of three junior barrows—V. F. Dolcini.

Hampshires

Junior barrow—1, Conejo Ranch, Newbury Park; 2, Roy Fisher, Lincoln, Nebraska; 3, C. J. Gilbert, Lancaster. Pen of three junior barrows—Gilbert. Champion barrow—Conejo Ranch. Champion pen of barrows—C. J. Gilbert.

Poland Chinas

Senior barrow—1 and 2, M. and A. L. Bassett, Hanford; 3, University of California. Junior barrow—1, 2 and 3, M. and A. L. Bassett. Pen of three senior barrows—1, M and A. L. Bassett; 2, Miller & Lux, San Francisco. Pen of three junior barrows—M. and A. L. Bassett. Champion barrow and champion pen of barrows—M. and A. L. Bassett.

Yorkshires

Senior barrow—1, Lloyd and Tointon, Santa Rosa. Junior barrow—1, 2 and 3, Lloyd and Tointon. Pen of three junior barrows—Lloyd and Tointon. Champion barrow and champion pen of barrows—Lloyd and Tointon.

Grades and Cross-breds

Junior barrow—1, 2 and 3—J. C. Finlay, Sacramento. Pen of three barrows—1, J. C. Finlay.

C. Finlay. Champion senior barrow—M. and A. L. Bassett, Poland China. Champion junior barrow—Humphrey, Berkshire. Grand champion barrow—M. and A. L. Bassett, Poland China. Champion pen—Humphrey on Berkshires. Reserve—M. and A. L. Bassett, Poland Chinas.

FEEDING DISEASED CARCASSES MAY SPREAD TUBERCULOSIS

Warning against the feeding of diseased cattle carcasses to hogs is sounded by the United States department of agriculture. A conference of state and federal officials, held early in October to deal with matters of tuberculosis eradication, brought to light numerous instances where hogs contracted tuberculosis after feeding on carcasses of tuberculous cattle. In one case nearly an entire drove of hogs showed lesions of tuberculosis which at first the owner could not account for. Later he admitted to the veterinarian investigating the case that several months before he had fed to the hogs the carcass of a cow that "never did very well."

The bureau of animal industry urges livestock owners to have a careful autopsy made on animals dying on the farm or killed because of sickness, in order that the definite cause of trouble may be learned. Carcasses that show lesions of infectious diseases should not be fed. Instead, such carcasses should be cared for so that no part can be eaten by hogs. Thorough destruction of the carcass by burning, or by deep burial under a liberal application of quicklime, is the proper procedure in such cases. Attention is called also to the danger of feeding offal from slaughtered animals to swine, as such a practice is another source of infection.

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will give you valuable pointers on how to treat and prevent cow diseases. Ask for your copy.

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Riverside, Cal. Sacramento, Cal.

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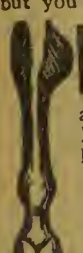

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DAIRY CATTLE AT SAN FRANCISCO

Continued from Page 693.

Meyer on Elkhorn Heatherflower; 2 and 3, McFariand on Ayrmont 354 and Ayrmont 363; 5, U. of C. on California Barcheskie. Junior heifer calf—1 and 3, McFariand on Steybrae Jessica and Steybrae Elta; 2, Meyer on Elkhorn Thistledown; 4, U. of C. on California Barcheski 2d.

Senior champion bull—Holehouse Secretary Imp. Junior champion—Elkhorn Public Opinion. Senior champion cow—Highland Ithan. Junior champion—Burnside Miss Courtney. Grand champion bull—Elkhorn Public Opinion. Reserve—Holehouse Secretary Imp. Grand champion cow—Highland Ithan. Reserve—Burnside Miss Courtney.

Aged herd—1, Meyer; 2, McFarland Young herd—1, McFariand. Calf herd—1 and 2, McFariand. Get of sire—1, 2 and 3, McFariand. Produce of dam—1, McFarland; 2, Meyers; 3, U. of C. Dairy herd—1, McFariand; 2, Meyer.

The Milking Shorthorns

The milking Shorthorns turned out one of the good shows of the week with closer competition than the list of awards indicates. The Misses Alexander & Kellogg of Sulsun made a clean sweep of the championship honors and in so doing had to pass some of the good individuals at the head of classes wherein they were not even contenders.

Thomas Harrison of Santa Rosa was put at the top of the aged bull class with his Foothills Pioneer by W. H. Pew of Ravenna, Ohio, but Alexander & Kellogg nosed him out for grand champion. Creditable showings were also made by Leon F. Douglas of San Rafael.

The awards in this class follow:

Milking Shorthorns

Aged bull—1, Harrison on Foothills Pioneer; 2, Douglas on Potrero Darlington. Two year olds—1, Alexander & Kellogg on Westward Ho. Senior calf—Harrison on Count Thickset. Junior calf—1 and 2, Alexander & Kellog on Innisfail Favorite and Innisfail Heggle.

Aged cow—1 and 2, Alexander & Kellog on Believue Daisy and Lady Beatrice. Two year olds—1, Harrison on Welfare's Bell; 2, Alexander & Kellogg on Bessie Rose 2d. Senior yearling—1 and 2, Alexander & Kellogg on Valley Bell 6th and Beggar Maid's Beauty 2. Junior yearling—1 and 2, Alexander & Kellogg on Valley Belle 6th and Beggar Maid's Beauty 2d. Junior yearling—1 and 2, Alexander & Kellogg on Innisfail Daisy Maid and Roan Lilly 5th. Senior heifer calf—1, Harrison on Glen Dorothy; 2, Alexander & Kellogg on Annabel. Junior heifer calf—1, Alexander & Kellogg on Francisca; 2, Harrison on Frantic Girl.

Senior champion bull—Westward Ho. Junior champion—Innisfail Favorite. Senior champion cow—Believue Daisy. Junior champion—Valley Bell 6th. Grand champion bull—Westward Ho. Reserve—Innisfail Favorite. Grand champion cow—Bellevue Daisy. Reserve—Valley Bell 6th.

Aged herd—Alexander & Kellogg. Young herd—Alexander & Kellogg.

The Dutch Belted

Frank Reed Sanders of Phoenix, Arizona, exhibited a few representative individuals of the breed.

The Draft Horses at California International

What was probably the strongest showing of draft horses made in California since the P. P. I. E. came before Dean C. F. Curtiss of Ames, Iowa, for judgment. Each of the leading breeds was represented and no one herd had a monopoly on quality.

N. W. Thompson of Patterson won every first place in the Percheron classes in which he entered, and his big, clean legged flash moving three year old Sensation, was made champion. Barring tendency toward rather refined underpinning and a hoof head that might be larger, his quality, top, style and character made him a popular winner. The University won the stallion colt class with a very promising youngster, L'Aiglon, that is put up on proper lines and is particularly good in his legs, joints and feet.

The aged mares made a strong class, with four good greys from the University stud rather outstanding. The judge preferred the good topped, light boned Fernand's Lucille to the better moving Poule of Paicines and the better balanced Fernand's Lottie. Palo Alto Percheron Farm was at the top with a cracking good black three year old that could have been tied champion. L. A. Hall won the two year old class and Ruth Maxwell the yearling class. The University showed three filly foals into the top three places.

Easton and Ward made a notable showing of Shires and won every class except that for filly foals, which was won by Merritt-Bowers. Anwick Arthur was champion stud, and the sensational mare, Blackhawk Chessie, was champion mare. This same firm was out with a number of high class hitches, the judge declaring that their pair of mares could go anywhere. Few establishments in the country are capable of making as high class showing of the British horse of draft.

Merritt & Bowers and N. W. Thompson were the principal exhibitors of Belgian stallions. The roan Brussels shown by Merritt & Bowers was champion and La Conrier from the Thompson stable won reserve. The Ratto Stock Farm captured most of the mare awards, and their aged mare, Paula de Lens, was champion.

While fewer in numbers, than the other herds, the Clydesdale show was of higho rder. The Dibblee Estate and both championships. Bonnie Edward, their champion stallion, is one of the best representatives seen in this state in years. He is right above and right below and moves according to the most approved Clydesdale standards. O. H. Brandt had the reserve champion mare in Dibblee's Bonnie Bloom.

Shires

Aged stallion—1, 2 and 3, Easton & Ward on Anwick Arthur, Salvador Conqueror and Dovecote King. Three year olds—1 and 2, Easton & Ward on Blackhawk Senator and Blackhawk Forest King. Yearling—1, Easton & Ward on Blackhawk Clansman. Stallion foal—1 and 2, Easton & Ward on Blackhawk King and Blackhawk Model.

Aged mare—1 and 2, Easton & Ward on Blackhawk Chessie and Hawton Bounce; 3, Merritt & Bowers on Wrydelands Model. Two year olds—1 and 2, Easton & Ward on Blackhawk Forest Queen and Blackhawk Belladonna. Yearlings—1 and 2, Easton & Ward on Blackhawk Alberta and Blackhawk Choice. Filly foal—1, Merritt & Bowers on Eloise.

Champion stallion — Anwick Arthur. Reserve—Blackhawk Senator. Champion mare—Blackhawk Chessie. Reserve—Blackhawk Forest Queen. Get of sire—1, Easton & Ward. Produce of dam—1, Easton & Ward.

Belgians

Aged stallion—1, 2 and 3, Merritt & Bowers on Brusseis, Adonis and Cadet of Paicines. Three year olds—1 and 2, Thompson on La Courier and Cob; 3, Ratto on Clarion de Lenz. Two year olds—1, Merritt & Bowers on Dewey. Yearlings—1, Merritt & Bowers on Liberty.

Aged mare—1 and 2, Ratto on Paula De Lens and Bell de Mars; 3, Merritt & Bowers on Mina.

Champion stallion—Brussels. Reserve—La Courier. Champion mare—Paula de Lens. Reserve—Bell de Mars. Produce of dam—Merritt & Bowers.

Clydesdales

Aged stallion—1, Dibblee on Bonnie Edward. Three year olds—1, Dibblee on Prince Edward. Two year olds—1, Dibblee on Royal Wilsone. Stallion foal—1, Brandt on Fairlands Pride.

Aged mare—1, 2 and 3, Brandt on Victoria, Cricket and Jean Morrisson. Three year olds—1, Dibblee on Bonnie's Darling. Two year olds—1, Dibblee on Bonnie's Bloom; 2, Brandt on Jessica Derby. Yearlings—1, Dibblee on Bonnie Rosebud; 2, Brandt on Annette Morrison. Filly foal—1, Dibblee on Bonnie Rosebud 2d.

Champion stallion—Bonnie Edward. Reserve—Royal Wilsone. Champion mare—Bonnie Bloom. Reserve—Victoria. Get of sire—Dibblee.

Percherons

Aged stallions—1, Thompson on Kerry; 2 and 3, Merritt & Bowers on Inquiet and Palo Alto Prince. Three year olds—1, Thompson on Sensation; 2, Merritt & Bowers on Woodland. Two year olds—1, Thompson on Pedro; 2, Merritt & Bowers on Colore; 3, Maxwell on Rigel. Yearlings—1, Thompson on San Gabriel; 2 and 3, Hall on Sammie and May Boy. Stallion foal—1, U. of C. on L'Aiglon; 2 and 3, Maxwell on Aldebaran and Antar Brilliant.

Aged mares—1, 2 and 3, U. of C. on Fernand's Lucile, Fernand's Lottie and Poule of Paicines. Three year olds—1, Palo Alto on Palo Alto Bedlia. Two year olds—1, Hall on Palo Alto Ciara. Yearlings—1, Maxwell on Adalet. Filly foal—1, 2 and 3, U. of C. on Silver Leaf, Victorie and Fern Leaf.

Grand champion stallion—Sensation. Reserve—Kerry. Grand champion mare—Fernand's Lucile. Reserve—Palo Alto Bedlia. Get of sire—1 and 2, U. of C.; 3, Palo Alto. Produce of dam—1, U. of C.; 2, Palo Alto.

THE SHEEP SHOW AT SAN FRANCISCO

The sheep division was the best balanced show seen in California in several years and it is honed that the sheep breeders of California and the West will make strong efforts to keep alive the interest developed at San Francisco. Bullard Bros., Woodland, annexed all the Rambouillet championships. Butte City Ranch, Butte City, had the champion Shropshire ewe and the Ratto Stock Farm, Napa, had the champion Shropshire ram. The University of California and C. Harold Hopkins of the Conaway Ranch, Woodland, divided the Hampshire championship with Calla Grove Farm, Manteca, a strong contender. The University also showed Southdowns and Romneys and Ellenwood and Ramsey of Red Bluff exhibited a few Corriedales. Frank Brown of Carleton, Oregon, judged.

AUCTION SALE OF FAT STOCK AT SAN FRANCISCO

Following the judging of the fat steers, sheep and swine classes at the California International, many of the winners were sold at public auction, the result of which appears below. Col. Ben A. Rhoades of Los Angeles conducted the sale and was assisted by Professor J. S. Thompson, of the University Farm and C. L. Hughes of Sacramento.

First prize Shorthorn steer consigned by Ormondale Co., Redwood City, to D. M. Linnard, Palace Hotel, San Francisco, 20c per pound.

Third prize Shorthorn steer consigned by T. T. Miller, Hollister, to D. M. Linnard, 20c per pound.

Second prize Angus steer consigned by University Farm, Davis, to Napa State Hospital, 17c per pound.

Three Duroc barrows, consigned by V. F. Doicini, Davis, to South San Francisco Packing Co., 15½c per pound.

Four Yorkshire barrows, consigned by Lloyd and Tointon, Santa Rosa, to South San Francisco Packing Co., 15½c per pound.

Fourth prize Chester White barrow, consigned by C. B. Cunningham, Milis, to South San Francisco Packing Company, 15½c per pound.

First prize senior Berkshire barrow and third prize Poland China barrow, consigned by University Farm to South San Francisco Packing Company, 14c per pound.

First prize yearling wethers, consigned by University Farm to Gehl Packing Company, Santa Barbara, 13c per pound.

Third prize, 15 head steers, consigned by Newhall Land and Farming Company, San Francisco, to Western Meat Company, 13¾c per pound.

Reserve champion lot 15 steers, consigned by C. Swanston and Son, Sacramento, to California Meat Company, San Francisco, 14¾c per pound.

First and fourth prize lots, two cars steers, consigned by Western Meat Company, to C. B. Harris, Los Angeles, 15c per pound.

First prize and champion carload Berkshire heavy packer hogs, consigned by Napa State Hospital, to Western Meat Company, 15¾c per pound.

Third prize carload Berkshire light packer hogs, consigned by Napa State Hospital, Napa, to Western Meat Company, 15¾c per pound.

Second prize carload Poland China, heavy packer hogs, consigned by M. Bassett, Hanford, to Western Meat Company, 17c per pound.

Second prize carload Poland China, light packer hogs, consigned by M. Bassett to Western Meat Company, 16c per pound.

CARLOT CLASSES AT SAN FRANCISCO

A feature of the San Francisco Livestock Show was the unexpected exhibits in the carlot classes for cattle, sheep and swine.

Over 20 full loads were in the various pens, and notwithstanding that in some instances more finish and quality might be desired, it is certain that no California show has served quite so well to encourage the finishing of fat stuff. If the initial show is taken as an index, future shows will be notable.

The Western Meat Company won first and fourth in carlots of steers over three years old, including the champion carlot of the show. The Kern County Land Company of Bakersfield won second, and the Newhall Land and Farming Company of San Francisco third. C. Swanston & Sons of Sacramento won the first prize and reserve champion carlot of fat cattle in the class for two year old steers. Practically all the carlots of steers were Herefords.

The Western Meat Company also won first prize with a carlot of fat sheep, carrying along the championship award in this class. The Foster Company was second and reserve champion, and the Union Land & Cattle Company third.

No less than six carlots of hogs were entered, and the rivalry between the adherents of the different breeds made this show one of the keenest of the week. The awards follow:

Car load fat hogs weighing 250 pounds—1, Napa State Hospital on Berkshires; 2, M. and A. L. Bassett, Hanford, on Poland Chinas; 3, Western Meat Company on Duroc-Jerseys.

Carload fat hogs weighing 175 pounds to 250 pounds—1, Western Meat Company; 2, M. and A. L. Bassett; 3, Napa State Hospital.

Grand champion carload—Napa State Hospital.

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holstein Cattle

November 25. Registered Holsteins, California Breeders Sales and Pedigree Company, Tulare.
December 18-19, A. W. Moris & Sons, Woodland.

Duroc-Jersey Swine

January 28, Diamond Bar Ranch, Spadra, Los Angeles County.
January 29, Winsor Ranch, Bonita, sale in Los Angeles.
January 30, Ireland Ranch, Owensmouth, Los Angeles County.

Percheron Horses

November 25, Sam Wade & Son, Enterprise, Oregon.

Following their successful auction on October 21 the Tulare County Poland China Breeders Association has set Friday, February 6, as the date for their second annual sale of pedigreed open and bred gilts. The sale will be held at the sales pavilion of the Tulare County Live Stock Association at Tulare, where the previous sale was held.

Seventy-five head of pedigreed Holsteins will be offered at the first annual sale of the Tulare County Live Stock Association at their sales pavilion at Tulare on November 25, with the California Breeders Sales and Pedigree Company in charge of the event. The association, with the cooperation of the Tulare Board of Trade, raised $15,000 for the purchase of the ground and erection of buildings and the sales pavilion was opened only a short time ago. The place promises to be the scene of one or more big stock sales every month and is becoming the stock show place of the San Joaquin Valley.

Martin Bros. of Visalia report that three of their sows, bred to California Big Bone leader, have littered eight, 12 and 14 pigs and that all the young Polands are showing up in fine shape and promise to be classy animals. The sows are prize winners, having taken ribbons at the Tulare and Visalia fairs.

Next Wednesday, November 19, the Fresno County Poland China Breeders Association will hold its second consignment sale of 50 bred sows, bred and open gilts and young boars. Walter C. Ficklin, secretary of the association, states that the sale is attracting attention from various parts of the state, due no doubt to the variety of blood lines to be found in the sale.

Fresno Evolution, a sow of the $25,200 Poland China boar Evolution sold in the August sale of Wm. E. Green, Algona, Iowa, has been secured by Walter C. Ficklin, Fresno, as an addition to his present herd of big type Polands. Fresno Evolution has for his dam the $1,750 sow Big Fancy Maid 2nd. Mr. Ficklin is consigning two gilts bred to this boar to the breeders sale to be held in Fresno November 19.

Prof. J. I. Thompson of university farm has purchased from Castleview Ranch, Santa Rosa, the Berkshire boar Rose Crest Rival 6th for the College of Hawaii, Honolulu. Another boar from the same ranch goes to F. E. Crowell, Alpaugh.

J. F. McSwain, Merced, who breeds Poland Chinas and had, in Big Model Fellow, the reserve grand champion boar at the last state fair, has been gathering together a large number of good sows and gilts for mating with this boar. He will on February 21, 1920, offer an attractive lot at public sale in Merced. Recent sale includes a bred gilt to M. M. Reiman, Planada; two bred gilts and a boar to T. R. McSwain, Merced; a young boar to W. M. Sell, Ahwahnee. and open gilts to Clarence Alvord, LeGrand; Harmon Morley, Merced, and Neta Parti, Athlone.

E. R. Eichner, Selma, who breeds Jersey cattle and Poland China swine, has now on official test nine of his Jersey cows which bid fair to make very creditable records. At the head of his herd is the bull Undulata Prince, sire of Brilliant Jersey Queen, the grand champion cow at the last state fair. At the head of his Poland China herd is Cal. Bob Wonder, a half brother to Caldwell's Big Bob.

T. Caesar & Son, Reedley, breeders of Poland China swine, have been making some additions to their herd of sows, including the top of the Haag and Bernstein sale. Big Lady M., for which they paid $570. It is the intention of Messrs. Caesar to reduce their herd to about eight sows of the highest breeding and type they can secure. They are using at the present for herd boar a young son of the famous Haag boar, Young Jumbo.

The Poland China breeders of Merced County have awakened to the necessity of organization and cooperation. As the result of a recent meeting they organized the Merced County Poland China Breeders' Association, with 12 members, and other breeders have signified their intention of joining the organization. The following officers were elected: J. F. McSwain, president; M. B. Cross, secretary, and J. A. Martin, M. M. Reimon and P. M. Mitchell directors.

John Kincaid of East Bakersfield is using a young Duroc boar sired by the noted hog Joe's Orion Cherry King 5th of Ira Jackson's breeding, the dam coming from the Waltemeyer herd of Iowa. The young boar is registered as Orion Cherry King Jr. He is a February 27 pig and weighs 375 pounds in breeding form. This is correct foundation blood for a great herd of Durocs in a good man's hands in Kern County.

A. R. Doctor owns a nice little alfalfa and Poland China ranch at Van Nuys. Less than a year ago Mr. Doctor selected a young boar pig sired by President from the John M. Bernstein herd. This young boar has made phenomenal development and gives promise of making an outstanding show boar for 1920. At 12 months he stands at 400 pounds. He is 64 inches in length, 54 inches both heart and loin, with ten inch bone. Mr. Doctor has 31 pigs in his first four litters sired by this boar, Bell's Hanford Boy.

The latest acquisition to San Fernando Valley livestock interests is the equipment of a new home for the Whitley Durocs. This is under the management of Mrs. Ross E. Whitley, whose 400 acre ranch is to have for its primary purpose the very best development of her favorite breed of swine, the Duroc-Jersey. Every feature of this equipment is strictly modern in type and bespeaks utility and permanency in every plan. The place is known as the Tu-Tock-A-Nu-La Ranch. It is located about one mile south of Van Nuys on Ventura boulevard and will be one of the show places of San Fernando Valley.

L. R. Hitchcock, Van Nuys, owns the 12 months old boar Nutmeg Gano, who is quite the picture of his famous sire Orion's King Gano. Mr. Hitchcock also owns a dozen spring gilts that are to be mated with this boar. These gilts are of high class blood lines and of good size for age. and clean cut in type and conformation. The first litter by Nutmeg Gano consisted of eight sow pigs and three boars out of the fine Uneeda Model sow, Jeanette.

One of Southern California's up to date business herds of registered Holstein cattle is that owned by W. D. Millard at Arcadia. A foundation sire for this herd is Aralia De Kol Pontiac Salambo 175997, with 25 of his get now in herd. His dam's record is 950 pounds butter in one year, milk 22,097 pounds; second dam's butter record one year is 1,003 pounds, milk 22,287 pounds. Mr. Millard also secured 19 head of cattle from the well known Ginn herd at Corcoran and five high class cows from the McAllister herd at Chino. The great three year old bull now in service is King Paul Korndyke Vale, by the noted King Korndyke Sadie Vale. The six nearest dams of this young bull averaged 30 pounds butter in seven days. His sire stands in a class by himself with a 40 pound dam, a 40 pound sister and a 40 pound daughter. It is a herd to be reckoned with in the future.

The sale of unregistered Herefords held at South San Francisco, November 8 by H. M. Barngrover of Santa Clara demonstrated the results to be expected from the use of pure bred bulls. Cows sired by pure bred bulls and rebred sold around $150; yearling

Continued on Page 700.

Announcement

52 SHORTHORNS

at Public Sale

State Fair Grounds, Sacramento, Cal.

Tuesday, December 11

The offering for this sale comes from one of the oldest established herds in the West, that of W. C. Short, Reno, Nevada, and this being his initial sale he has selected a splendid lot of well bred useful cattle. Most of the offering consists of bred and open heifers and a number of strong, well developed bulls, ready for service.

The offering will be presented in pasture condition. All are good deep reds, and sell tuberculin tested and as guaranteed breeders.

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Alfalfa Seeds

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Unexcelled for Germination, Purity, Color and Productiveness
VARIETIES:
Chilean (Common) Smooth Peruvian
Hairy Peruvian
OrdersShippedSameDayReceived
It will be to your interest to ask for our prices and samples before placing your order elsewhere

E. F. SANGUINETTI - Yuma, Arizona
"THE HOME OF THE HAIRY PERUVIAN"

3 Sensations 3
Winsor's Giant Orion The Largest Boar on Pacific Coast
Great Sensation 3rd The Largest Boned Boar, for Age on Coast
Great Model The Most Popular Sow Sire on the Coast
We can supply Duroc-Jersey sows or gilts bred to these boars that will return three dollars for every dollar invested. We will be pleased to answer your inquiry.
Winsor Ranch R. K. Walker Manager Bonita, Cal.

IT IS WELL TO REMEMBER
that ORION KING GANO, our premier herd boar, has sired some remarkable Duroc-Jersey boars. We have a few remaining on the ranch that we will sell reasonable and guarantee. Write for further description.
RANCHO DEL SUR, Donald H. Graham, Lancaster, Cal.

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A BUSINESS AUCTIONEER
When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.
GEORGE W. BELL Tulare, California

SUCCESSFUL RANGE MANAGEMENT

Many people who have visited the Salt River Valley of Arizona and taken the trip by auto from Phoenix to Glendale have inspected the fine beef feeding plant, including silos, sheds and yards, of E. C. Cavness of the Burnt Ranch Cattle Company. Here each year large numbers of cattle are fattened upon feeds produced in the Salt River Valley.

A few facts concerning the range activities of the company are supplied through County Agent H. C. Heard of Maricopa County:

"A number of years ago Mr. Cavness and a brother established a range on the head of Lime Creek about 65 miles north of Phoenix. The range had previously suffered from no management and had been pretty well grazed out with both sheep and cattle. At that time there were a great number of Shorthorn dairy cattle in the Salt River Valley, and from these the Cavness brothers stocked their ranch. When the range came under the direction of the forest service there was, of course, considerable skepticism on the part of most ranchers and a hesitancy to take out grazing permits. Mr. Cavness soon took out a permit for 400 head of cattle and was awarded a good sized basin which was more than sufficient for their cattle. The topography, however, was such as to prevent the range being divided so other operators were kept off.

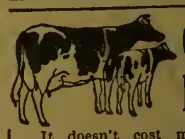
"In the first year or so nearly as many strange cattle drifted into this range as those that belonged there. Cavness Brothers put in a series of drift fences and were later allowed to fence the entire range. As soon as they could protect their cattle from intermingling they took out all of the old bulls and restocked with good pure bred sires. As a result the ranch, which at present belongs to a brother of Mr. Cavness, is now entirely stocked with pure bred Shorthorns, though the cows have not been registered. Furthermore, the calves have been consistently dehorned and as a result all of the cattle are now hornless.

"This trial of Shorthorns came in the face of an accepted opinion that Shorthorn cattle were unable to care for themselves on the range. In spite of this the Cavness Brothers have made a distinct financial success out of the place and have found the Shorthorns were good rustlers even on their ranch, which is very rocky. It is the opinion of Mr. Cavness that Shorthorns need more range than Herefords, but are much better feeders when ready for the lot, and keep up especially well in quality.

"The Burnt Ranch herd consists of about 4,000 head of cattle. The range is largely grama grass and browse with a number of various weeds. The best part of this range is kept for a bull pasture, and in the winter time all of the bulls are put in this pasture. Most of those that have been in one winter go back of their own accord, and out of 200 or more bulls probably only about ten per cent have to be rounded up and put in the pasture. During the winter those bulls are inspected every week or so, and any that are beginning to get thin are brought to the corral and fed. Mr. Cavness firmly believes that bulls cannot be of the best service unless they are kept in good condition, and by the time they are turned on the range again there are relatively few that have not had some feeding. They are allowed all the salt they can eat and are put on the range usually from Middle Western points in a fat condition.

"Furthermore, his summer and winter range is kept separate and the grazing is therefore increased. Because of the system of removing bulls from the range and keeping them in good condition, and dropping the calf crop in the most desirable season (April is the heaviest month), Mr. Cavness gets a calf crop of probably 60 per cent where most ranchers probably get only 50 per cent. Mr. Cavness rather expects the calf crop to increase with the addition of new blood."

SANTA ANITA RANCHO
Anoakia Breeding Farm
Arabian-Thoroughbreds
Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five galted saddle stallion, winner in many prominent shows.
Mammoth Jacks
We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.
Poland China and Berkshire Boars
Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.
Correspondence Invited
Anita M. Baldwin
Santa Anita Calif.
W. H. Taylor, Supt.



Get a Holstein Bull Now
It doesn't cost much to make a start, but every year it will cost more. Some of the most successful and prominent Holstein men started with only a few pure bred animals in connection with a number of good grades, gradually weeding out the grades and replacing them with pure breds.
Grade up your herd with a pure bred Holstein sire. Then when you're satisfied that you're on the right track, you'll feel like getting a few cows. Any good Holstein does the work of two ordinary cows. If interested in
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Quality Holsteins
Our herd is headed by a grandson of the world's greatest dairy cow, Tilly Alcartra,
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whose dam and sire's dam average:
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Females and bulls from A. R. O. dams for sale
All animals guaranteed
Leeman & Kilgore, Ripon, Calif.

$30 Holsteins $30
Five weeks old 15-16 pure bred from Waukesha County, the world's greatest cow county. $30.00 crated. Write us for anything in cattle.
DR. J. A. ROBERTS STOCK FARMS
Oconomowoc, Wis.
Western Branch: Hollywood, California

Bunting's Mission Herefords Are Profitable
They will increase cattle profits by adding pounds of beef to every steer sold. For the best of breeding and individuality visit my herd and see the kind that win at the best shows. Prices reasonable. You'll be welcome.
JOHN A. BUNTING
Mission San Jose Calif.

DIAMOND G HEREFORDS
are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 2d, one of the best bulls in the West. Correspondence invited and visitors welcome.
H. H. Gable Esparto, Calif.

Brighton Farm Herds
Registered Shorthorns
and
Berkshires---Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

When Writing Advertisers, Mention The Cultivator.

BUTTER AND CHEESE SCORING CONTEST

The third scoring of the California Educational Butter and Cheese Scoring Contest will be held in connection with the Creamery Operators Association Convention at Davis on November 20. All entries must be shipped not later than Monday, November 17, and addressed Dairy Industry Division, University Farm, Davis, California.

The practical butter makers short course is to be held at the university farm from November 10 to 19 inclusive. This course offers an excellent opportunity for the practical buttermakers to brush up in their work.

On Thursday, November 20, or the day following the short course, there will be held the scoring contest, a buttermakers' judging contest, a meeting of "California Butter, Cheese and Ice Cream Makers' Association," and the opening session of the California Creamery Operators Association Convention. The convention of the Creamery Operators will be continued through Friday and Saturday.

This is the first time that California buttermakers have had a chance of attending all of these meetings during a two weeks' vacation. For further particulars address S. L. Denning, University Farm, Davis.

OVERCOMING THE HAY SHORTAGE

A very practical way of meeting the present hay shortage is through the use of beet top silage, 30 pounds of which per day per steer will reduce the animal's hay requirements by one-half.

On many fields as much as five tons per acre of silage can be had when the tops are promptly gathered and put into piles immediately after the beets are topped. This prevents scattering and waste. The farmer after gathering the tops should pile them in a pit silo, packing them down firmly and sealing them over with fresh beet pulp or earth. A satisfactory silo may be made by scooping out a hole of suitable size and lining the sides and bottom with straw before filling. After 30 days, on opening the pit a fine quality of warm, succulent feed will be available. The silage has a value equal to about one-half the value of hay. The feed should be collected handy to the feeding yards. The silage comes out of the pit in warm, appetizing conditon all through the winter feeding period. In fact, some growers hold a part of the silage for summer feeding to supplement the short grass season when pastures are suffering for lack of moisture.

The silage is good for beef or dairy cattle and also for sheep. When fed in regulated amounts excellent results are had. Much larger values are had from beet tops when siloed and fed as a blended ration than when grazed off the field in the usual way. Saving one-half of the hay crop is a big item this season where a hay shortage exists.

GENEROUS COWS NEED GOOD GRAIN RATION

With the pasturing season at an end every owner of dairy cows should begin to plan his winter feeding, says C. H. Eckles, University Farm, St. Paul. Cows often suffer more for lack of feed between the time when winter feeding in earnest begins than they do after winter is really at hand. Every experienced feeder has learned that it is easy to let cows decline in milk as a result of poor feed, but very hard to bring them back. A good production for the year is possible only when the cow is kept at a high level of milk production all the time.

The foundation of all good dairy rations is a succulent feed, either silage or roots, and alfalfa. Just as soon as the grass begins to get short, therefore, the feeding of silage and hay should begin. It never pays to scrimp on roughage. Let the cows have as much as they will eat up clean all the time. That is what a cow is for—to convert roughage into milk. If silage and legume hay are on hand the rest of the feeding problem is not so hard.

A good grain mixture should contain at least three different feeds, one of which is rather high in protein. A good grain mixture for cows of medium production is ground corn or barley four parts, oats or bran two parts, linseed meal one part.

The grain fed should vary with the milk produced. The man who feeds all his cows the same amount of grain never feeds economically. The cow that is milking heavily is the one to receive the liberal grain allowance. A good rule to follow with reference to amount of feed, adds Mr. Eckles, is to give one pound of grain to each three pounds of milk produced by a Guernsey or Jersey, and one pound of grain to each three and one-half pounds of milk by a Holstein.

NATIONAL SWINE SHOW AT DES MOINES NEXT YEAR

The officers of the National Swine Growers Association have just decided to hold the Fifth Annual National Swine Show and Exposition at Des Moines, Iowa, in 1920. The show will fall in the same position in the circuit of fairs and expositions as it has in the past. On account of the fact that all shows will be one week later on account of Labor Day, the National Swine Show and Exposition in 1920 will be held during the week beginning October 4.

PRACTICAL STUDY OF MARKETING

Courses in marketing of farm products are now offered by many agricultural schools. A three day short course in livestock marketing for managers of cooperative associations is announced by the Missouri college of agriculture. These will be held in two of the principal stock markets. Instruction will be given in grading stock and accounting. The managers will also have opportunity to discuss their common marketing problems.

The cooperative livestock shipping association affords a means whereby the farmer feeding stock in less than car lots can get just what his stock brings on the central market, less shipping expenses. So far as marketing is concerned, this organization puts the small feeder on a level with the man who feeds a carload at a time.

State Game Warden Joe Prochaska of Arizona is recommending the employment of trappers and hunters in the Sitgreaves national forest to protect the herd of elks from destruction by lions and wolves

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and
RU-BER-OID
READY ROOFINGS

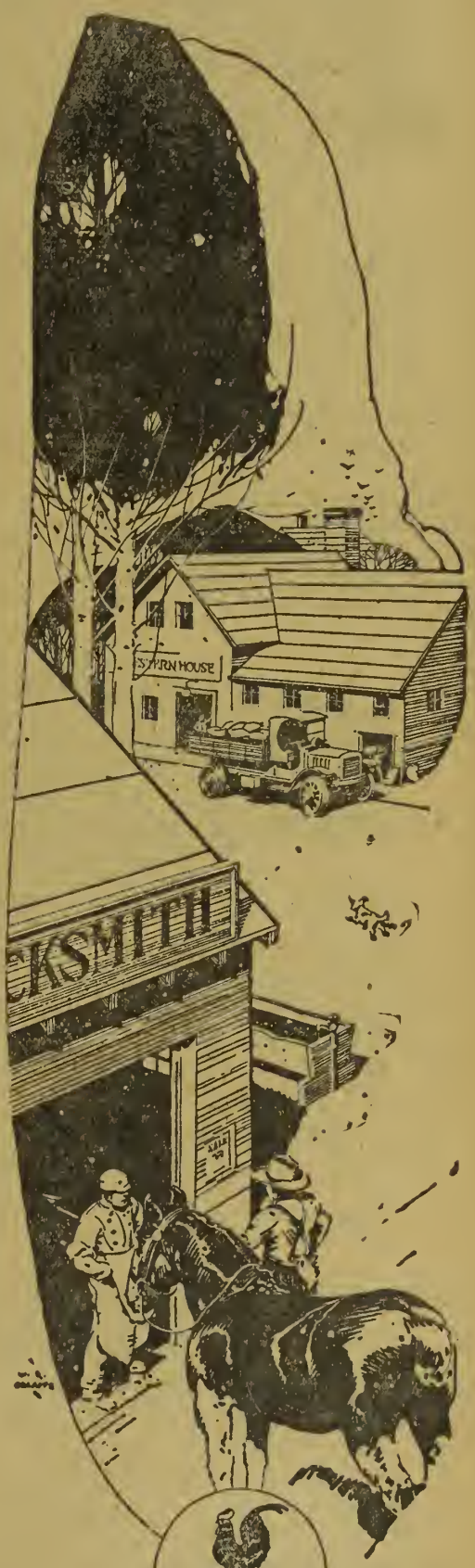
Good Roofing Pays

Sun and rain are the two worst enemies of roofing, particularly the sun because it draws the vitality—the life—right out of ordinary roofing.

That's why *good* roofing is always cheapest. It has the long-lasting qualities—the ability to *resist*. You can depend upon it to protect the contents of your home, barn, garage, warehouse or shop for years, and it costs little or nothing for repairs.

Tough, long-fibre rag felt and highly waterproof, sun-resisting, saturative and coating compounds are scientifically and skillfully combined to make Malthoid and Ru-ber-oid roofings. *Quality* is built in at every step, and every step is supervised by experts of long experience. We have been making Malthoid and Ru-ber-oid for over eighteen years.

It pays to roof with Malthoid and Ru-ber-oid because of their remarkable resistance to the elements, and consequent long life and freedom from repair expense.



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EACH THE STANDARD OF ITS KIND

LIVESTOCK NEWS NOTES

Continued from Page 697.

bulls sold in lots up to $230, and bull calves averaged $150. The principal buyers were the Berryessa Cattle Co., San Francisco; J. F. Dunne, Gilroy; Silliman Bros., Watsonville; S. W. Cheney, Chico and the La Honda Stock Farm, La Honda. C. L. Hughes managed the sale and Col. Ben A. Rhoades of Los Angeles was the auctioneer.

John A. Bunting, Mission San Jose, secretary of the Pacific Coast Hereford Breeders' Association, and H. H. Gable, Esparto and H. M. Barngrover, Santa Clara, directors of the association, are attending the American Royal Livestock Show at Kansas City. Bunting and Gable expect to remain East for the International at Chicago and plan to visit a number of the leading Hereford herds of the East.

Professor J. I. Thompson of the university farm, Davis, is attending the Pacific International Livestock Exposition at Portland. Thompson will also attend the International at Chicago.

The champion Poland China barrow shown by M. Bassett of Hanford at the recent San Francisco show will compete at the great Chicago show. The Bassett barrow made a strong impression on the Eastern judges at San Francisco and it is expected that he will be a factor at the Eastern show.

The Edinger-Johnston Co., Hood, disposed of all their grade Holsteins at a sale held November 12. Prices ruled very satisfactory, cows making a general average of $115. This firm has been one of the heaviest buyers at recent Shorthorn sales.

At Last—It's Here!

A Great Leverless Tractor Disc
with an

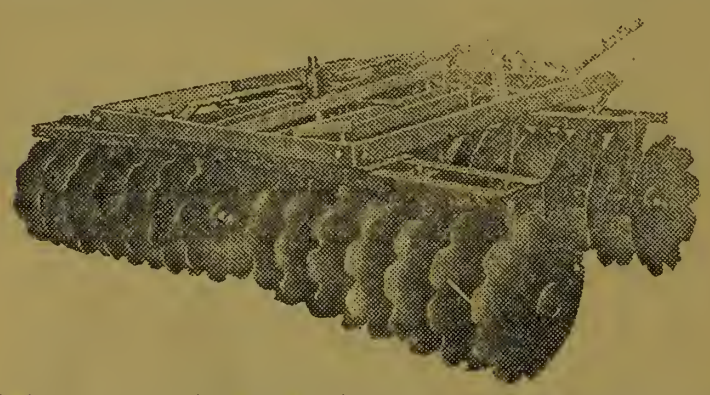
AUTOMATIC ADJUSTABLE HITCH.

It offers more advanced ideas of construction than were ever before presented

You can get a disc now without levers sticking up on it to break off tree limbs or to break your back "throwin' her out" of the ground.

We have ready for distribution a new tractor disc with the best automatic features ever invented.

The angle of the disc is given by pulling a rope attached to a trip lever on the disc and brought forward to the tractor. To change from straight to working angle all that is necessary is to pull the rope attached to the trip lever which sets the disc to any angle desired.



Besides the automatic features which give this disc an advantage everyone desires, the automatic is one of the heaviest and strongest ever constructed, having braces and cross braces of steel angle irons. This is not a trailer type harrow. It is absolutely impossible for the rear gang to trail the furrows made by the front gang. The frame is rigid. The disc cuts down ridges, fills up holes and levels the ground. Every feature of the construction is for utility and hard service. Made for tractors in 5, 6, 7, 8, 9 and 10 ft. sizes with either 18 or 20 inch cutaway or solid discs. Farmers who expect to buy discs soon should be sure to see this new automatic disc with its many improved features. All sizes on display at the Sales Rooms of

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Write for name of your nearest dealer showing this disc.

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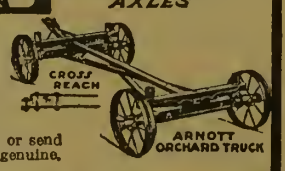
We carry in Los Angeles stock the largest assortment in the Southwest. Well finished and painted. Guaranteed in every way Hickory axles. Steel wheels with grooved tires. Wood or steel gears. Nothing handier around the farm. Prices $47.25 and up. Your dealer will take your order, or send to us direct. Don't accept imitations. Our name on every axle if genuine. Call and look them over when in the city, or write for Catalogue.



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Want party with suitable range and some milk to raise kids on the shares.

Will have probably 100 well-bred doe kids the coming season. Our stock is select—3-quart does the minimum. Many 4 to 5-quart does in herd.

SIRES—Pure-bred bucks of highest standing: Nubian, Inkyo Yusif 861; Saanen—Sir Barnaby 3531; Toggenburg—Fairy 1930. Have won many prizes on these sires at shows this year. Address

"The Goat'airy," 320 W. Ave. 45, Los Angeles

One of the largest deals in registered Shorthorns made in California this year was recently closed when the Caledonia Farms, West Sacramento, sold to the Edinger-Johnston Co., Hood. 25 cows with heifer calves at foot. Many of the cows are rebred to the famous bulls at the head of the Caledonia herd.

The dispersal sale of Hereford cattle held at San Francisco, November 10, by the Diablo Stock Farm, Danville, distributed a useful class of cattle to a number of new buyers at prices that represent conservative values. Aged cows sold up to $280 and the top price for a bull was $500, the price paid by John Buck, Sr., San Francisco, for the aged bull, Bertram Fairfax, a grandson of Perfection Fairfax. It was stated that this bull was to be shipped to the Hawaiian Islands. T. A. Work, Monterey, bought 12 head, P. H. Hoare, Hayward, took five. Other buyers were: H. M. Barngrover, Santa Clara; Owen Hollister, Lompoc; E. L. Farley, Raymond; L. F. Buchetto, Oakdale; Geo. A. Clough, San Francisco; A. T. Devoy, Island Mountain, and J. A. Niles, Portersville. The sale was managed by C. L. Hughes of the California Breeders Sales and Pedigree Co., Sacramento, and Col. Ben A. Rhoades of Los Angeles was the auctioneer.

The Tulare County Poland China Breeders Association have claimed February 6 as the date for their next consignment sale to be held at Tulare.

At a recent meeting of the Durham Livestock Breeders Association, it was decided to purchase four Holstein bulls at prices around $1000 each. Three of the bulls were secured from the Jane Garden Farm, owned by Fred Kiesel of Sacramento. The fourth bull was selected from the University Farm herd.

Frank B. Anderson, Sacramento, secretary of the Western Berkshire Congress, has claimed December 2 as the date on which he will hold his first public sale of Berkshires. The sale will be held at the state fair grounds and will consist of 40 head of bred sows, gilts and boars, including a number that were shown at the fall fairs.

On December 11, W. C. Short of Reno, Nevada, will sell at the state fair grounds, Sacramento, 52 head of registered Shorthorn bulls and females. This sale is Mr. Short's initial offering and it is expected that the sale will appeal to those interested in cattle of conservative values. Ord L. Leachman of Sacramento has the sale in charge.

GOOD HOLSTEINS IN TULARE SALE

An unusually attractive lot of registered Holsteins will be sold at public auction in the new Sales Pavilion at Tulare on Tuesday, November 25, from seven of the leading herds in the lower San Joaquin Valley. Buyers will find a large number of highly bred young cows and heifers from which to select, and many of them are bred to the wonderfully well bred yearly record bulls that have gone into this territory as herd headers within the past two years. It is safe to say that no more attractive Holsteins have appeared in the fall sales to date, and as the cattle are sold guaranteed to be breeders and subject to tuberculin retest by the buyer they should meet with a good reception on sale day. The sale is under the management of California Breeders Sales and Pedigree Co., Sacramento, with Col. Ben A. Rhoades of Los Angeles on the block and Col. Geo. W. Bell, Tulare, in the ring.

THE AMERICAN HAT

In 1918 the little island of Trinidad in the West Indies imported hats from the United States to the value of $10,812. Eight times that value in hats comes from England for the price is lower. But the better classes purchase largely of American hats of all kinds for men, women and children. As the sales are made largely from travelers' samples, the method of salesmanship must be practiced by American manufacturers and jobbers.

MORRIS WILL SELL SOME OF THE TOPS

The unfortunate fire which destroyed the great cow barn, the four silos, a large quantity of mill feed. and the season's hay crop on the A. W. Morris & Sons Corporation farm at Woodland, caused some hasty and necessary changes in the plans of this big breeding firm. It was found absolutely necessary to reduce the size of the herd at the earliest possible date, and after careful survey it was found that at least 70 head must go. These will be sold at public auction at Sacramento on Thursday, December 18. This is conceded to be the best bred large lot of cattle that has ever left the Morris herd in one group, the females being practically all daughters of the herd bulls that have been proven and made famous in the Morris herd. A very large number of the females are three and four year olds, and but for the present necessity would be kept in the herd and still further developed. An outstanding feature of the sale is the fact that the females are all bred to bulls from dams with records of over 1000, 1100 and 1,300 pounds butter in one year, all of them being the present Morris herd sires. In making up the list of bulls to be offered in the sale it was found that steady sales had kept the bull crop down to a point where there were only ten bulls of service age on the farm, and every one of them will be sold in this sale. It will thus be the only opportunity buyers will have to secure a bull of service age from the Morris herd until some months from now when the younger ones will have reached service age. The sale will be conducted by California Breeders Sales and Pedigree Company, Sacramento, with Col. Ben A. Rhoades Los Angeles, on the block.

ELKHORN AYRSHIRE SALES

J. Henry Meyer, who maintains the Elkhorn Ayrshire herd at Watsonville, reports the sale of two high class bulls.

One, Elkhorn Statesman, was purchased by the University of California to head their Ayrshire herd at Davis. Professor Gordon H. True selected him from among a number of good individuals. His sire is a grandson of the world's record Ayrshire cow, Garclaugh May Mischief, with a record of 25,329 pounds of milk and 1,053 pounds of butter. His dam, Polly Puss III, has a two year old record of 9,198 pounds of milk and 452 pounds of butter, test 4.18 per cent fat; a junior four year old record of 9,394 pounds of milk and 464 pounds of butter, test 4.19 per cent fat; and a senior four year old record of 13,194 pounds of milk and 612 pounds of butter, test 3.98 per cent fat. She is at present on A. R. test again and for the first ten months of her lactation period has produced over 14,000 pounds of milk testing over four per cent fat.

The other young bull, Rena's Laddie of Elkhorn was sold to Edwin A. Wells, a noted Ayrshire breeder of British Columbia. The sire of this young bull is a son of Lotus Jean Armour, the highest priced cow at the last National Ayrshire Sale held in Massachusetts, the consideration being $8,100. Her dam, Jean Armour III, is the world's record three year old Ayrshire, having produced 21,983 pounds of milk and 1,003 pounds of butter. This youngster's dam, Rena Ross III, is a member of the famous Rena Ross family.

LOS ANGELES GOAT DAIRY

Four years ago J. A. Winans established a goat dairy out in the Highland Park district of Los Angeles known as "The Goatalry." Today there are 200 high class does in the herd, 75 of them milking at this time. As seen today the herd is practically of Mr. Winans' own breeding. It is strictly a commercial enterprise, with up to date equipment and twice a day delivery service. The three quart doe is the minimum as standard for production. However, the outstanding doe Starlight has made a four weeks' record of seven quarts per day; and there are many others with four and five quart records. The Nubian-Saanen cross is the favorite for milk production. The great Nubian sire Inkyo Yusif 861 is the leading show buck of the breed, winning the blue ribbon at Los Angeles Livestock Show.

POTATO IMPROVEMENT

It has been general practice for the farmer to save his best ears of corn and his poorest potatoes for seed purposes, though he never knew why selection should not work alike in both cases, which it surely does. Now, not only does the careful farmer save the best ears of corn, but the best ears from the best producing stalks. The potato farmer is not only looking for the best individual potatoes but considers the hill yield of still greater value. His goal is the most, as well as the best potatoes he can grow. The value of the potato crop, the quick and sure cash returns, the value of the potato in crop rotation and its great importance as a food have led to the closest scientific and practical study of crop production, and the outcome of this has been organization of potato growers' clubs, potato growers' departments in farm bureaus and, still further, seed potato growers' associations whose members market certified seed potatoes. The California potato grower of today demands a clean, smooth, shallow eyed, true to name, uniform seed, free from disease, adapted to his particular soil and climate and of strong vitality. And he can get it. This state has made wonderful strides in the development of potatoes and none need send east for seed potatoes, in fact, he who does will prove a loser. Occasionally seed runs out, but a new supply should be procured from other sections of the Pacific Coast.

ON
TUESDAY
DECEMBER
—2—
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Anderson
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Will Offer at
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40 Head
PURE BRED
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STRAWBERRY PLANTS
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Big orders a specialty; small orders appreciated.
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State Nurserymen

The Nurserymen's Convention held at Chico at the same time as the State Fruit Growers' Convention, had somewhat smaller attendance than usual though there were members present from all sections of the state, but the fewer number present had no effect upon the punch given to the various sessions by snappy discussions and effective action. The live things started by the convention included a movement for the establishment by nurserymen of a great testing out or standardizing orchard. It was determined to organize a company with $100,000 capital, which should investigate and plant trees for the purpose of securing seed, scions and buds the quality and productive power of which are known to be the highest. This movement was understood by some to have the scope of a great trust or co-operative nursery in which all nurserymen of the state would unite. It is that in no sense, but, as noted, simply for the purpose of securing seeds and scions. The committee named for perfecting the organization of the $100,000 corporation is Geo. C. Roeding, Max J. Crow, Wm. P. Kirkman, J. E. Bergholdt and H. A. Hyde.

The nurserymen also plainly set forth their attitude on the Japanese question. When the subject was first presented one nurseryman reported material loss and discomfort because Japanese had worked a boycott and he questioned whether it would be wise to touch upon the question in a public way. This, however, brought quick response from practically everyone present that California nurserymen were nothing if not patriotic and full-blooded Americans. Ringing resolutions appealing to Governor Stephens for quick action were unanimously passed.

Discussion of the establishment of a standard of size in nursery stock was continued from the Riverside convention at which it was first broached.

The ladies' auxiliary of the nurserymen, of which Mrs. John Vallance was president, failed to secure a quorum, but it is expected a large attendance will be secured at the next convention which will be held in Fresno.

The officers elected are: President, J. E. Bergtholdt; vice presidents, H. A. Hyde, Will C. Wood, L. H. Elmer, James Mills and Geo. C. Roeding; secretary-treasurer, Henry Kruckeberg. Board of directors: J. E. Merriweather, chairman; R. M. Teague, Leonard Coates, W. T. Kirkman, Jr., and H. J. Shearer.

Some of the Nurserymen on State Normal Steps

Upper row: At left, Geo. C. Roeding, Byron O. Clark, Henry Kruckeberg, Will C. Wood, Max J. Crow. Two at lower right, with overcoats: Frederick Maskew, R. C. Nougaret. Standing at Mr. Roeding's right: E. D. Copeland. Hands in pockets: J. E. Bergtholdt. At his right: H. A. Hyde.

Prune and Apricot Growers Campaign for Membership

The board of directors of the California Prune and Apricot Growers, Inc., has notified its 8,000 grower members that the continuance of their farmers non-profit organization beyond March 1 next depended upon the signing for the association of an additional 20,000 acres of prunes and 6,000 acres of apricots before that date.

The directors informed the association members that unless this new acreage was signed it would not exercise the option it holds to purchase the growers' crops in 1920 and 1921. Failure of the association to exercise these options would mean the collapse of one of the strongest fruit growers' organizations which the California farmers have ever formed and would leave the prune and apricot industry in the chaotic state which existed prior to 1917 when the growers were at the mercy of the independent dried fruit packers.

The value of the growers' organization, according to the association officers, was proven conclusively this fall, when after three years of existence the association obtained for its members the best price they have ever been paid for their fruit and established hundreds of them on a firm business basis.

H. G. Coykendall, general manager of the California Prune and Apricot Growers, Inc., said yesterday that there was no doubt but that sufficient new members would be obtained to make up the 26,000 acres demanded, but explained that the motion was adopted by the board of directors to give the farmers fair warning that a crisis faced their organization which must be met unflinchingly by every prune and apricot grower in the state.

Pointing out the necessity of demanding greater support for their marketing organizations by the fruit growers of the state, H. C. Dunlap, organization manager of the association, said yesterday that young orchards already planted would double the prune yield of the state by 1924. He said there are 80,000 acres now producing prunes in California and estimated that 14,000 acres were coming into bearing annually. The production of dried apricots he figured would increase even more rapidly.

Organization meetings to be attended by growers and influential business men of the prune and apricot producing districts of the state will be begun immediately under the direction of Dunlap to complete plans for the acreage campaign. Meetings arranged for to date will be held at Chico, Colusa, Yuba City, Corning, Santa Rosa, Healdsburg, Geyserville, Napa, Vacaville, Suisun, Winters, Visalia, Hanford, Kingsburg, San Jose, Hollister, Haywards, Santa Paula, Hemet and Santa Rosa.

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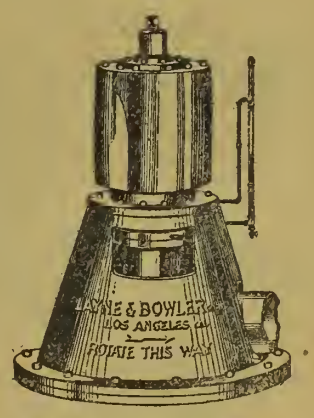

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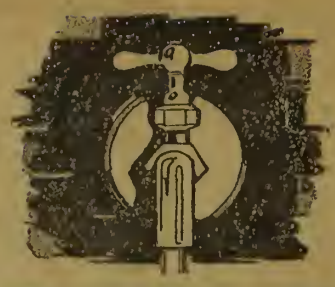

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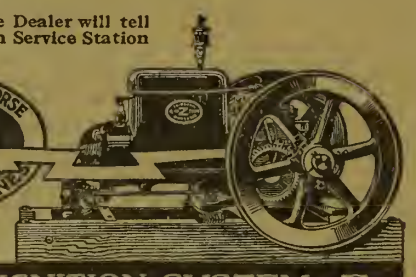

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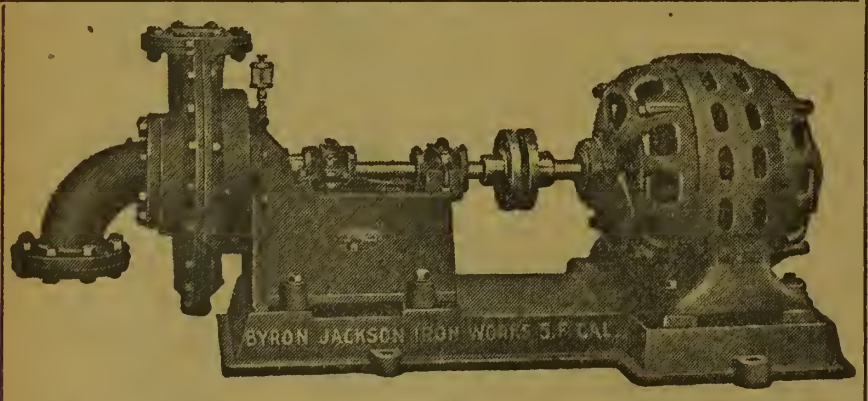

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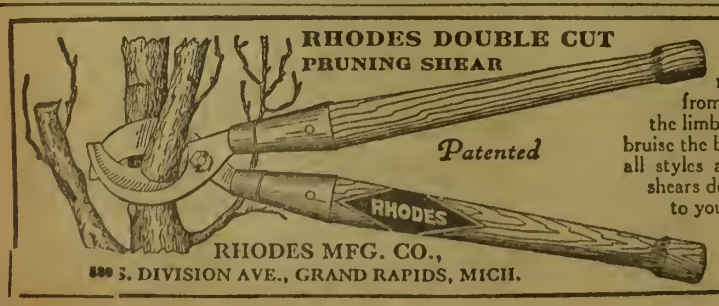

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ARSENICAL WAR BABIES

Continued from Page 679.

kinds of calcium and lead arsenates are equal, but for practical purposes the acid and the basic types only are of interest. All investigators agree that the acid type is too soluble in water to permit its use on foliage. It has been uniformly observed by those who have studied the matter that this solubility is reduced to an insignificant quantity in the presence of lime water or milk of lime. It is suspected, however, that the acid type is converted into a neutral or basic type by this treatment, the properties of which are discussed below. The solubility defect of the acid type makes further discussion of its properties of no concern to the student of insecticides, even though the material is known to be satisfactory in respect to its other properties.

A pure neutral calcium arsenate was prepared by Robinson who found that it was considerably less soluble in water than the acid salt. The experiments of this investigator showed that if lime were added to a suspension in water of either type of calcium arsenate, the lime almost disappeared from the solution up to a certain point, but if added in sufficient quantity to be present in solution even in a slight excess, no soluble arsenic could be detected in solution. The phenomenon of removal of lime from solution in this manner strongly sugests the formation of basic arsenates, but the matter has not been investigated. At any rate the experiences of all investigators, both in the laboratory and in the field, have plainly shown the need of excess of lime to reduce the solubility of all calcium arsenates in order to permit their use as a spray.

Stability Under Weather Conditions

Inasmuch as both the commercial calcium arsenates and the home preparation almost invariably contain an excess of lime, they probably may be considered either neutral or basic types, but not of definite composition nor of uniform poison content. The reports concerning safety to plants are based upon the use of either the commercially or home prepared material, and it is not surprising that conclusions are at times contradictory as noted in the introductory paragraphs. This fact and the wide variation in climatic conditions under which the experiments are made cannot do otherwise than lead to diverse results.

Judging from an impartial survey of all the information available, the writer is of the opinion that calcium arsenate, as now commonly prepared, is considerably less stable than acid lead arsenate when exposed to the weather and does not compare at all favorably with the basic type of lead arsenate. It is possible, however, that future experimentation will develop a compound of lime and arsenic which will be more resistant to the solvent action of water and the weather than preparations now available.

As a combination spray with lime-sulphur solution, calcium arsenate is of more than usual interest. Both insecticides being of the same base, calcium, the tendency for chemical action is reduced to a minimum. In fact, the experiments of Robinson have shown that there is no chemical change when the two are mixed. This is in sharp contrast to the results when acid lead arsenate and lime-sulphur solution are mixed when a number of reactions occur resulting in the liberation of a large amount of soluble arsenic, free sulphur, and the formation of lead sulphide.

Carbon dioxide when passed through a suspension of either acid or neutral calcium arsenate in water has an appreciable solvent action on the arsenicals, but this is diminished in the presence of excess lime.

Action on Insects

Calcium arsenate has been found to be a little slower in its action on insects than lead arsenate when equivalent amounts of poison were used.

Poison Content

The commercial materials contain roughly 18 to 50 per cent arsenic pentoxide, many of which contain a too large proportion of arsenic to be used with safety to foliage. Neither the "C.P." nor the commercial compounds are above criticism.

The pure salt of the acid type containing 64 per cent arsenic pentoxide is too soluble in water to permit its use on foliage. Sanders emphasizes that the neutral salt only should be purchased for use in Nova Scotia. Robinson's experiments have confirmed the soundness of this view. The pure neutral salt carries about 58 per cent arsenic pentoxide, which is also more than the percentage usually found in the commercial material. It is therefore evident that the commercial article is quite impure, probably containing excess lime which would tend to lessen its toxicity to plants. The pure neutral salt contains about the same amount of poison as Paris green, although being an arsenate, it is probably less active. The commercial material, however, only contains about one-third more poison than acid lead arsenate, and being somewhat slower in its action about equal quantities of a 40-45 per cent calcium arsenate and lead arsenate would be expected to be equally toxic to insects.

The fineness of particles of a well made home preparation and the better grades of factory products is above criticism and compares favorably with that of the best of the arsenicals.

The specific gravity of calcium arsenates is about half that of lead arsenates.

Adhesiveness. The adhesive qualities of calcium arsenate are reported to be excellent, remaining on foliage in abundant quantities even after heavy rains.

Cost. Calcium arsenate sells at a lower price than lead arsenate, but has not been on the market a sufficient length of time to have established a price sufficiently definite for comparison.

Summary

The solubility in water of the pure compounds prohibits their use on plants but this solubility is diminished by the addition of excess lime. Laboratory tests have shown that carbonic acid decomposes calcium arsenate, but this action is likewise decreased or prevented by lime. Field observations have tended to show that calcium arsenates are not sufficiently stable to permit their use on tender foliage, and in some sections (as noted in Canada), the material is not a safe insecticide for use alone on apples. Its chemical compatibility with lime-sulphur solution is an important point in its favor. Its toxicity to insects compares favorably with that of lead arsenate. Its physical properties are above criticism, being equal to or superior to those of most arsenicals. The less cost and somewhat greater poison content of calcium arsenate as compared with that of lead arsenate has made a strong appeal to the grower in these days of high prices for all commodities, but perhaps has been unduly emphasized in view of the somewhat greater risk of foliage injury attending its use.

It may be that this remedy will establish for itself a place of limited usefulness in certain combination sprays, but never as a general stomach poison unless greatly improved. On the whole, it would seem that the use of calcium arsenate would be a step backward in the art of pest control. The uniform caution in the literature "to use lime" and "not to spray peaches, plums or other tender foliage," reminds one too strongly of the style of the literature during the period when Paris green was "fashionable" in the orchard.

Iron arsenate although non-toxic to the most tender foliage failed to give a satisfactory control of insects even when used in amounts equivalent to twice the arsenical content found effective with better known arsenicals.

Zinc arsenate is fairly effective as a stomach poison but somewhat less so than lead arsenate and has no distinct advantage over the latter.

Magnesium arsenate. A large chemical company introduced and extensively advertised a magnesium arsenate in 1918, said to be composed of 73 per cent magnesium arsenato and 23 per cent inert matter consisting of magnesium hydrate, moisture, etc. The poison content and water-solublo arsenic is declared on the label to be about the same as that of acid lead arsenate.

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"baby" arsenical, it is placed on the list for experimentation by impartial investigators in order to determine its status among economic poisons. It is recommended for trial only in a small way.

GOOD SEED POTATOES

The average production per acre of potatoes in the United States is very much lower than in Canada, Great Britain and European countries outside of Italy. One of the reasons is that less attention has been given to the character of the seed. The production of high grade seed should be regarded as a special business.

Good strains may be obtained by the tuber unit, hill or mass selection methods through the process of roguing out the diseases and weak hills.

When tubers from diseases or weak plants are planted a similar harvest will be reaped.

Only seed from productive plants should be used.

Careful attention should be given to securing seed that is free from varietal mixture and that is true to type.

Good seed can not be produced unless the growing plants are given good cultural attention.

As a rule the quantity of seed used is not sufficient to produce a maximum crop.

From 15 to 18 bushels of seed should be used per acre instead of 9 to 11, as at the present time.

All seed stock should be disinfected before planting.

Good storage conditions are essential to insure sound, firm seed at planting time.

POTATO GROWERS ORGANIZE

The California Seed Potato Growers bave organized and elected Geo. H. Peters of Bakersfield, president. Mr. Peters has a large acreage six miles scuth of Edison, Kern County, and this coming spring will plant 400 acres of White Rose and British Queen, largely to produce certified seed potatoes. The other officers, all prominent potato growers, are: President, T. H. Lambert, El Monte; secretary-treasurer, J. L. Oleson, Van Nuys. In addition three directors have been appointed: H. H. Hyde, Watsonville E. D. McSweeney, El Monte, and Prof. S. S. Rogers, representing the University of California. Two more directors will be appointed at the meeting at Chico, one from Stockton and one from Sacramento, so that every potato growing district of the state will be represented. A committee was appointed to perfect a local organization, the potato growers department of the Los Angeles County farm bureau, and will meet within a week or two and effect organization.

CUT TOPS OFF GLADIOLUS CORMS

The "Flower Grower" says:

It seems rather strange that the old time practice of leaving an inch or two of the stalf on gladiolus corms when cutting foliage from the corm should survive so long. Even at this late date writers recommend the leaving of more or less of the stalk on the corm.

As we have repeatedly pointed out there is absolutely no reason for leaving any part of the stalk attached to the corm after it is taken out of the ground. Cut it off at once and cut it off close.

WINTER VEGETABLES

The other day the Cultivator vegetable man ventured into a Japanese district which grows a variety of produce for local consumption and city markets. Several crops were being planted in one field, cultivated in another, and harvested in a third, so that the crops are always on the market. In an area of a mile square these vegetables were growing: Beet, cabbage, carrot, cauliflower, kale or Chinese cabbage, lettuce, onion, parsley, parsnip, radish and spinach. These you may grow in your winter garden.

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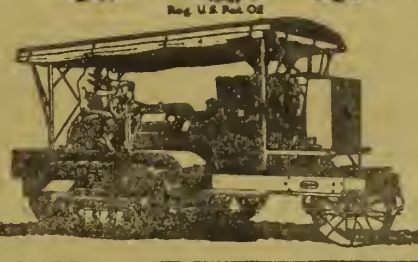

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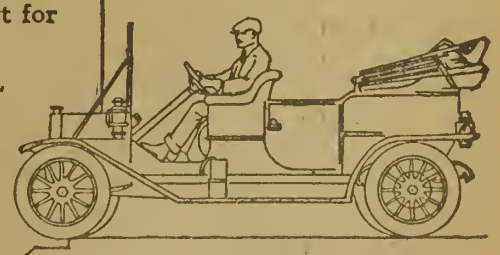

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120 A. MISSOURI FARM, $8100; PR. HORSES, 27 head stock, 3 blooded Poland China sows, poultry, many acres crops, all included; 100 acres productive tillage and alfalfa; woven-wire-fenced pasture, wood, timber, 100 apple, 50 plum, 50 cherry trees. Good house, big barn, granary, smoke house, etc. Good management should net $2000 to $3000 annual profit above living expenses. Owner with another big farm cannot handle well. $8100, part cash, gets all. Details page 87 Strout's Farm Bargains 23 States; copy free. STROUT FARM AGENCY, 831 A G, New York Life Bldg., Kansas City, Mo.

Prune and Apricot Orchards for sale, all sizes; full bearing, well located, with improvements, for $1,500 to $2,000 per acre. DAIRY RANCH 170 Cows, 432 acres leased land, near town and depot. 70 ACRE MOUNTAIN ranch land; good; 1,000 cords oak wood, $40 per acre. 51 ACRE best pear land, house, barn, lots of water, good location; $375 an acre. Address John G. French, Santa Clara, California.

Will Sell 80 Acres undeveloped from my 320 acre alfalfa, pear and apple ranch in Antelope Valley, 8 miles east from Lancaster, identically the same soil and water conditions and adjoining the 240 acres now developed; 70 to alfalfa, 20 to apples and 10 to pears, balance to barley, kaffir and rye; 28 foot water lift, rich silt soil. See or write W. B. Stirdivant, 909 Baker-Detweiler Bldg., Los Angeles.

Snohomish County, Washington — 6000 acres of the finest dairy, berry or general high grade farm lands in the northwest; rapidly improving section; no drouths, bumper crops; tracts, 1 to 80 acres; ten yearly payments. This is your opportunity. Send for literature. Brownell Land Co., Birmingham, Washington.

For Sale—Eighty-acre alfalfa dairy ranch in heart of orchard district, two miles from Hollister, including forty milk cows, 28 heifers, four work horses, 150 tons alfalfa hay, 6-inch centrifugal motor-driven irrigation plant, 60x90 barn, modern house, machine shop and other buildings. Address, Owner, Geo. P. Merritt, Hollister, California.

For Sale—Bearing Avocado orchard of 2½ acres, near to North Whittier Heights. Best of soil. A fine home site with commanding view. Close to two boulevards. Circumstances make it necessary to sell. For particulars inquire of A. B. Williams, owner, Citizens Trust and Savings Bank, Los Angeles.

For Sale—80 acres 2 miles east of Earlimart in Tulare county. Domestic well is only improvement. Splendid soil in settled section. $90 an acre. W. F. Marks, 226 So. Main St., Los Angeles. Phone Main 1499.

Fine Alfalfa Land Northern Los Angeles County, easy water lift, $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

Best Land Buy in the State—For particulars and description refer to this column of Cultivator of November 8th and write: Wm. H. Overholtzer, Coachella, California.

For Sale—Relinquishments from $50 to $1,000, also well drilling rig for sale or lease. Proven water district, fine opportunity for contract water well work. A. C. Vestal, Wagner, California.

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Nursery Stock. Apples, pears, peaches, cherries, prunes, plums, berries, etc. OURS IS MAIL ORDER SYSTEM. IT SAVES YOU MONEY. Write us now for Planters' list. 20 years in business. Carlton Nursery Co., Carlton, Oregon.

Wanted—Black Walnut seedling nursery. Will buy or graft on shares. Have my own sclons, Eureka and Placentia Perfection. The Walnut Nursery, W. A. Litten. Prop., Whittier, California. Phone 6294.

Wanted—1000 or more seed nuts of California Black Wainuts, also 200 Placentia Perfection Walnut Trees on black walnut roots. W. E. Hyer, Del Mar, California.

For Sale—3000 select orange trees. Also 3000 lemon trees; first class trees; 20,000 seed bed stock. A. R. Rideout, Whittier

For Sale—Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—3500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

CATTLE

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 600 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—20 Head Registered Holsteins bred to King Riverside Mead, 1003 lb. bull. A. B. Comfort (owner), Guernsey, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

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White Leghorns, chix and hatching eggs also a few cockerels from Curtis' heavy layers. We spare no expense to produce heavy layers with strong vitality. Any chick is good enough for some but the progressive poultryman demands the best. Spring orders are being booked now. All our chicks are hatched from eggs laid in our own yards. O. B. Curtis and Son, Gardena, California. Route 1, Box 28.

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POULTRY

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Weaver's Poultry Ranch—15 years a breeder of White Leghorns for egg production on a commercial scale. Just now some strictly A-1 March cockerels at $5 each, or lots of six for $25. Address Weaver's Poultry Ranch, 522 Chestnut Avenue, R. D. 1, Box 990, Los Angeles.

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For Sale—Caterpillar, two 75 horse power Holts, bargains. C. A. Myers, 1119 Haas Bldg., Los Angeles.

For Sale—Neilson Tractor in good condition. Mrs. Lena Clendenon, Palms.

LIVE STOCK

BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

For Sale—70 head of thoroughbred Cotswold sheep, year clip, 16 pounds; 14 head Bucks, March, 1919; 17 Ewe lambs March, 1919; 39 head varying 4 years. Will sell all at $50 a head. Young ones will average 85 to 90 pounds apiece. Edward Myer, Orland, Calif., R.F.D. Box 32.

For Sale—One Standard Bred Jack or will exchange for span of young pure bred Percheron mares and pay difference. Will trade for cattle. Chas. Hubbard, Box 96, Riverdale, California.

Angora Goats for Sale—150 fine bred does. Price reasonable. C. P. Bailey & Sons Company, San Jose, California. Importers, Breeders of Angora Goats and Persian Sheep.

Hardy Northern Grown Angora Goats make best foundation flocks. Write for prices. Porter H. Pleasants, Willow Ranch, California.

For Sale—Registered Belgian stallion. Also grade horses. Apply Newport Ranch, Ethanac, California.

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MISCELLANEOUS

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How many times have you wanted to make a purchase or purchases of machinery, household goods, wearing apparel and numerous other articles, but owing to the rush of work on hand, the expense of railroad fare and the inability to locate the article wanted, you have had to abandon the idea of purchasing. In order to save the farmer this expense and loss of time the Farmers Supply House have opened a mail order department and orders will be taken and filled for any kind of an article at a saving of from 10 to 25 per cent on purchase price and guaranteed satisfactory. Goods will be properly packed and shipped by express C. O. D. or by freight with sight draft bill of lading attached. Save this advertisement for future reference.

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Select Natural Red Leaf Tobacco; from grower to consumer. Sixty cents pound post-paid. Ideal for smoking and chewing. Reference Bank Sharon. C. D. MITCHELL, SHARON, TENNESSEE.

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Boys You Can Make Money saving pumpkin seeds. Write for particulars. Bomberger Seed Co., Modesto.

If You Want to sell or exchange your property write me. John J. Black, 116 St. Chippewa Falls, Wisconsin.

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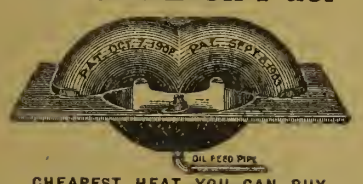

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DELIVER THE GOODS

Road builders are facing the problem of constructing roads which will sustain not only the heavy traffic of today, but the anticipated increase in traffic which will develop within the next two decades. The use of the motor truck for transportation, now in its infancy, seems likely to become as universal as the use of the passenger motor car; and looming up as it does as the most important element in the future movement of freight, must consequently be considered one of the principal governing factors in the design of modern highways.

These conditions exist in all the states, and far-seeing highway officials are undertaking to cope with the problem of building highways which will have the stamina to join with the heavy truck in "delivering the goods" of tomorrow.

The anticipated increase in truck traffic is responsible also for the construction of wider roads than would have been necessary if only ordinary team and automobile traffic were to be carried. On those routes where two lines of traffic can reasonably be expected an additional width of at least two feet is demanded, with a proportionate increase in cost. Should congested mixed traffic develop even greater widths may be demanded, and the widening of many of the main trunk line roads in the future will not improbably become necessary.

Household Department

THANKSGIVING DAY

Ah, on Thanksgiving Day, when from East and from West,
From North and from South, come the pilgrim and guest,
When the gray-haired New Englander sees round his board
The old broken links of affection restored,
When the care wearied man seeks his mother once more,
And the worn matron smiles where the girl smiled before,
What moistens the lip and what brightens the eye?
What calls back the past like the rich pumpkin pie?
O, fruit loved of boyhood!—the old days recalling,
When wood grapes were purpling and brown nuts were falling!
When wild ugly faces we carved in its skin,
Glaring out through the dark with a candle within!
When we laughed round the corn heap, with hearts all in tune,
Our chair a broad pumpkin—our lantern the moon,
Telling tales of the fairy who traveled like steam,
In a pumpkin shell coach, with two rats for her team.

—J. G. Whittier.

OUR THANKSGIVING

By Mrs. J. R. Kelley, Los Angeles

Dear Sister: Another Thanksgiving Day has come and gone. It was such a bright beautiful day that it seemed impossible to be anything but happy. The whole week has been so full that I am glad to have it over again in writing about it to you.

All the children were home as usual and we are a houseful now, I can tell you, 16 counting the new granddaughter, and she should be counted for wasn't she the center of attractioon all day!

I was up bright and early Monday morning and had the washing on the line by 9 o'clock and got the ironing done in the afternoon. Tuesday I made pie crust, carrot pudding and salad dressing. If you have never made carrot pudding you must try it. I will enclose recipe. In the afternoon I dressed the turkeys. They were birds to be proud of. Wednesday morning early Mrs. Field, who lives on the next ranch down the road came in. She said they were all going out to Thanksgiving dinner so she came over hoping to help me. We worked together like a well matched team. We made cranberry sauce, boiled sweet potatoes, cooked tomatoes for soup, made cottage cheese for salad and then made taffy apples for the little ones and sugared walnuts for all.

Having done all we could in the kitchen, we set the table. The centerpiece was a hollowed out pumpkin filled with fruit. We scattered autumn leaves over the cloth.

Thanksgiving morning found me busy as a bee getting the last minute things done. By the time the children arrived everything was shipshape.

The dinner went off just fine and altogether it was a lovely day.

Menu

Cream of tomato soup
Turkey
Mashed potatoes
Candied sweet potatoes, pickles, rolls
Creamed onions
Cranberry sauce
Pimento cheese salad
Pumpkin pie, Carrot pudding, sweet sauce
Coffee

We are looking forward to spending Christmas with you.

Love to you all. I remain as ever your loving sister, Mary.

Carrot Pudding

Two cups brown sugar, one cup grated raw apple, one cup grated raw carrot, one cup grated raw potato, one-half cup suet, one cup grated bread, one and one-half teaspoons soda, one-fourth teaspoon salt, one cup flour, spices, raisins.

A THANKSGIVING LETTER

By Minnie C. Childs, Tustin

Dear Betty: I am going to have a half dozen friends who have no kinfolks out here to eat tutrkey, Thanksgiving, and I want you to come and help to brighten the day.

I have so many blessings to be thankful for, but above all I place health and a heart content. Such wonderful flowers and sunshine as only California can produce are with us, and the country is beautiful now.

Well, I will tell you about my color scheme and dinner, so you will not be disappointed. Nothing elaborate, you know—home cooked food and home made decorations.

A long low center piece of yellow roses, small yellow paper baskets filled with sugared walnuts at each place. Oh, of course I shall use my best china and silver, and there will be plenty of good cheer but no frills.

Here is my menu:

Celery soup, Salted wafers, olives
Turkey with stuffing, gravy
Mashed potatoes, sweet potatoes
Mashed turnips
Nut and apple salad
Buttered dinner rolls
Pumpkin pie, cheese
Apples, oranges, figs, raisins
Sugared walnuts
Coffee

I was going to make some fudge, but will you believe it, Betty dear, the grocers will sell only two pounds of sugar to a customer, so no candy.

After dinner we will cast dull care to the winds and enjoy a ride to the beach.

Perhaps you remember mother's delicious dinner rolls; well, I am going to make plenty.

Here is the recipe just as mother made them:

Dinner Rolls

Two cups sweet milk, two tablespoons butter or lard, one square compressed yeast, one heaping teaspoon salt, two tablespoons sugar.

Put sugar, salt and shortening in milk, warming it to melt shortening, cool. Dissolve yeast in a little warm water and add to milk. Use flour to make a stiff sponge. Beat sponge for several minutes. Cover and set to rise. When light knead until very elastic and fine grained, taking care to keep the dough soft as can be handled. Cover until light, knead very little and roll on molding board; roll out, and cut with round cutter. Dip one edge in melted butter and fold over. Let rise again and bake in hot oven. If rolls are wanted for dinner at noon let the sponge be set over night. If for the evening, set sponge in the morning.

This recipe has been a prize winner wherever used. Try it.

Come early, Betty dear. As always, Minnie.

Nut Roast

One cup toasted bread crumbs, one cup nut meats chopped, one egg, one small onion, one teaspoon salt, two cups hot water. Mix dry ingredients, then add water or milk, lastly well beaten eggs. Turn into well greased pan and bake in moderate oven 30 minutes.

THE HOME THANKSGIVING

By Mrs. A. C. Pickett, Riverside

Even President Wilson's pocketbook will be severely taxed if he gives away the customary number of turkeys this year. Chicken is not cheap, but roasted in exactly the same way as turkey it often tastes better.

If we are on sugar rations we may have to doctor our cranberries with soda, but have them we must to give the correct color to the feast. We can make fine pumpkin pies without eggs and even camouflage green tomatoes into mince meat.

However, some of these subterfuges remind me of the beggar's stone soup in Aesop's Fables. With turkey or chicken, mashed Irish, baked sweet potatoes, cabbage salad, maybe olives or pickles, celery, white bread, Boston brown bread, pies, nuts and raisins, we have spelled genuine Thanksgiving atmosphere. Appetites will be satisfied without the added dishes which have multiplied with the years until some weary mothers dread the day, and the stuffed family has no disposition to be thankful after a many course banquet.

For many years it was our custom to have all the relatives who could come gather at one of the homes on Thanksgiving. Some lonesome or homeless guest was often included. To make the task less arduous for the

hostess the work was divided. One brought the turkey, another the pies, etc. Some set and decorated the long table ,and all made quick work of the "clearing up" and dish washing.

Our dinners were served not often later than 1 o'clock. We did not want to wait until the children were famished, then uncomfortable and cross from a surfeit of good things. If the guests chose to linger for the evening they expected nothing to eat requiring a set table or dishes. Apples, popcorn, doughnuts or a foraging trip to the pantry were permissible.

Many of our group are scattered now, many gone from our earthly sight forever, but the memory of happy Thanksgiving days from my early childhood up remains a precious legacy. It is the habit with some families to take their Thanksgiving dinners at a hotel or cafeteria. It saves work but not expense, and I doubt if the memories in these cases will have the same flavor as those of the simple, old fashioned home dinners. For these I plead. A happy childhood and youth is one indestructible treasure we should make every effort possible to bequeath to our children.

A THANKSGIVING MENU

By Linda W. McNeil

Tomato cream soup, wafers
Roast chicken, dressing and gravy
Mashed white potatoes
Glazed sweet potatoes
Crabapple pickles Grape jelly
Pumpkin pie Cheese
Fruit pudding, caramel sauce
Apples Walnuts
Coffee

While this menu is planned for farming people and its aim is to utilize home grown products, so reducing the cost to its lowest terms, it is quite tasty and good enough for any family, city or country. Turkey may be substituted for chicken if one has them or cares to go to the expense, but the chicken is quite as good and what is lost in name is made up in cost.

Dressing

This is the most satisfactory manner of making dressing I have ever tried:

Slice the bread and dry on pans in the oven. When crisp, but not brown, put through the food grinder. At the same time add onion and whatever seasoning you use and grind together. This mixes it evenly. Add cold water to make of the proper consistency and plenty of any clean, sweet fat or dripping. If the chicken is very fat, try out the internal fat and use for the dressing. Stir with a fork. If handled properly you will have a soft, crumbly, delicious dish and not the pasty, soggy mass which so often passes under the name of dressing.

THANKSGIVING DAY AND DINNER

By Gertrude Coble, Ripon

First of all let me tell you that our Thanksgiving dinner this year is to be a sort of community affair, that is, three families living close together are pooling their raw materials and we three mothers intend to turn them into eats (as the children are saying) for the dinner. The pies, etc., which can be fixed the day before we plan to make at our own homes, but the turkey and other things which must be cooked Thanksgiving morning will be cooked in the big range at the home where the dinner will be eaten.

The children have planned several unique games for young and old to take place both before and after the dinner and have promised to have the chrysanthemums for our decorations all ready the night before.

Our menu is as follows:
Fruit salad
Roast turkey, sage and onion dressing
Corn, String Beans, Peas
Milk gravy, White bread
Celery, Cranberry jelly, Pickles
Pumpkin pie, Coffee, Nut cake
Apple sherbet

Then in addition we intend to have a big dish of apples, nuts and candy.

Fruit Salad

To make the salad take an equal amount of apples and celery chopped fine, one-fourth as much chopped banana and nut meats, mix together and top with mayonnaise dressing.

Apple Sherbet

For the apple sherbet we take six large apples, peel, core and slice. To them add one cup of sugar, a stick of cinnamon and the grated rind and juice of half a lemon. When tender remove cinnamon stick and press apples through colander. When cool add two eggs beaten stiff, two cups of rich sweet milk, a half a cup of sugar and freeze slowly.

MY IDEAL THANKSGIVING

By Mrs. L. E. Carlton

I would go to church in the morninging, perhaps a tradition or habit, but I love the Thanksgiving service; it takes me back in memory to mother and home. Then I would invite a friend or two who would have no place to go for dinner and would otherwise be lonely. As we live moderately and have no servants I could not care for more.

I would serve a fat roast rabbit or hen of our own raising, as turkeys are a luxury in these days of high cost of living.

In the afternoon I would take these friends for a drive in the back country where nature reigns supreme, where the noise of the city cannot be heard, where God seems nearer. This is my ideal Thanksgiving day.

FOR THANKSGIVING AND THE DAY AFTER

After a nice plump turkey has been dressed, salt and let remain over night. Next morning place in a hot oven, pour on a pint of boiling water and baste often when necessary. Bake from three to four hours. For the dressing use one quart of light bread and cracker crumbs, one egg, beaten; one tablespoon of butter, one teaspoon of sage; season with pepper and salt. Moisten with turkey broth, place in a buttered dish and brown lightly. Serve with celery and cranberry sauce.

Turkey Croquettes: To a pint of minced turkey add one-fourth cup of bread crumbs, two eggs and sufficient gravy to moisten all. Season to taste and make into little croquettes, dip into beaten egg and then in cracker crumbs and fry a delicate brown.

Turkey Casserole: Cook one cupful of rice in plenty of slightly salted boiling water until tender, then drain in a colander and line the bottom and sides of a three pint mold with it, reserving sufficient to cover the top.

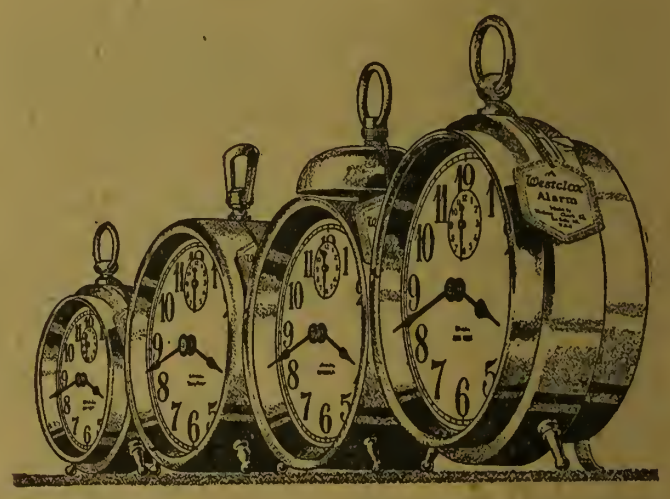
How You Dread Wash Day!

WE are talking to you, Mrs. Farmer. And we want to help you. You have the meals to get for the men folks on wash day the same as every other day—and there are the children to be looked after as usual, as well as your regular housework and chores. Even without these added tasks, the family wash is usually enough to break any woman's back and to wear her out generally. Working in the fields and around farm machinery makes dirty clothes — as you well know.

An **International Kerosene Engine** — 1½-h. p. size — will take the hard work and backache out of the family wash for you as well as removing all of the dirt just as efficiently as you could do it yourself. You need a power washer and one of these little engines just as much as your husband needs a mower or grain binder. He doesn't cut the hay and grain with a sickle or scythe — modern machinery has taken the hard work and backache out of these tasks for him. So you are certainly entitled to an engine and power washer to do as much for you.

And between times the engine will churn the butter, turn the cream separator, shell corn for the chickens, turn the grindstone, pump water, saw wood and handle other chores, saving work for the whole family. Write for a descriptive catalogue so that you can show your husband just the engine you want. There are three sizes — 1½, 3, and 6-h. p.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA INC.
BILLINGS, MONT. CRAWFORD, NEB. DENVER, COLO HELENA, MONT
LOS ANGELES, CAL. PORTLAND, ORE. SALT LAKE CITY, UTAH
SAN FRANCISCO, CAL SPOKANE, WASH.



Westclox

REGISTERED U. S. PATENT OFFICE

WHEN you wind and set Big Ben at night, you put an inexpensive clock on the same job a high-priced watch held down all day.

The responsibility is even greater! Your alarm not only must keep time but it must call you on time.

Westclox are good timekeepers and alarms combined. They're handy, dependable household clocks. More than one in a home is getting to be the rule. Several clocks save many steps.

We're doing our best to meet the big demand for Westclox. But we must keep a close eye on quality. For it was quality that created this demand.

Western Clock Co.—makers of Westclox
La Salle & Peru, Ill., U. S. A.

The Cultivator Patterns

BE SURE TO SEND SIZE

2937. Set of Toys. Cut in one size. It will require ⅝ yard of 24 inch material for either toy. Price 10 cents.

2655—A Serviceable Costume. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5 1-4 yards of 44 inch material. Width of skirt at lower edge is about 2 yards. Price 10 cents.

3057. Girls Dress. Cut in 4 sizes: 4, 6, 8 and 10 years. Size 8 will require 3⅞ yards of 27 inch material. Price 10 cents.

2670. Misses' Dress. Cut in 3 sizes: 16, 18 and 20 years. Size 18 requires 5⅝ yards of 40-inch material. Width of skirt at lower edge is about 2½ yards, with plaits drawn out. Price 10 cents.

3060. Ladies Coat. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 3 3-8 yards of 44 inch material. Price 10 cents.

3054. An "Easy to Make" Apron. Cut in one size, medium. It will require 1½ yard of 27 inch material without the stringa. Price 10 cents.

3055. Girls' Dress. Cut in 4 sizes: 4, 6, 8 and 10 years. Size 8 requires 3 1-4 yards of 36 inch material. Price 10 cents.

3039. Ladies Dress in Overblouse Style. Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 5 yards of 36-inch material. Width of skirt at lower edge is 1¾ yards. Price 10 cents.

CATALOGUE NOTICE

Send 10 cents in silver or stamps for our Up-to-Date FALL AND WINTER 1919-1920 CATALOGUE, containing 550 designs of Ladies' Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various, simple stitches) all valuable hints to the home dressmaker.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest Chicago styles, all pattern orders are filled in Chicago. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
California Cultivator
Los Angeles.

Chop fine one pint of cold turkey and season it to taste, then add a pinch of thyme, one tablespoonful of finely minced onion, one well beaten egg and one cupful of fine bread crumbs. Add sufficient gravy to moisten and press it in the center of the mold. Spread the remainder of the rice over the top and steam for one hour. Turn out carefully on a heated dish and serve with tomato or oyster sauce.

Potted Turkey: Free the remains of a cooked turkey from the skin, bone and sinew and put one pound in a mortar with one-half pound of cold boiled tongue. Pound the whole to a smooth paste, adding a generous lump of butter, with one-half teaspoonful each of powdered mace, salt and pepper and a pinch of cinnamon. When it is quite smooth and well mixed press it into small pots, cover with clarified butter and store in a dry, cool place.

THIS WEEK'S PATTERNS

Style 3060 is an exceptionally practical one for separate coat of jersey cloth. The cut of the back is new and exceedingly good for giving the straight back line so much desired. The hat shown on this figure is the most popular of this season's styles.

The dress pattern at lower right hand corner shows a becoming collar which is again in style and is shown in many of the expensive and exquisite Paris models. Of course it has to be cut right and fitted right and wired right to be right.

The little girl's dress in 3057 shows the simple and very much used trimming of two or three lines of heavy silk or wool. The yarn or thread is simply run through the material with long even stitches with shorter intervals. Handwork is in greater favor than ever and it is all of the quick and easy kind that is very effective and lasts as long as the garment which it adorns. The work dress 2655 is eminently satisfactory in cotton or wool. With the addition of a fresh white collar it becomes a dainty afternoon dress. The apron opposite is exceptionally good.

O loving Source of all,
We on thy great name call
And give thee thanks.
With grateful hearts we raise
Our joyful song of praise.
Thou who hast blest our days,
We give thee thanks.
Lord of the sun and rain,
Lord of the fruit and grain,
We give thee thanks.
For thy rich harvests stored,
For plenty on each board,
For all thy bounties, Lord,
We give thee thanks.
For life and strength and health.
Best of all earthly wealth,
We give thee thanks.
For these our friends so dear,
Gathered from far and near
This feast day of the year,
We give thee thanks.

CONTEST PRIZE WINNERS

There are three instead of two prize winners. The Cultivator has taken the liberty of dividing the $2 first prize and making three awards. It was impossible to single out a best one among these three. The winners are:

Linda McNeil, $1 cash; Mrs. J. R. Kelley, $1 cash; Minnie C. Child, $1 cash; others whose leters are published, one year's subscription to California Cultivator.

CHRISTMAS STORY CONTEST

This will be for the younger readers of the household page, the boys and girls 16 and younger. What part of Christmas do you like best, that is really and truly the jolliest and happiest? Is it helping cut the tree and string popcorn and make candy and put the tinsel on the tree? Is it counting over the pennies and nickles and dimes you have been saving up for months and months and planning what you will get for mother and father and Jack and baby? Is it the Sunday school Christmas tree? Is it Christmas morning when you find your stocking full of wonderful things?

Continued on Page 709.

YOUR party, dance, social or club session calls for refreshments—and there's one unfailingly successful beverage—Ghirardelli's. Creamy, delicious, fragrant—it's an instant favorite with or without cakes or sandwiches. Better than all, Ghirardelli's is made in a jiffy!

Never sold in bulk—but in cans only.
In ½ lb., 1 lb. and 3 lb. sealed cans—
at the store where you do your trading.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.
Since 1852 San Francisco

(F4)

GHIRARDELLI'S
Ground Chocolate

Comfortable warmth

Filled with Pearl Oil, a good oil heater gives comfort without dust or dirt. Oil consumed only when needed; portable, economical.

Pearl Oil is the ever obtainable fuel, refined and re-refined to be pure and clean burning. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.

STANDARD OIL COMPANY
(CALIFORNIA)

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Los Angeles Markets

Los Angeles, November 19, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 66 cents.

Dairy Exchange prices last week on extras:

Nov. '19 ...	12 66	13 66	14 66	15 ..	17 66	18 66

CHEESE

Brokers' prices:

California, fresh, lb., 32; price to retail merchants, 32@34.

EGGS

Fresh extras, Produce Exchange closing price, 75 dozen; case count, Produce Exchange closing price 72 dozen; pullets, Produce Exchange closing price 62 dozen; pewee pullets, 53.

Dairy Exchange prices last week on extras:

Nov. '19 ...	12 76	13 74	14 74	15 ..	17 75	18 75

POULTRY

Prices to producers: Hens, lt. 32; heavy, 33; colored over 4 lbs., 36; broilers, 45@47; fryers, 33; roasters, 33; old roosters, 19; ducks, old, 23; ducklings, 30; ducklings, Pekins, 3½ up, 33; geese, 25; turkeys, live, young tom, 37; dr., 43; hen turkeys, live 35; dr. 41; squabs, 45@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 14.00; 150 to 175 lbs., 14.50.

Cattle (on foot, gross weight): Steers, good, 10.00@10.50; medium, 9.00@9.50; heifers, good, 8.00@8.50; fair, 7.50@8.00; cows, fair to good, 7.50@8.00; bulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00@13.00; 175 to 225 lbs., 10.00@11.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@14.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock November 18, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate. New stock, Stockton; Burbank, fancy, 3.50@3.75 per cwt.; choice, 3.20@3.25; Russetts, 3.50@3.60. Local, lug boxes, mostly 1.25.

Carlot sales—Closing prices Monday, demand and movement good, market strong, no change in prices. Stockton: Burbanks, sacked per 100 lbs., fancy 3.25@3.50; choice, 3.15@3.20; Idaho: Russets, sacked cwt. fancy mostly 3.25; choice, no sales. (Sales to 5 p. m. Monday.)

Sweet potatoes—Lugs, 75@85; per cwt., 2.35@2.50.

Carlots: Demand slow, movement moderate, market slightly weaker. Wide range in quality and condition. Many rolled unsold. Lug boxes, Stones wrapped greens and pinks, straight cars, 1.60@1.75; mixed cars 1.75@1.90.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, lug 1.25@1.40; cwt., 4.50@5.00, some low as 4.00; Yellows, mostly 5.00, some low as 4.50. Lug boxes, White Globes, 1.25@1.40, few 1.10; Yellows, 1.50@1.60.

VEGETABLES

These are the actual prics obtained November 18, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans, green, lb., 14@16; best, 18@20; Limas, 13@14½.

Beets, doz., 50@60; sk., 2.50.

Cabbage: Per lb., 1½@2; cwt., 1.75@2.00, mostly 1.75; sacks, 1.25@1.35.

Carlots: Demand and movement moderate, market stronger, prices higher. Winningstadt and Cannonball 35@38, per ton; 1.75@1.85 per cwt.

Carrots, doz., 35@40; lb., 3; sk., 1.25@1.50.

Cauliflower: Local stock, per dozen, 1.75@2.00, mostly 1.75@1.85; field crates, best, 3.10@3.50; fancy, high as 4.00; others, 2.75@3.00.

Carlots: Demand and movement good, market firm. Crates, Snowball and Pearl, in straight cars, 1.90@2.00; mixed cars, 2.00@2.15, mostly 2.10.

Celery: Local stock, per dozen bunches, 90@1.00; extra fancy, 1.00@1.25; crates, 4.00@4.50; fancy shipping stock, 4.50@4.75; celery root, 1.10 per dozen.

Cucumbers: Local stock scarce, lug boxes 2.50@3.00; some best high as 3.50; 1.00@1.25 per dozen.

Carlots: Demand moderate, movement increasing, market steady, little change in prices. Crates, Golden Heart 4.50@4.60, few high as 5.00 per dozen; 65@75, mostly 75.

Chicory, dozen, 45@50.

Corn: Roasting ears, lug of 3 dozen, 90@1.15; mostly 90@1.00.

Eggplant, 4@6; mostly 5@5½.

Peas, local, lb., stock scarce, 11@14.

Lettuce: Local stock, market stronger. Per dozen, 80@1.00; crates, 2.75@3.00; shipping stock, crates, 3.00@3.50.

Carlots: Demand active, movement moderate, market strong. Supplies increasing. Wide range in quality and condition, generally fair. California crates, Los Angeles or New York market (Iceberg), straight cars 3.50@3.90, mostly 3.75; mixed cars 3.75@4.25, mostly 4.00@4.25.

Peppers: Lug boxes, wide range; Bells, 80@1.00; Chilis, best, 50@60; poorer, low as 35; shipping stock, high as 1.00; per pound, best Chilis, 5@7; Bells, 8@9; others, 5@7.

Pumpkins, 1½@2 lb.

Parsnips, lug, best, 85@1.00, others, sk., 2.25@2.50; dozen, 50.

Romaine, doz. 40@50.

Rhubarb: Local, box, 1.25@1.35.

Squash: Summer, lug, 90@1.00; Hubbard, 1½@2¼.

Spinach, doz., 35@40.

Tomatoes: Lug boxes, ripe stock, best 90@1.00; poorer, 70@80; shipping stock, 1.25@1.40.

Turnips, doz., 40@45; others, 30@35.

FRUITS

These are the actual prices obtained November 18, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California: 4-tier, Bellefleur, 1.85@2.00, mostly 1.85@1.90; 3½@4½ tiers, 1.75@1.85; loose, 4@4½ per lb.; Delicious, boxes, 3.50@4.00; loose, 5@6 per lb.; Baldwins, per lb., 4@5; Newton Pippins, 4@5. Northern; Jonathans, extra fancy, 3.10@3.25; fancy, 2.85@3.00; choice, 2.50@2.60; loose, 6@7 per lb.; Spitzenburgs, extra fancy, 3.10@3.25; fancy, 2.75@3.00; per lb., 6@6½.

Bananas, 10@11; mostly 10.

Cranberries: Barrels, 15.00; boxes mostly 5.00; lb., 15@16.

Grapes: Local and northern, per lb.: Tokays, 9@11; best, high as 9; Malagas, 9@11; Black Cornichons, 7½@10; Red Emperors, wide range, 6@9.

Nectarines, lb., best 6@7, others, 5@6.

Pears: Northern Bartletts, No. 1, 8@9; No. 2's, 4@6 per lb.; lug boxes, 2.00@2.50; best packed boxes, 3.25@3.50.

Persimmons, lb., 8@14; mostly 9@10.

Pineapples, lb., 19@20.

Pomegranates, lb., 6½@8½

Quinces, Local lug, 1.10@1.35; lb., 4@5

Watermelons: Local Chileans and Klondikes, large, 1@2 lb., medium 1 small ½ lb.

Lemons: Fancy packed, 4.75@5.00; loose, 4.00; juice, 2.50. Local: Packed, 3.50@4.00; best, 4.00@5.00; loose, 3.00@3.25.

Oranges: Valencias, medium fancy 4.50@5.00; best brands, 5.50; local pack, 2.50@3.00.

Grapefruit: Arizona: Seedless, per box, 4.25@4.50; seeded, 4.00.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.

No. 2, 26.

Diamond Brand Buds, 34.

Golden State Buds, 34.

1918 No. 1 price was 28; fancy buddes 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14¼ baby, 13.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	21.00@24.00
Barley	17.00@22.00
Alfalfa	20.00@25.00
Fertilizer Bean Straw	9.00@11.00
Barley Straw	9.00@11.00

San Francisco Markets

San Francisco, November 18, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	67
Firsts	Nominal

Prices extras last week and year ago:

Nov. '19 ...	11 ..	12 68½	13 67½	14 67½	15 67	17 67
'18 ...	..	61	61	..	64	..

Rcts. five days ending Nov. 17, 1,846 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	30@35½
Cal. Y. A.	38
Ore. Triplets	34
Jack, full cream	33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	86½
Extras, Pullets	68
Undersized	65

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago:

Nov. '19 ...	11 ..	12 83	13 80	14 80	15 82	17 86½
'18 ...	..	..	80	..	77½	..

Rcts. week ending Nov. 17, 111,060 doz.

POULTRY

Wholesale prices are:

Leghorn, 30@32; colored, 34@35; roosters, young, 27@30; old, 20@22; broilers, 43@46; fryers, 33@34; turkeys live, 38@40; dressed, young, 45@47; old, 40@45; geese, 23@25; ducks, Indian Runner, 18@20; Pekin, 24@26; squabs, 50@60.

Belgian hares, live, 16@17; Jack Rabbits, doz., 1.50@3.50.

LIVE STOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10½@11; do, 1,200 to 1,400 lbs., 10@10½; do, second quality 8½@9; do, thin, 6½@7½.

Cows and heifers: No. 1, 8½@9; second quality, 7@7½; common to thin, 4¼@6.

Calves: Light weight, 11; medium, 10. heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½

Sheep: Wethers, 9@9½; ewes, 6½@7

Hogs: Hard, grain-fed, 100 to 150 lbs., 15½; 150 to 225 lbs., 16; 225 to 300 lbs., 15½; 300 to 400 lbs., 14½.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs., Rivers, fancy 2.90@3.00; choice, 2.75@2.90; Oregon Gems, 3.45@3.60; Sweets, lb., 3½@4. 2.75@2.90; choice, 2.50@2.75; sweets, 3½@4 lb.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 4.00@4.25; choice 3.75@4.00; Yellow, 3.75@4.00; Whites, 3.00@3.25; Garlic, lb., 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 12½@15; Lima, 12½@13

Carrots, per sack, 1.00@1.25.

Cauliflower, doz., 1.25.

Cabbage, doz., 40@55.

Celery, doz., 25@40.

Cucumbers: Per box, 50@90; hothouse, 2.00@2.50.

Corn, sack, 2.00@2.25.

Eggplant, lb., 8@10.

Lettuce, cr. of 5 doz., 1.25.

Peppers, Bell, lb., 8@10; Chili, lb., 5@6.

Peas, lb., 12½@18.

Pumpkins, per sack, 75@1.25.

Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 1.00@1.50; L. A. cr., 1.75@2.00.

Squash: Summer, cr., 2.00@2.25; Hubbard, sk., 1.25@1.50.

Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:

Apples: Bellflowers, 1.75@2.00; Winter Bananas, 2.50@3.00; Newton Pippins, 2.15@2.40; Jonathans, 2.50@3.00; Jeniton, 2.00@2.50; Spitzenburg, 2.50@3.00 ch., fy., 3.00@3.50.

Avocados, small California, doz., 75@2.00.

Bananas, 8½@9.

Cranberries, 4.50@5.00 per standard box; barrel, 13.50.

Figs, double or single layer, 1.00@2.50 box.

Grapes: Malaga, 2.00@2.50 per box; Muscats, 2.00@2.50; Tokays, 1.25@2.50; Isabellas, 1.25@1.75 per crate.

Huckleberries, lb., 17@20.

Peaches: Sacramento 1.25@1.50 per crate; 1.00@1.50 per box; Cling, 1.00@1.50 per box.

Pears, box, 1.50@3.00.

Persimmons, box, 1.50@1.75.

Plums, 1.00@2.00.

Prunes: Fancy, 2.50@3.00; choice, 1.00@1.80.

Pineapples, doz., 4.00@5.00.

Pomegranates, 2.00@2.75.

Quinces, box, 1.00@1.50.

Strawberries, ch., 18.00@20.00.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 6.50@7.00; choice, 5.00@5.50; standards, 3.00@3.50; lemonettes, fancy, 3.25@3.50; others, 2.00@2.50; grapefruit, fancy, 4.00@4.50; choice, 3.00@3.50; oranges, fancy, 5.25@5.50; choice, 4.25@4.50; limes, 2.00 per crate; tangerines, 3.00 per crate.

ALMONDS

California Almond Growers Exchange opening prices

Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HONEY

Jobbing prices: Extracted, Water White, 20@22 per lb.; Light Amber, 15@17; Amber, 13@14.

HOPS

1919 contracts per lb. around 60@70.

RICE

Prices per 100 lb. bag:

California: Fy., 10.50; ch., 10.25; flour, 6.25.

BEANS, PEAS

Wholesale selling prices:

Beans: Per cental: Small White, 7.25@7.50; Large White, 6.50@6.75; Lima, 14.50; Baby Lima, 13.00; Pink, 6.75@7.00; Cranberry, 7.25@7.50; Blackeye, 6.00@6.50; California Bayos, 6.75@7.00; Mexican Red, 6.00@6.50; Red Kidneys, 11.50@12.00; Garvanza, 12.00@13.00; Tepary, 2.50@3.00; Kotenashis, 5.75, in bond.

Dried Peas: Old crop, green, lb., 7½@7¾.

DRIED FRUITS

Prunes:

Prune prices announcel by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s. 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.

Peaches:

Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾c; Muirs, 15c.

Choice yellows, 15½c; Muirs, 15½c.

Fancy yellows, 16½c; Muirs, 17½c.

Extra fancy yellows, 17¾c; Muirs, 18¾c.

Slabs, yellows, 14½c.

For "practically peeled" add 1½c per pound (any grade).

Prices above are all bulk basis.

For packing in 50 pound or 25 kilo boxes add 1 cent per pound.

25 pound or 12½ kilo boxes, all 1¼c per pound.

10 pound boxes, add 2c per pound.

Blue ribbon peaches packed 2 pound cartons, 12 per case, $10 per case.

Blue ribbon peaches packed 2 pound cartons, 24 per case, $10 per case.

Bakers' special, "practically peeled," 16¾c per pound, bulk basis.

Apples:

Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; fancy (in 50s), 23@23½.

Figs:

White: Cooking (in 50s), 15@16; choice (in 50s), 17@18; extra choice (in 50s), 19@20; fancy (in 50s), 21@22; extra fancy (in 50s), 23@24; bricks, 12 No. 10s, 1.60@1.67½; bricks, 24 No. 8s, 2.55@2.65; bricks, 50 No. 6s, 4.00@4.15; bricks, 70 No. 4s, 4.20@4.35; layers, No. 10, 2.50@2.80. Calimyrna: Cooking (in 50s), 19; choice (in 50s), 23; extra choice (in 50s), 24; fancy (in 50s), 26; extra fancy (in 50s), 27½; bricks, 10 1-lb., 2.75; layers, No. 10, 2.95@3.20. Black: Standard 14, choice 17@18; extra choice, 18@19; fancy, 19@20.

Pears:

Standard 20, choice 22½; extra choice, 24; fancy, 26@27.

Raisins:

California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package, 15; fancy, 16s, package, 15; fancy, 12s, package, 11¾; choice, 16s, package, 14½; choice, 12s, package, 11¾; bulk, fancy in 25s, 14¼; bulk, bakers, in 25s, 13½; bulk, Malagas and Feherzagos, in 25s, 13. Loose Muscatels: 4-crown, in 25s, 14¼; 3-crown, in 25s, 13¾; 2-crown, in 25s, 13¼; 1-crown recleaned, in 25s, 14. Seedless: Thompsons, 16s, 15½; Thompsons, 12s, 12⅞; Thompsons, bulk, recleaned, in 25s, 14½; Thompsons, bulk, bakers, in 25s, 15½. Bleached Thompsons: Choice, in 25s, sulfur, 18; fancy, in 25s, suifur, 18½; extra fancy, in 25s, suifur, 21; soda dipped, in 25s, 17¾; oil dipped, in 25s, 17¾. Suitanas, 16s, 15¼; Sultanas, bulk, in 25s, 14¼. Layers: 6-crown, flat pack, 20s, per box, 4.05; 6-crown, flat, 10s, per box, 2.20; 6-crown, flat pack, 5s, per box, 1.20; 4-crown, flat pack, 20s, per box, 3.20; 4-crown, flat pack, 10s, per box, 1.75; 4-crown, flat pack, 5s, per box, 1.00; 3-crown, tray pack, 20s, per box, 3.10; 3-crown, flat pack, 20s, per box, 2.95; 3-crown, flat pack, 10s, per box, 1.60; 3-crown, flat pack, 5s, per box, 95; clusters, 20-1s, cartons, 3.45; clusters, 12-2s, cartons, 3.80; clusters, 4-5s, cartons, 4.50; vineyard run, 100s, 13.00.

HAY

Under date of November 15, Scott-Magner & Miller says:

We quote today wholesale prices in carload lots as appear from dealers transfers upon the hay market—for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy wheat hay (light 5-wire bales)	22.00@24.00
No 1 Wheat or Wheat and Oat hay	19.00@23.00
Oat hay	18.00@20.00
No. 2 Wheat or Wheat and Choice Tame Oat hay	21.00@24.00
Other Tame Oat hay	18.00@21.00
Wild Oat hay	17.00@20.00
Barley hay	17.00@21.00
Alfalfa hay	19.00@24.00
Stock hay	14.00@17.00

Citrus Markets

Los Angeles, November 19, 1919.

Valencias are lower. Some spectacular sales are still made, but the quality of the general run of shipments is lowering and some days' prices have taken a material tumble. There are still some 1,300 or 1,400 cars to go. Navels are already going from Northern markets at a rate of five or six cars a day. Florida fruit is not of highest quality and a slight reduction in estimates of output is now made. The total from that state will be about 11,000,000 boxes.

Lemons in sight at Eastern markets are not far from 40,000 boxes. Demand for California's good.

Shipments

Shipment of oranges from Southern California to date since November 1, 1919: Oranges, 1,263 cars; lemons, 215; total, 1,478. To same date last season: Oranges, 26; lemons, 420; total, 446. Central California: Oranges, 48; lemons, 41; total, 89; To same date last season: Oranges, 143; lemons, 80; total, 223. Northern California: Oranges, 13 cars. To same date last season: Oranges, 8.

AT THE AUCTIONS

November 12

New York: 27 or., 3 lem. Val., 1.45@6.20; lem., 2.55@5.55.

St. Louis: 4 or., 1 lem. Val., 1.65@3.40; lem., 1.75@2.65.

Boston: 15 or., 2 lem. Val., 2.55@5.50; lem., 2.00@4.75.

November 13

New York: 18 or., 3 lem. Val., 2.50@7.65; lem., 2.50@4.65.

Boston: 10 or., 2 lem. Val., 1.60@6.00; lem., 2.15@4.10.

St. Louis: 2 or., 1 lem. Val., 1.80@3.45; lem., 2.05.

November 14

New York: 19 or., 2 lem. Val., 2.00@9.55; lem., 2.20@4.40.

Boston: 10 or., 1 lem. Val., 2.55@5.20; lem., 4.65@5.80.

St. Louis: 2 or. Val., 2.75@3.40.

November 17

New York: 37 or., 7 lem. Val., 2.15@9.35.

Pittsburg: 11 or., 2 lem. Val., 75@4.95; lem., 1.95@4.25.

Boston: 19 or., 3 lem. Val., 2.35@5.40.

November 18

New York: 23 or., 3 lem. Val., 1.90@7.30; lem., 1.20@3.95.

Boston: 13 or., 2 lem. Val., 3.00@6.75; lem., 4.05@5.65.

SAN DIEGO POULTRY ASSOCIATION

This organization, though in existence but three years, has made most rapid strides. It started in a small way, without expectation of becoming immediately strong, but it is now recognized as one of the most successful associations in the south end of the state. A capitalization of $50,000 has been authorized and the business has already developed beyond the capacity of the present plant. The officers are now negotiating for a tract of land belonging to the city, on a long term lease. The association now operates a warehouse and mill, in which is manufactured 200 tons of poultry mash per month. A total volume of about 500 tons of feed per month is handled. The phenomenal growth which the association has made is conclusive evidence of the valuable services it has rendered the poultry industry in San Diego

County. The present officers are: President, Edward M. Burnell; vice president, J. A. Butts; secretary-treasurer and manager, G. C. Keeney.

FRUIT GROWERS' CONVENTION

Continued from Page 689.

A seven mile auto trip was given the delegates by Chico people, the day's program being continued on the state land settlement farm at Durham. Judge Peter J. Shields called the convention to order.

Never since the dawn of history have there been such educational opportunities nor such permanent aid extended for human welfare as today. Could people of the East see the opportunities which exist in California with her agricultural outlook, her schools, homes, and social conditions there would not be sufficient standing room for those who would come.

Dr. Elwood Mead was introduced as teaching more than any other the true lessons of California's possibilities. Dr. Mead extended welcome in behalf of the settlers and referred to the fact that two years ago Durham was only a crossroads in which none were interested but today is visited by people of other states and nations as are but few sections in California. This because of the lessons it is teaching.

John P. Irish eulogized the Japanese. He said he realized the audience present was not in sympathy with his utterances.

The central thought in the last address of the convention by Dean Van Norman was that the laborer of today becomes the land owner of tomorrow, and he gave most serious and eloquent appeal to the young men of California to fit themselves to perform farm labor and to possess the land which had been given to their fathers and urged that it be not passed on to the alien.

Then came the resolutions.

A rising vote of thanks was tendered the people of Chico, of Oroville and of all Butte County for their hospitality.

"Whereas, California agriculture in great measure does now and must forever depend upon irrigation for best results, and we view with alarm the effort on the part of great public service corporations at times to utilize for power purposes an increasing proportion of the waters of the state, to the great disadvantage of agriculture; therefore, be it resolved, that, in the direct interest of 1,000,000 Californians dependent upon farming, and in the indirect interest of all, we insist that the right of agriculture to the use of water, whether stream flow or stored, shall be recognized and confirmed as superior to the right to use water for power, and to this end we instruct the legislative committee to watch all developments in order that such rights of agriculture shall be protected."

The state highway commission was asked to abate weed infestation which comes from highways bordered with some of our worst seed pests. In the words of the resolutions committee: "The state law for weed control must be considered by the state highway commission who may by force of example lead in upholding this law and thus make it easier for our county horticultural commissioners to enforce it on individual property."

Regret was expressed that Governor Stephens could not be present and thanks and appreciation for his telegram promising utmost protection for the agricultural industry.

Thanks were also extended to officials and the government of South Africa because of courtesies extended to Dr. Lounsbury in his search for beneficial insects.

Regarding the relations between nurserymen and orchardists: "Recognizing as we do that losses suffered by nurserymen from overproduction of nursery stock must at last be paid by fruit growers in increased cost of trees, therefore, be it resolved, that we pledge ourselves so far as we are able, through our various organizations, to make available to the nurserymen the knowledge of our needs for trees, as far as possible, in advance of planting, in order that the immense waste prevailing in previous years may be avoided."

"Whereas, this convention recognizes that the present salaries of the horticultural commissioners and of horticultural inspectors are wholly insufficient to maintain efficient officers in these important positions, therefore, be it resolved, that the legislative committee be instructed to endeavor to secure a reasonable increase of such salaries at the earliest possible date, since the work in each of these lines is suffering very seriously from such inadequate compensation."

"Resolved, that the legislation committee of the cooperative and other producers of California be requested by this convention to consider the necessity of the University of California establishing on an adequate scale a fruit by-products laboratory and experimental demonstration plant.

"We sugest that the committee, at a suitable time, take the matter up with Dr. Whitten, Dean Hunt and the board of regents."

It was resolved that experimental plants now under direction of pomologists in charge of viticultural investigations should be continued in California, "That we particularly request the purchase of two of the most important of these experimental plats, viz., the one situated at Fresno and the one at Oakville, Napa County, both of which are located in the heart of important grape producing areas, and we understand the leases covering these plats will soon expire. Work of a most important nature is already under way with the end in view of aiding our grape growers and this will be entirely lost unless these properties are purchased outright and properly equipped for the prosecution of this work under the most favorable and effective conditions."

CONVENTION NOTES

President Copeland and Secretary Durkee of the Chico Chamber of Commerce, were persistent workers for the comfort of the convention attendants. Chico was full but no one had to sleep in the park.

The three ring feature of the convention that held session last week in Chico, Oroville and Durham, gave variety and added to the interest.

Oroville entertained royally. It seemed as if all the autos in the town were in service and at command of visitors. Messrs Hornung, Meek, Ehmann and all the rest said: "What do you want? Name it and it's yours."

Oroville olives! Hornung's barrel is not so full as it was for those big ripe Missions sacrificed themselves to glorify Oroville.

jujubes by serving visitors at the delicious. Mrs. Beagle preached the gospel of more general planting of jujjubes by serving visitors at the gardens with the candied fruit.

City of Oaks and Maples has fall coloring like unto back East and the school children kicked up the leaves of red and gold much as did the kiddies of years ago back in New England or on the old Western Reserve.

The efficiency of organization was apparent in the work of Mr. Hecke's workers. Convention plans worked out according to program and Messrs. Taylor, Hoyt, Jacobsen, Smith, Strong and Reynolds aided at every opportunity.

The Normal School people under direction of Prof. C. M. Osenbaugh, gave cordial welcome and provided a most acceptable meeting place. The auditorium has splendid acoustic properties.

The report of the engineers of the Iron Canyon project, in effect that instead of bedrock they had found a bed of sand which might prevent the construction of the dam for the great storage reservior, caused a depression which all the other happy events of the week could not entirely dispel. The engineers still hope for some way of construction which will be safe. The possibilities of this natural reservoir site are so great that every effort will be put forth to overcome all obstacles.

The Japanese question was taboo so far as resolutions were concerned. Too bad!

Byron O. Clark, B. F. Walton, C. M. Burkett, John P. Irish and others of the old timers reminded of state conventions of a score or more of years ago.

Sypher's orchestra and other musicians added much to the pleasure of convention week. One of the most enjoyable features was several solos rendered by Arthur Winters. When it comes to pep and music with the punch the Sacramento chamber of commerce qquartet was especially fine and took off the honors on banquet evening.

The Durham Land Settlement furnished machines of the settlers and several came from Chico to give every convention attendants a trip amongst the settlement farms.

The possibilities from conservation were graphically shown by a mammoth relief map of the Great Central Valley located in the hallway of the normal building and explained in detail by Van Bernard, president of the Fourteen Counties Protective Association. The slogan of the association is "Hereafter we stick together." And the members are making good, which enables the officers to hold a line on legislation, especially to the end that homes and holdings are protected from flood waters.

Since apple growing began in the United States there have been no such prices as the fruit is commanding this year. The production will be near 24,000,000 barrels.

PUENTE, THE WALNUT CITY

That's the name they have given to their town, and it must be conceded that they have a right to it. On Tuesday, November 11, Puente celebrated Armistice Day with a big parade, nearly a mile in length, featuring very heavily the agricultural crops of the district. Even Covina sent a truck loaded with 50 boxes of Valencia oranges, also a half dozen decorated autos. A large tent housed a chicken and goat show and under a mammoth tent was an auto and tractor exhibit that proved the main attraction. The attendance was said to have exceeded 15,000 and 4,400 pounds of boned meat had been barbecued to feed the hungry hordes, and it was all eaten. A street dance closed the Walnut City's "grandest day.'

$8,000 Worth of Walnuts

Tractor and trailers of J. W. Larmer with load of walnuts in Puente farm products parade.

CHRISTMAS STORY CONTEST

Continued from Page 707.

Is it the Christmas dinner with grandfather and grandmother and the cousins coming for all day? Is it the walk or the ride or the games afterward? Whatever it is that you, your own self, like best about Christmas, tell the rest of us in a letter of not more than 300 words and send it to Household Department, California Cultivator, Los Angeles, by Saturday, November 29. That just leaves a week to write it in, so put on your very best thinking cap right away.

The letters will be published in the household department on Saturday, December 13, so there will be plenty of time to plan on what you are going to do with the prize you win. Usually the Cultivator does not send the prizes till the first of the month following the publishing of articles, but this time is an exception for of course you want to use the prizes for Christmas.

Prize Offer

For best letter, $2 cash; for second best, $1; for all published, one year's subscription to California Cultivator—and you know that would cost just $1 and will make the finest kind of present for father or your teacher or some boy or girl who has joined a pig club.

Write on one side of paper, not more than 300 words, sign name and address and name and address of the one to whom you wish subscription given if you win a subscription prize.

COUNTY HORTICULTURAL COMMISSIONERS

Continued from Page 684.

Fred Brosius, Sacramento, secretary.

Attorney R. W. Harrison, assistant to Attorney General Webb, answered legal questions which were presented by commissioners. They touched all points from the legal rights of the most debased of bugs to those of the consumer of a box of apples.

The employes of the Fallbrook Growers' Association held their annual dinner at the cannery on Thursday, November 13. There was a large gathering and a very pleasant evening was spent.

NORTHWEST SHORTHORN SALES

Col. H. C. Crancke, of Nez Perce, Idaho, one of the well known auctioneers of that section, reports a keen demand for pure bred beef cattle in the Northwest. Col. Crancke writes that 55 head in the Schildewan & Hawley sale averaged $355; Nate Holmes, Buhl, Idaho, sold 45 head for an averaged of $307; C. A. McMasters, Twin Falls, Idaho, sold 55 head for over $547 each; W. G. Cordiner, Walla Walla, Washington, sold 40 head for $641, said to be record price for Washington. Forty head of Herefords in a British Columbia sale averaged $325.

INTERNATIONAL GRAIN SHOW

The International Stock, Grain and Hay Show will be held at Chicago November 29 to December 6.

WEATHER REPORT

San Francisco, California, November 15, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Tem. Max.	Min.
Eureka	.16	3.38	6.05	60	36
Red Bluff	.00	1.06	3.66	72	38
Sacramento	.00	.72	2.18	70	40
San Francisco	.00	.66	2.41	68	46
San Jose	.00	.57	1.82	72	32
Fresno	.00	.58	1.37	72	40
San Luis Obispo	.00	.54	2.34	84	34
Los Angeles	.00	1.85	1.33	82	48
San Diego	.00	1.31	.85	72	44

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So writes John Forney, Kingsburg, a user of Charters Incubator.

"Even during the last three days—when the temperature is in danger of running up—the Charters Regulator keeps the heat exactly right—no matter what the weather outside." Says Mr. Forney: "Its action is almost human. I wish again to thank you for your

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It's the thermostats that do the the trick—actually anticipating any outside change of temperature—thus automatically adjusting the size of the lamp flame to meet the new condition, and keep the egg chamber the same, no matter what the weather. The outside atmosphere may vary 70 degrees, yet the egg chamber will change less than half a degree. The mechanism is entirely unlike the unsuccessful "sleeve" type of regulator. The big tank holds a supply capable of running the lamp 2 to 3 weeks. This means only one refill and trimming a week.

No more fear that the flame will run too low or too high, if neglected, and so endanger the hatch. No more getting up in the night to see if the lamps are all right. No more filling and trimming the lamp every day.

George Ellison of the Mission Hatchery, Campbell, installed Charters Regulators on every one of his machines (over a hundred)—and writes us that he finds they save him much time, and fuel and that "change had been well repaid."

Enoch Crews of Seabright Hatcheries, says: "I would never run off another hatch without your Regulators and Incubators complete." And backs up his endorsement with an order for 50 new machines, to add to the ones now in use.

Write today for free catalogue—or better still—place your order now for your Charters Incubators, or Regulator, so we can deliver in time for the Fall hatch. The Regulator is $10. The Incubator (with Regulator attached) is $65.00. They have saved money for others. If they do not serve you as well—your money back.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

The November Slacker

By Jean A. Koethen

THERE are two classes of hens that cannot be expected to lay in November. These are the late molters and the immature pullets. Late molters may be classified again as old hens and yearlings. By old hens I mean hens over two years of age. The number of eggs to be gotten from these hens in the fall is problematical at the best and depends largely on individual characteristics. Hens of the heavy breeds, Rocks, Orpingtons and Brahmas, cannot be depended on for fall work after they are two years old, though some of them may be profitable two years longer than this. The Oregon station has succeeded in breeding Barred Rocks that were valuable for four years, but the amateur is rarely so fortunate. Unless they are fed very carefully both Barred Rocks and Orpingtons incline to put on fat after they are two years old, and this tendency is not easily controlled.

Old hens usually molt a little later than young ones, and so November frequently finds them just getting into their fall suits. It also finds the best of the yearlings out of condition, for they have laid up to the last possible minute before beginning to shed their feathers. It would be unjust and unappreciative to insist that a hen that has laid from November to November must go on till Christmas or be voted a slacker.

The yearling hen that began to molt in August ought to be back on the job by the middle of November. If she is not, either she is a plain slacker and must be dealt with accordingly, or else she has not had the feeding and care that encourage laying.

Burden on the Early Pullet

By the process of elimination we have found that the burden of providing November eggs rests on the pullets, but we must eliminate even part of these. The pullet that has not had time to mature is never a dependable fall layer. She may lay a few scattering eggs, and she may deliberately postpone laying at all till January. Leghorns and other Mediterraneans hatched before the first of May and hens of the heavy breeds hatched before the middle of March can usually be depended on to produce eggs in November, unless they molt. Pullets hatched later than these dates are not dependable. My experience is that Buff Orpingtons rarely fail to lay between the end of the sixth and the beginning of the seventh month. Birds hatched as late as the first of April are often, in fact nearly always, in full lay before November. Rhode Island Reds, although of considerably less weight, do no better. I doubt if one can count on them under eight months. Light Brahmas, while there are exceptions, cannot be counted on to lay under ten months, and Cornish require a year. All the American breeds are rather slow in getting under way, and no dual purpose hen, except the Orpington, can be counted on to do much laying before she is eight months old. Knowing this, we are forced to hatch early or go without fall eggs. It all simmers down to this, that the dual purpose pullet hatched later than the first week in March is not a dependable fall layer. All immature pullets, that is, Leghorns under six months and dual purpose breeds under eight months, must be eliminated when we are looking for slackers. Edward Brown, the English authority, says:

"It ought to be the ideal in the minds of all poultry keepers to have each individual pullet laying by November 1, which can be accomplished provided the birds are hatched early enough and at the same time reared in a proper manner. It is impossible in this connection to lay down any hard and fast rule, because a great deal depends upon the nature of the breed kept, the class of soil and the method of rearing. Upon heavy soils chickens do not grow so quickly as upon the lighter lands, and the same is true as to the more exposed and colder parts of the country."

Only Two Slackers

When we get down to the facts in the case we find that there are but two real November slackers, the pullet that is old enough to lay but does not lay, and the yearling hen that has finished molting but does not get back to work. Statistics compiled by various experiment stations have shown that the pullet that does not begin to lay promptly and lay a fair number of eggs the first three months will always lay behind her more energetic sisters. In the 12 months' laying competition of the Utility Poultry Club, an English organization, in which were 600 competing birds, it was found that birds which laid ten or more eggs in the first four weeks (October 15 to November 12) averaged 187 eggs during the year; that birds which laid at all the first four weeks averaged 167 eggs in the year; that birds which did not lay in the first four weeks but did lay in the first eight weeks averaged 161 eggs; and that birds which did not lay during the first three months averaged but 106 eggs. At a similar competition in Cork eight hens which produced an average of 57 eggs in the first three months averaged 206 eggs in the year; eight hens which produced an average of 20 eggs in first three months averaged 96 eggs in the year; and eight hens which averaged only 1.25 eggs in the first three months averaged only 48 eggs in the year. At the fourth annual international egg laying contest at Storrs, Connecticut, the ten Wyandottes which made the best average for the year averaged 4.9 eggs in November, 8.7 in December, and a fraction over 12 in January and February. The White Leghorns averaged 5.7 in November, but were more influenced by the cold weather in January. Examples might be duplicated indefinitely showing that the most profitable layers begin laying in November or earlier. The pullet that defers laying until January in spite of careful feeding should be culled out and sent to market.

Study Environment and Feeding

Failure to lay when eggs can reasonably be expected is not always the fault of the layer. It may be the fault of feeding or environment. The pullet that is just beginning to lay is more susceptible to poor conditions of housing and environment than a

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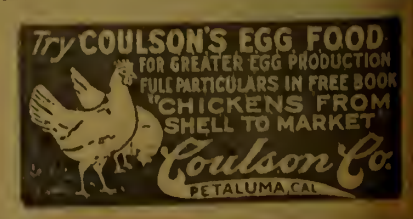


PLANS for POULTRY HOUSES All Styles. 150 ILLUSTRATIONS Send 10 Inland Poultry Journal, Dept 53, Indianapolis, Ind

mature ben, just as a young person is more susceptible than one of mature years. Overcrowding, filthy quarters, lack of ventilation, infestation of mites and lice, all tell on the health and production of a pullet. She should have protection from rain and sun and wind. Pullets allowed to run with cockerels or with the older hens are often teased and annoyed to the detriment of production. Keep them by themselves and see that they are thoroughly comfortable.

The pullet that is dilatory in beginning to lay and the yearling hen that is inclined to be a slacker may often be induced to lay by proper feeding. The dietary of all fowls, young or old, layers or non-layers, should consist of hard grain, ground grain, animal food in some form, green feed, shell, grit and an abundance of pure, fresh water. Omit any one of these and egg production will suffer.

Dry Mash Important

All farmers feed hard grain on the ground or in litter, but many fail to realize the importance of keeping dry mash always before the birds. This system of feeding dry mash in hoppers has superseded the old plan of giving a moist mash in the morning and letting the birds hustle for their living till supper time. The wet mash at some time in the day helps to start the pullets and is fed by many commercial poultrymen the winter through but it does not take the place of a dry mash always accessible. The mash may be one of the many good proprietary mashes that can be bad already mixed or it may be mixed by the farmer or his wife. It may be simple or complex, may contain many ingredients or few, but it is always necessary to satisfactory production because it is the only method of feeding which makes it absolutely certain that every hen shall at all times have all the feed she needs. The grain feeding at night is necessary to the health of the fowls, but it is the mash that produces eggs. In it may be incorporated the ingredients required for egg manufacture, and if only a limited amount of hard grain is given the hens are forced to eat mash or go hungry. A quart a day of hard grain to a dozen fowls was formerly thought necessary, but a quart to 15 or 16 is now deemed sufficient. The more mash a hen can be induced to eat, up to a certain point, tbe more eggs will she lay. Of course, if she is forced to eat mash entirely the digestive organs, which require the exercise of digesting hard grain, will suffer.

When the dry mash is kept before the pullets, a moist mash containing cooked vegetables may be given morning or night or early in the afternoon, but this is more an appetizer than anything else, and only what the birds will clean up in a short time should be given. When a good mash is fed it does not matter so much just what hard grain is given, provided there is some variety.

In Edward Brown's recent book on Poultry Husbandry a very good dry mash formula is given which is not essentially different from tbose fed in this country. In fact it is more simple than some of them. It consists of three parts corn meal, one part bean meal, three parts barley meal or ground barley, two parts bran, one part clover meal, for wbich we can easily substitute alfalfa meal, and three-eighths part beef scrap or meat meal. The laying ration at our own university farm is very similar: five pounds each of bran shorts and ground barley, three pounds meat scrap, two pounds soy bean meal, with a little salt and charcoal added. The meat is an extremely important part of the mash and should never be omitted unless milk in some form is fed. It is the animal food that makes eggs, the green feed that conserves health, and the grain that maintains bodily heat and energy. Without all three there can be no sustained production.

SHE HAD HIM

Husband and wife were having words, when he said: "I don't believe in parading my virtues!"

"No?" answered the wife. "Do you think you could dear? It takes a number, you know, to make a parade."

Poultry Queries

Conducted by J. A. Koethen

Pullets Moulting

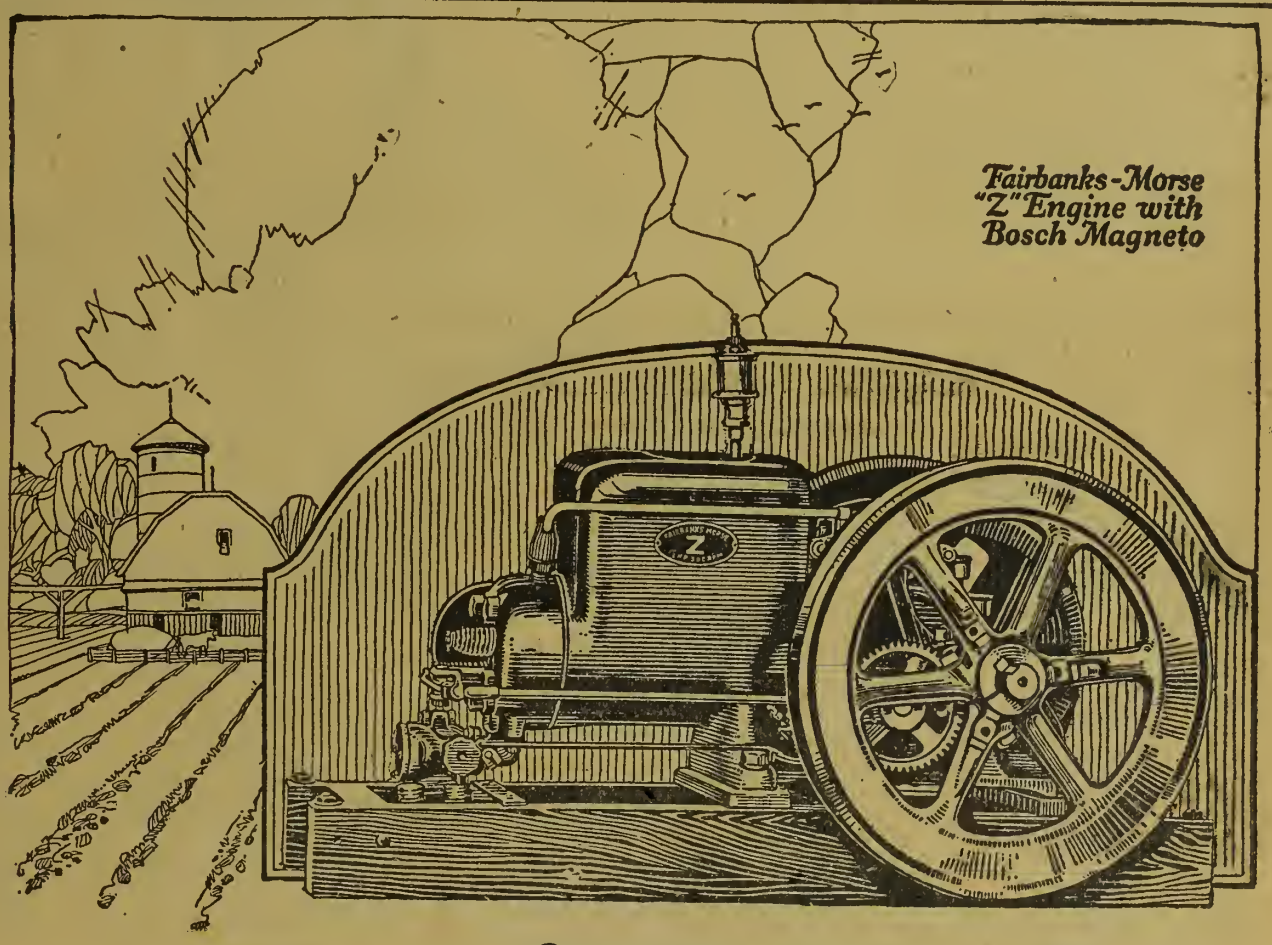
I would like to ask you a question about my White Leghorn pullets. Tbey were hatched in March, began laying in September and at first from the eight pullets I would get five and six eggs a day. Lately I only get four a day at most and often two or three or maybe one a day. I find a great many feathers under the perches and wonder if they would moult so young or if I am not feeding them right. I feed table scraps mornings and am careful that they are clean and not too wet. Then they always have the special mash in boxes all the time and at night about a pint of scratcb food (for the eight pullets). I let them out for about an hour before bedtime for a little run under the orange trees. I give them plenty of Swiss chard and lawn clippings. Will you kindly tell me if I am doing the best for them? Their house is new and clean and yard and water dishes always fresh and clean.—Subscriber, Riverside.

March pullets ought not to molt in the fall, except for the slight pullet molt which all pullets go through before they fully settle down to business. There are said to be six of these slight pullet molts, but they are so slight they do not materially affect production. It may be you have fed your pullets a little too well, given them so much egg producing material tbat they began to lay before they were quite mature. Pullets that have been forced in this way often stop laying after a month or so and go into a regular fall molt. At the university farm this is prevented by taking pullets off the laying mash at about four and one-half months of age and keeping tbem on a maintenance ration of bran and beef scrap, 95 per cent bran and five per cent beef scrap. This keeps them from laying too young and gives the frame a chance to develop. If your pullets have really gone into a regular molt, all you can do is to feed them up, giving corn and linseed or oilcake meal in the mash and some sunflower seeds if you have them in order to get them through the molt as quickly as possible. Your ration is excellent. I do not see how birds could fail to lay on it for any other reason.

Hens Not Laying

I have about 30 old hens (Barred Rocks) and 20 young pullets. I feed about a gallon and one-half of a prepared feed hot in mornings and a gallon of wheat and barley mixed, or oats, in the evenings. The hens have range on alfalfa and around the buildings. Some are through molting. I get only one egg every other day. Would you please advise me why I haven't been getting eggs since August?—Subscriber, Gridley.

The feed you mention is a mash and designed to be fed dry in hoppers. There is no harm in mixing some of it into a warm, moist mash for breakfast, but this does not take the place of the dry mash always before the hens. It would be a good plan, since the hens have good range, to cut down the grain feed a little, making it three quarts a day for the 50 hens and pullets and thus compelling them to eat more of the mash. If the young and old birds are in one flock it is quite possible that the old ones, which can hardly be expected to do much laying in the fall, are eating up all the grain from the young ones. Keeping the mash before them will prevent the old hens getting more than their sbare, but it is better to keep the two ages apart, at least until all the pullets have commenced laying. If your hens are more than two years old not much more laying is to be expected of most of them. Barred Rocks as they grow older are very prone to put on fat instead of laying. Better cull out all except those you know are laying. They will make nice Thanksgiving dinners.



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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — November 29, 1919 — No. 22

A Butte County Almond Orchard

California has some 50,000 acres planted to almonds. Nearly a third of this is non-bearing acreage, so that the production record thus far is a little above 5,000 tons annually. The output this year is far above that of any preceding year and the returns will be satisfactory. The average yield has been around 750 pounds per acre. Improved methods will increase this. In acreage the banner county of the state is Yolo with 5,500 acres in bearing. Butte, however, is a close second with 4,600 to her credit.

Join the Great Army of Western Farmers Who Are Cutting Ditching Cost 90 Per Cent or More

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It is a fact that no man who knows the real merits of the Martin Ditcher will be without this wonderful tool. It does more jobs well than any other farm tool made, and every operation makes a saving in time and labor and makes the owner more money from the land.

Every day the enthusiasm of Martin owners grows. We have in our files thousands of letters like the ones below. Space will permit us to print but a few of them but we shall be glad to mail you more. Read these letters and the facts about the Martin printed on this page. Then send us your name and let us send you the **Book of the Martin.** It will open your eyes to new possibilities in land drainage as well as better irrigation

Is Ditching a Tough Job for You?

Do you put off cleaning ditches as long as you can? Are there a dozen dirt moving jobs you ought to do but which cost you too much money done in the old, laborious way?

Let the Martin solve the whole problem for you. It makes new ditches faster than 100 men with picks and shovels, cleans weed-grown ditches lightning fast. It grades and repairs roads, moves snow, makes dikes, levees and borders, cleans corrals, cuts perfect laterals, does its own plowing as it goes, works on level ground or hillsides and in any kind of soil, wet or dry.

THE Martin O.D.&G.CO. REGISTERED

FARM DITCHER FIELD TERRACER AND GRADER

Read What These Owners Say

Colorado

The MARTIN Ditcher and Grader is all right. I used it on my ranch where the soil is gumbo of the stickiest sort, so much so that it is practically imposible to get a plow, or even spade, to scour in it. The MARTIN scours nicely and it did the work and I am indeed well pleased.—Richard Dillon, Sedalia, Colo.

Wyoming

With the MARTIN Ditcher and Grader I made two miles of new ditch to carry 5 feet of water and finished up the job in considerably shorter time than I could have done in any other way. I also cleaned out five miles of old ditch and did a better, a quicker job than I could possibly have done otherwise.
Malcolm Moncrieff, Big Horn, Wyo.

California

First I tried to buy a second-hand MARTIN and found that the farmers who owned them would not part with them. Then I bought a new one and have put it to many different uses, such as making new ditches, cleaning old ones and constructing ridges in the orchard. On all these jobs it gave perfect satisfaction and I pulled it with my Fordson tractor.—E. A. Frey, Exeter, Calif.

Idaho

I wish to say for the MARTIN Ditcher that it did, in 15 minutes, work that I fully expected to pay a man $5.00 a day for three (3) days to do. I can heartily recommend this machine to any farmer needing a machine for ditching.
E. A. Doud,
Blackfoot, Ida.

Nothing Can Stop the Martin

It goes through the toughest kind of wet, sticky ground or through the dry, hard, sun-baked kind. Makes a clean V-shaped, hard banked ditch down to four feet deep. It is adjustable and can be narrowed to prevent overloading horses or tractor, and is reversible to cut either right or left handed. This enables you to work up close to fences or on hillsides.

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Make more and better ditches. Cut and back-fill tile ditches for drainage. Cut your laterals, clean any kind of ditches, build roads and trails, build contour dikes, do a thousand and one jobs to make the land better and more productive, with a Martin. No tool like it in the world. Made to last a lifetime and cannot get out of order.

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California Cultivator

Vol. LIII, No. 22 | Los Angeles, November 29, 1919 | One Dollar Yearly

The Need for a Department of Farm Marketing

By H. H. Warner

CALIFORNIA farmers are accustomed to being pointed out as of higher average ability than farmers in other parts of the country, and whether or not we deserve this reputation, we are proud of the fact that California has won distinction for itself in progressive methods of marketing farm products through cooperative associations. In this particular line of activity California still ranks first although other states are following and in some cases improving upon the practices in vogue here.

The singular thing, however, which is worthy of the consideration of every thinking farmer, is that our great state university at Berkeley provides such limited opportunities for the study of these problems of marketing wisely the products of the farm. It may be assuming a great deal to attempt to criticize the courses of study in the college of agriculture, but when it becomes apparent that other universities are doing more work along these lines than our own, the matter becomes one of general interest.

The history of the cooperative movement in California is well known. The long distance to the great consuming centers and the occasional wide fluctuations in the price of our perishable commodities during the time of transit were the compelling factors which made the cooperative movement a necessity. The basic principle of cooperative endeavor was instilled into the earliest settlers through the need for using jointly in each community a single source of water supply, and so it was but natural that this principle should be expanded to embrace the selling of farm products. The development of the pooling idea by which the losses were spread and the profits combined followed as a natural course until today we have in successful operation a number of great marketing organizations of growers which distribute their various products through their own national selling organizations. The establishment of uniform grades, the opening up of new markets and the campaigns of national advertising to stimulate the consumption are some of the later steps in the process with which all are familiar.

The management of these great organizations transacting millions of dollars worth of business every year is demanding the services of men highly trained in the intricate methods of distribution and who are at the same time familiar with the difficulties of the growers. Even the local associations affiliated with the central selling organizations are feeling the need today of men who, while being in close touch with the practical operation of the packing house, are at the same time experienced in the selling end of the business and have had some opportunity to see at least the method of distribution of these commodities in the Eastern markets.

In an address before the students in the college of agriculture at Berkeley in 1912, former State Horticultural Commissioner Jeffries emphasized the increasing need for college trained men in the marketing of California farm products. If this was true seven years ago, the need is even greater today, but it must be admitted that the graduates of our college of agriculture are not prepared to enter upon work of this sort because of the lack of courses of study relating to this subject. Other universities, notably Wisconsin, Cornell and the Massachusetts college of agriculture, have for several years offered excellent opportunities for study in this direction, and several others are rapidly undertaking to establish similar courses of study. In entomology, plant pathology, organic chemistry, animal husbandry, dairying, plant breeding and the study of soils, our university offers unusual opportunities for study and investigation, but the one most important factor of all without which the practice of the principles of scientific production are of little avail, that of profitable marketing, is sadly neglected. Of course the student is able to take one or two very general courses along the line of farm economics, but these are generally somewhat theoretical and not well adapted to practical application, although they are important in themselves for the fundamental principles which they present. The field today, however, is so broad and complicated that a man intending to go into this line of work or who wants to further the cooperative idea in his own community should be able to secure a more complete understanding of the marketing problems confronting California farmers than can be obtained from the general courses now taught.

The man who plans to specialize in this work should not only be familiar with the history of the cooperative movement in this and other states and the method of operation of the large selling organizations, but he should be able to learn of the methods of sale and distribution of these products in the Eastern markets. He should be able to elect courses which would teach him the extent and time of movement of the same or competing crops in other sections of the country and the effect which importations have on the disposition of certain California crops. He should be able to learn something of how the local cooperative associations are organized and of the laws affecting their operation.

It is an interesting fact that the work done by the various bureaus of the United States department of agriculture is paralleled by courses in our own university in practically every case except that of the bureau of markets. It is also worthy of note that excepting a book written by G. Harold Powell of the California Fruit Growers' Exchange and one by L. D. Weld, now associated with one of the packers, there are practically no textbooks available for courses in this work. The detailed bulletins of the bureau of markets afford better and more authoritative material for studies along this line than can be found elsewhere. This fact, however, instead of being an obstacle to the offering of such courses at the university, should only show more clearly the need for these studies. In these days of rapidly increasing production and general interest in the prices of foodstuffs from the farms, we need in this state a well equipped branch of our state university, which will bear the same relation to the marketing problems of the California producers that the Harvard school of business administration bears to the manufacturing and merchandising interests of our Eastern states.

The marketing problems of the growers in California are by no means solved. The cooperative associations are facing today a threatened federal investigation urged by a certain well organized body of wholesale grocers. The right of farmers to bargain collectively is being questioned, and if we do not teach the rising generation of farmers the reasons for the maintaining of this principle there is a possibility of their reverting to the days of cut-throat competition between the various speculative interests who are eager to take advantage of such a situation. Other producing areas closer to the large consuming markets are offering keener competition every year, and the problem of stimulating consumption to keep up with the increasing production in all lines is continually with us. The coming generation of farmers in California will have some big problems to solve in connection with the profitable marketing of their products, and it behooves us to see that adequate courses of study are offered along this line in our state university.

Dehydration---Better Fruit---Wider Markets

By A. Layman

FOR the first time in history the world is holding its breath as it contemplates the food situation. There have been famines in isolated sections, but it is almost a trite saying that modern transportation and production methods will ultimately wipe out these local famines.

But is the world producing enough to keep itself from starvation? As yet transportation has not been so fully restored that Eastern Europe is supplied with a sufficiency. Even if it were, has America or other producing sections which have a surplus a great enough surplus to supply all?

Carefully gathered statistics as to foods now on hand, together with estimates of the present year's production, induce most thoughtful consideration of the question. Meantime appeal is made for production to the limit, for conservation as at no other time.

Discussing this question some months ago a writer in the National Geographic Magazine referred to the great wastes in consumption, especially in fresh vegetables, and sometimes even milk and its products, which caused great suffering. To handle these wastes it was suggested that the dehydrating method be employed. The article referred to the ideas of Dr. McCollum as to the life giving principle in leafy products and in milk and all of its products. This principle has been proven essential to the highest production in all life. David Fairchild, the writer referred to in the Geographic, says:

* * *

Two Food Essentials

The human machine is, after all, a simple one in many ways and can take its fuel (energy-yielding food) as well from cheap as from expensive foods, but it runs down quickly. Starches, fats, proteins, minerals and water are the five great food groups for which we are accustomed to planning in our diets; but until recently we have not known about two others which are essential to health. They are called respectively by research men the "fat soluble A" and the "water soluble B."

The "fat soluble A" is present in the fat of milk, the butter fat which forms the cream and butter itself, but, curiously enough, is not present in the vegetable oils nor commonly in the cereals or foods coming from the seeds of plants. It is, however, a characteristic of green vegetables and is particularly abundant in the green leaves of plants.

The "water soluble B," on the other hand, does occur in cereals, particularly in their outer layers, and in green vegetables, as well as in a very large number of other foods.

The South Italian peasants build up their strong, powerful bodies, then, from the proteins and starches of their corn polenta and from their green vegetables. They get their fats from the olive oil, and their "fat soluble A" is taken from the green vegetables. Their "water soluble B" is obtained from both the corn and vegetables, for it is present in both.

The old doctrines of "strength giving foods" must be analyzed from the new standpoint of the presence of

Continued on Page 722.

Agricultural News Notes of the Pacific Coast

Northern California

Yuba County has sold the last of its $810,000 highway bonds.

Japanese hold title to 1,400 acres of the richest land in Placer County.

Yuba County reports storage cannot be provided for the total bean crop.

Oranges from Colusa are now being shipped to hotels in San Francisco.

A paved highway between Chico and Sacramento has just been completed.

There will be much Mariout barley planted in Tehama County this season.

The growing of sugar beets in the Chico, Butte County, section has been abandoned.

A new United States battleship, the California, was launched at San Francisco, November 20.

Seventy tons of almonds were shipped this season from the Rumsey, Yolo County, warehouse.

Coloma, El Dorado County, is shipping a fine apple peculiar to that section, known as the Lady.

An oil company has leased 15,000 acres of land near Clovis, Fresno County, and will prospect for oil.

Grapes from Cloverdale, Mendocino County, sold in New York for $225 a ton and netted the growers $132 a ton.

The farm bureau of Placer County has organized a farmer's home telephone company to own its own phones and wires.

A tract of irrigated land near Dixon, Solano County, containing 5,647 acres, was sold last week and will be at once subdivided.

Air freight service will be established, by two aviators, between Sacramento and Chico, Willows, Corning and Red Bluff.

Guava jam from Hawaii to the extent of 300 cases was recently condemned at San Francisco as unfit for food, and destroyed.

This is the first year car lots of apples have been shipped from the Paradise district of Butte County, 15 carloads going forward.

The United States forest service has made a contract with a lumber company allowing 234,000,000 feet of timber to be cut in Plumas County.

George Shima, the Japanese potato grower of Stockton, heads a corporation of Japanese which has purchased 13,900 acres of land near Prineville, Oregon.

Supervisor C. A. Nelson of San Francisco says thousands of loaves of bread but two days old are shipped to hog ranches while city people are starving.

The California Nursery Company of Niles is suing the California Brick Company for $30,000 damages due to gas from the brick kiln injuring plants and trees.

Shasta County people are so busy that the post office at Shingletown was closed and the supplies shipped to Washington because no one would be postmaster.

Dr. F. M. Coleman, at the convention of the Prune and Apricot Growers at San Francisco, declared "500,000,000 pounds of prunes for California in the next five years."

Rice prices which opened last week at $5.36 per hundred pounds have now passed $5.80 and will reach $6 in the opinion of Secretary Merry of the Pacific Rice Growers Association.

Central California

Dos Palos in Merced County is a cotton and rice center.

On November 7 hogs sold at auction in Fresno for $17.80.

Gilroy, Santa Clara County, had a 1919 prune crop of 8,000 tons.

A $75,000 cannery is being built at Campbell, Santa Clara County.

Stockton potato growers are receiving $3 a sack for their output.

Ten cent milk is no more at Stockton, its last stand. It is now 12 cents.

Sixty per cent of California's apple output comes from the Pajaro Valley.

Lodi shipped 4,028 cars of grapes for which the receipts were $9,161,512.

Tulare County will spend $45,000 for building bridges over Porter slough.

A Madera County rancher paid $30,000 for a Poland China boar at Omaha.

Reports from Porterville show a heavy fatality among turkeys due to coyotes.

The first car of navels from Lindsay, Tulare County, was shipped November 14.

Central California onion growers are getting $4 per hundred for the present year's crop.

The biggest cotton crop in the San Joaquin Valley is at the Tagus ranch, covering 860 acres.

Lindsay orange growers have made a neighborhood canvass to study the serious orange splits.

The total apple shipments from Watsonville, Santa Cruz County, this year were 3,146 cars.

Ripon, San Joaquin County, will have to double its cannery capacity before the next fruit crop.

Of 879,678 pieces of nursery stock shipped into Tulare County last year but 5,456 were condemned.

A truant officer of Kerman, Fresno County, took up 30 children of school age working in cotton fields.

A $100,000 packing plant will be built in Visalia by the California Prune and Apricot Growers Association.

The new state soldier settlement colony in Merced County will be mainly developed for fruit growing.

The main Modesto irrigation canal will be enlarged to increase its capacity one-fourth, at a cost of $60,000.

The California Peach Growers at the Fresno office announce their total tonnage for the season as 35,000.

The broom industry is a growing one. Seven new broom factories were started in the San Joaquin Valley in 1919.

The Merced-Stanislaus Sweet Potato Association has shipped just 1,000 carloads of 250 crates each of sweet potatoes.

Newcomers from England and Scotland are purchasing many orange orchards about Porterville, Tulare County.

The boys of the Watsonville high school have organized the first agricultural club of Santa Cruz County this year.

The Tulare County Citrus Fruit Exchange reports the sale in the east of pomegranates at as high as $3.70 per half box.

Southern California

Santa Ana is building a $200,000 tourist hotel.

Riverside has two sky policemen to run down speed demons.

The Bakersfield, Kern County, cotton crop will total 1,000 bales.

Calipatria in the Imperial Valley is becoming a winter vegetable center.

The Arlington, Riverside County, farm bureau added 30 members at its last meeting.

A nine mile railroad extension from Blythe to Ripley, the new townsite, is now under way.

The Placentia Mutual Orange Association is building a packing house 100 by 237 feet.

A car of walnuts sent from Hemet, Riverside County, brought a gross income of $16,098.

The Southern California Automobile Club has erected 62,145 guide signs by the roadsides.

W. J. St. John of Hemet picked 250 pounds of walnuts from one tree and sold them for $75.

Hemet, Riverside County, reports ranchers busy sowing grain and the soil in good shape.

The Lima Bean Growers Association has disposed of 150 carloads at 14½ cents a pound.

Orange County citrus growers will receive close to $15,000,000 for this season's citrus crop.

The Anaheim Orange Growers Association will erect another large packing house at once.

The San Diego and Arizona railway was dedicated and the last spike driven on November 15.

During the past four years the Salton Sea has receded two miles on the south and east sides.

The California Prune and Apricot Growers Association will erect a large packing house at Santa Paula.

The 16 members of the Oxnard Walnut Growers averaged over $200 an acre from their orchards this year.

On November 11 cotton sold at Blythe, Riverside County, at $51.25. On the 13th it had dropped to $47.50.

The Orange County supervisors have let a contract for $30,000 to improve the road leading to the county park.

New roads and trails to cost $1,600 will be built in upper San Dimas Canyon under direction of the forest service.

Horticultural Commissioner Ryan of Los Angeles County has issued a warning as to the increased growth of Johnson grass.

San Bernardino County gives official notice that it will produce more than 10,000 cars of citrus fruits during the coming season.

A hospital and school for crippled children will be erected to cost $150,000, a site having been donated by John Brockman.

An Ontario, San Bernardino County, townsman had 11 hens that averaged 215 eggs each for the past year, a net profit per hen of $5.84.

Dr. J. C. Whitten gave pruning demonstrations at Del Sur and Roosevelt on November 21; at Little Rock and Palmdale, 22; Burbank and Lankershim, 24.

The Coast and General

In two districts in Mexico there are 10,000 acres of tomatoes.

The Spokane Valley, Washington, apple crop is 900 carloads.

Central Oregon is troubled with the disease known as the Kansas horse plague.

Sharp advances in long staple cotton have brought prices up to 82 cents for the best staple.

Many complaints are registered at Chandler, Arizona, over thefts of seed cotton by Mexicans.

A thousand pounds of mint oil was recently shipped from Eugene, Oregon, at a price of $10 a pound.

Arizona has 20,714,785 acres of unappropriated public lands, 13,572,220 acres of this is still unsurveyed.

By a recent ruling of the Arizona land board, all state lands leased in the future will be on a five year basis.

Exhaustive dehydrating tests in Yakima, Washington, prove frozen apples are worthless for dehydration.

Most of the sheep on the northern ranges of Arizona have been started for the deserts of the southern part of the state.

The famous Hood River County in Oregon is much less than half tillable, 51,384 tillable acres and 77,782 acres of non-tillable.

Out of 2,000,000 boxes of apples in the Hood River Valley, Oregon, less than 100,000 were handled in horse drawn vehicles.

Cattle on Arizona ranges are reported to be in good condition and ranges in fine shape for the winter in most parts of the state.

The Oregon Growers Exchange is the name of a new Japanese concern at Salem, Oregon. Stock $20,000; incorporators all Japanese.

The Mexican winter tomato crop will be two or three weeks later than usual; the first shipments will be made the last of January.

The world's largest apple packing company, at Dalles, Oregon, will ship 225 carloads, or 180,000 boxes, and the orchard is yet in its infancy.

Morrill Delano, a 15 year old boy, secured a free trip to the Chicago livestock show for winning first prize in the state pig growing contest.

For the first 11 months of 1919 there were sold from Maricopa County, Arizona, and shipped out, 231 head of registered Holstein-Friesians. The average price per head was $332.

County farm agents and all agricultural extension workers met at Phoenix just previous to the opening of the state fair for the purpose of arranging their exhibits and for uniformity and better cooperation in their work.

A company has been formed for the development of 30,000 acres east of Chandler, Arizona. This will be reclaimed by pumps similar to those in use on the large plantation of the Southwest Cotton Company, also near Chandler.

Plans are being completed for the affiliation of the Arizona-American Cotton Growers Association with the American Association. The local association is growing rapidly and expects to assist materially in marketing the crop.

Accomplishments and Possibilities of Cooperation

By Geo. W. Pierce, President California Almond Growers Association, Before Fruit Growers at Chico

TO TELL of the accomplishments of cooperative work among the agriculturalists of California would call for a detailed account of the growth, prosperity and development of the state for the last quarter of a century. Its benefits can best be shown by unearthing account sales of olden days with their frequent lavish display of red ink, and comparing them with present day returns made by any of the cooperative marketing associations.

As a specific example of the accomplishments of cooperative action among producers we cite the case of the California Almond Growers Exchange. In existence nine years it has grown to a membership of 3,200. Annually at date of price setting the books are closed to applicants for membership to participate in that season's sale. This year the desire to get in later has been so strong that more than 200 late applications for membership have been received. While each year the several almond growing sections are canvassed for members, there are always some who decline to become members. The fact that so many came in late this year would seem to indicate that late repentance is caused by unsatisfactory treatment at the hands of the speculator. This latter chap is just as unscrupulous today as 20 years ago. He is held in check today by the cooperative organizations. On each transaction he goes just as far as his tether will permit him. Along this line the organizations have done their part. They are still handicapped by the action of the outside grower, and the future complete success of cooperative selling, which really makes it possible to have anything to sell, must depend upon an educational campaign among independent sellers.

The great bulk of the almonds purchased outside of the exchange are bought at prices that range from $40 to $80 per ton below the prices received by members for the same grade of almonds. A very few in each locality, late in the season, are paid extreme prices as a bait to keep the rest in line for the next season's business. This season's experience is convincing many that they have long been imposed upon. They are turning to the exchange to secure the justice that is denied them in the open market. Give the exchange a 100 per cent organization and it will protect the California grower against even the cheapest imported product.

While its members are preparing in a substantial manner to take care of the almond business in all its branches, securing land, building warehouses, and installing modern machinery, while they are fostering national legislation looking to the benefit of our condition and fighting adverse measures, what is the outside grower doing for the business? While growing and harvesting a crop of almonds is the most important part of the business, it is far from all of it, and the annual expense incurred in trying to make this plain to all the growers is no small burden.

The independent seller, aside from his failure to cooperate, is a detriment to the business. If he could only reduce his status to the zero point, it would be a gain for the industry. As it is he is a negative quantity that must be overcome by the efforts of some loyal producer before he himself can really begin to build up his organization.

Just what line of argument induces a grower to become so blind to his interests it is difficult to surmise. In the early days of cooperative work, when the organization was not as strong financially as now, it could not pay growers as promptly as they are paid at the present time. This fact was worked threadbare as an inducement to remain outside. Now it has lost much of its effectiveness because of the practice of the exchange in paying about 50 per cent of the value of the product on delivery. This is followed by other payments at short intervals as the crop is moved.

Harvesting Almonds

There exists no logical reason for any grower to decline to become a member of a cooperative marketing organization managed along modern progressive lines. The only excuse such an organization has to offer for its existence is its ability to render service to its members.

It is controlled by a board of directors financially interested in the business. If the policy adopted by this board fails to bring desired results a new board with new policies may supplant the old within a year. The management is in the hands of a salaried officer who must make good or retire. The organization in every branch of its activities is directly under the control of the producer. If under this arrangement one cannot obtain satisfactory service he is doomed to disappointment for the remainder of his days.

The cooperative organization gives service through a score of avenues. Any cost of upkeep is returned many times over by benefits received. These come to us at such frequent intervals and often in such unexpected ways that we are wont to overlook many of them. In time of adversity when disaster in some of its many forms overtakes your industry, as it is almost certain to do, you need the strength that numbers and experience can give. To minimize the effects of disaster preparation in advance is necessary. The most effective safeguard yet devised by man for the protection of any given industry is a live cooperative association of parties interested in the success of the enterprise.

As producers we owe it to our customers, the consumers of our output, that they be relieved of all unnecessary burdens and expense. It is not only our duty to do this but it is good business. It will increase consumption and insure a steady demand. Under ruling conditions the consumer pays for transportation, distribution and possibly some graft or extortionate charges made somewhere along the line of travel. He is frequently forced to pay 100 per cent or more over the price the producer receives. Good return, that, on capital invested but a few hours. It goes without saying that this is unjust both to producer and consumer. Many of these charges for a passing service are too high. Some of them should be eliminated wholly. The consumer justly complains. He charges up all of the high cost of living to the producer when, as a matter of fact, only in one-half of this charge does the producer participate in any way. Naturally under this view of the matter the producer is termed a profiteer. Consumption falls off and ill feeling is engendered.

The producer should extend his field of operations so as to control, or at least regulate, delivery. This is possible under cooperative management. We have retired the speculator. Let us now turn the light of day on the petty grafter and make him a thing of the past in so far as the marketing of our produce is concerned. With a firm hand on the marketing end of our several lines we can free ourselves from the suspicion that now exists that we are profiteers. That this suspicion exists, there is no doubt, and our apathy in the matter adds converts to the belief.

Within the last month a call was issued to the mayors of 145 cities of the Pacific Coast to convene in Sacramento with the avowed purpose of formulating a plan for boycotting certain farm products. These official representatives earnestly discussed and favored the enactment of such laws as would put every cooperative selling organization in the state out of business. They invited chaos. They even went so far as to petition Governor Stephens to convene the legislature in special session for immediate action on the proposed measures. Had this scheme worked to a successful finish what would it have meant to the producing classes?

It is easy to predict what it would have done to the cities. Had the proposed boycott extended to all farm products, and had that boycott been religiously observed for a period of 30 days, we know that we would have lost for all time 145 customers, for this self imposed famine would in that time, or less, have scored a record of 100 per cent.

Here is a pressing two-fold demand for immediate cooperative action among producers. First, its mission is humanitarian, as it is called upon to aid in preventing starvation in the cities, the possible outcome of their own visionary theorists. From a commercial standpoint it must preserve the city as a necessary outlet for our ever increasing farm products.

At the mayoralty gathering referred to only two producers organizations were represented, and that representation was accidental. It was proposed to close the market for three quarters of a billion dollar's worth of annual farm products in California. Back of these enormous accumulations, representing as they did the sole income and dependence of our entire farming population, came a mere chance defense. Luck, rather than foresight, saved the day. It so happened that our very able and active state market director, Col. Harris Weinstock, dropped in at the meeting. In his very forceful manner he did much to help defeat the pernicious measure.

This attempt to make us reponsible for the sins of others has been temporarily tabled, but at the next session of the legislature, if we mistake not, this measure will be revived with conditions more drastic, if possible, than those contained in the original. Are we as representatives of the producers, going to be prepared at that time to make adequate defense? Can we afford to let so important a matter drift, to be taken care of by a chance defense?

Besides this there will be much constructive work needed at each recurring session of the legislature. To successfully meet this we should have a central representative body composed of delegates from each organization connected in any way with the production, handling or marketing of California grown food products. The findings of this body should be cared for and our interests furthered by one or more persons skilled in legislative procedure.

It is a trite saying that the farmer does not realize his strength. Cooperative methods are fast revealing the secret. It is now on the tongue of every progressive farmer. The powers and possibilities revealed to date are greater than the most enthusiastic had ever anticipated. We cannot justly take unto ourselves, however, the credit for having solved the problem. Union labor did that, and applied the newly gained information to its own benefit in so vigorous a manner that in self defense we have been compelled to adapt the formula.

Union labor, our instructor, is burdened by the possibilities revealed. It cannot judiciously use the vast fund at its disposal. But this is no cause for wonderment. Suddenly acquired riches are frequently misspent. The child does not overeat confectionery because it wants to be sick but because it likes the candy.

The attempt to openly defy our government, now being tried by union labor, is ill advised. Our instructor is showing us by example what we ought not to do. He is working out the proper status of this new government factor. Experiments are frequently expensive and sometimes disastrous. Our position at this time is extremely fortunate. We have the same opportunities as those enjoyed by our instructor. We are in a position to get more out of them than is he. While he is placing warning signs at pitfalls and dangerous crossings, he has no more interested onlooker than the farmer. As certain as fate we are going to use the power he is now developing. It is to be hoped that we can inject into it an adult dose of respect for the rights of others. He has cited mistakes galore for us to shun.

While we are learning our capabilities we must also learn our limitations. When the pioneering work is over and all are compelled to recognize that ours is a government of right, not of might, we will file on as much of the newly developed power as may be necessary, not to oppress, but to protect.

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture, and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday Nov. 29, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

No orchard industry is increasing in California with greater rapidity than is almond growing. The best of it is that the industry may continue to grow for years to come and still be in no danger of overproduction. This product is a staple and the country is importing every year thousands of tons. Our 50,000 acres is hardly a start in supplying the great demand for this delicious nut. This year every tree which can be secured from nurserymen of the state will be planted.

NUTS INCLUDED

Secretary Lake of the American Pomological invites us all to the next meeting of the association to be held in St. Louis, December 30. The American Pomological has a wonderful record of helpfulness almost since the practice of horticulture began in America, and the secretary now urges that this work continue and asks the "support of all amateurs in fruit growing, including nuts, as well as all commercial growers."

PURE SEED

The Associated Chambers of Commerce of Riverside County is a live wire in looking after the interests not only of the commerce of the county but of its productive industries. Its latest move is sponsoring the bill looking toward pure seed for California planters. This is the bill which passed the last legislature but failed to secure the governor's signature. The Riverside organization is joining with hundreds of others in creatiug early and positive sentiment for pure seed.

CYRIL G. HOPKINS

Many California producers will recall a series of valuable meetings held in Los Angeles and addressed by Profs. King and Hopkins, and also the addresses made by Dr. Hopkins at the Santa Barbara Fruit Growers Convention. Dr. King died soon after his return from California and we now note the death of Dr. Cyril G. Hopkins, agronomist and soil chemist for many years with the University of Illinois, also connected with Cornell University, South Dakota state college of agriculture and southern settlement and development organizations. Dr. Hopkins has been often named "the nation's greatest authority on soil fertility."

He is the author of "Soil Fertility and Permanent Agriculture," "The Farm That Won't Wear Out," "Story of the Soil," and many other works, including innumerable bulletins issued by the Illinois University and the United States department of agriculture. He was born at Chatfield, Minnesota, in 1866.

LEGISLATION COMMITTEE

"Resolved, That a committee of three be appointed by the director of agriculture to proceed at once to organize a legislative committee representative of the agricultural interests of California and whose expenses shall be provided by the several organizations such committee shall represent, whose duty it shall be to determine what legislation shall be asked for by the producers of the state and shall diligently prosecute effort to get such legislation enacted; and, further, in emergency cases, such committee shall act in all practicable ways for the advancement of the agricultural interests of the state."

The above is from a resolution passed at the recent State Fruit Growers and Farmers Convention at Chico and the committee appointed consisted of C. C. Teague, A. E. Sunderland and F. B. McKevitt. Appreciating the importance of its mission this committee called in many other representative men attending the convention and devoted an entire evening to discussing the first step to take in forming the larger committee which shall have to do with the legislative side of California agriculture. This committee will doubtless have as its foundation members from the various cooperative organizations of the state.

A representative committee discussed agricultural problems for many months preceding the last session of the legislature. It accomplished great good, but the time was not yet ripe for bringing together and harmonizing enactments of the past half dozen state legislatures. Besides, other bills which should have become laws have not had sufficieut support to secure their passage or possibly their signing by the governor. For instance, the pure seed bill failed of approval because it carried an appropriation and the governor was forced to veto it with other worthy bills in order to reduce the appropriations. Now with this committee acting as a clearing house, wiping out worthless and retaining necessary features, it will be possible for those who have the welfare of our agricultural interests at heart to put forth an effective effort that will secure the passage of needed legislation.

ASK AND RECEIVE

We recently heard State Director of Agriculture Hecke give assurance to a representative of a community needing state help in solving some of its horticultural problems that the entire machinery of the great organization of the department of agriculture was at the service of the producers of the state. There is scarcely an agricultural activity but should take advantage of the service offered by the department of agriculture. For instance, one of the most serious problems confronting the vineyardists of the state at the present moment is the mealybug. Mr. Hecke has been especially fortunate in securing the services of Dr. Nougaret, who is not only fitted by years of experience in vineyard work, but also by his enthusiasm, to handle a problem as difficult as that of this pest of the grape which has destroyed the value of thousands of tons of grapes this year. The best control of this pest calls for winter treatment. What this treatment shall be will be given out by the department presumably between now and the first of the year.

NEW OVERLAND

San Diego and the entire coast is now celebrating the opening up of a new line of transportation. This road will mean much to the prosperity of the city and county of San Diego. The first freight train over the new line is scheduled to leave San Diego Monday evening, December 1, and arrive in El Centro the next morning. The train will be made up of one car of canned fruits, vegetables and fish, one car macaroni, 17 other cars of rice, beverages, salt, implements and miscellaneous merchandise.

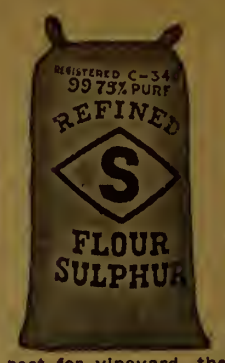
San Diego has called loudly for years for a direct outlet to the East.

HANDWRITING ON THE WALL

Cooperation is being accepted by California farmers as never before. It is not being accepted passively; the believers in cooperation have been aroused to fighting pitch and propose to see the principles of cooperation endorsed and carried out. No article recently published in the Cultivator has attracted more attention than "Bunk—An Editorial," in our issue of September 27. Writing regarding that article F. H. Harvey, mining engineer and metallurgist of Galt, says:

"I am enclosing $1 for subscription to your paper. I already have more than I can read, but cannot resist subscribing to your paper after the interest you have taken in the dairymen's organizations of California. You are certainly doing constructive work in this line and should have the support of every dairyman. If you could mingle with the dairymen as I am doing you would find them a unit for the association and willing to make any sacrifice for the same, as they realize in the hands of the operators and vested interests they are doomed to destruction. It seems strange that these interests cannot see the handwriting on the wall."

SULPHUR



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphur that money can buy; the best for vineyard, the best for bleaching purposes, LEAVING NO ASH.

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To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR 100 per cent pure. This has increased various crops up to 500 per cent.

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Big orders a specialty; small orders appreciated.
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CAPRIFIG SUPPLY

Now that the fig planting season is approaching it is well to warn the prospective planter to set out one or more caprifigs with his Smyrnas or Calimyrnas or he may get no crop when the trees become of bearing age. Every year complaints are heard of figs dropping when of small size and investigation reveals the fact that the trees are Smyrnas. These will not bear except the blooming figs are visited by the fig wasp, and the wasp lives only in the caprifigs. It has been suggested that if the Smyrna fig grower has no room for caprifigs he may have a tree of some poor variety which may be topworked to caprifig, or caprifigs, for one needs more than one variety of the latter if he has room for it. Two year old scions grafted into the top in two or more varieties would provide homes for the fig wasp throughout the year. The grafts will bear the second year. It is said there is always a shortage of caprifigs in Asia Minor and that the same trouble will be experienced in California if indeed we do not already suffer from it. From this statement it would appear that anyone growing a surplus of caprifigs could easily dispose of the crop. The United States department of agriculture suggests the planting of cooperative caprifig orchards by the growers in each section as the industry would be much more successful than if handled by several individuals. The department would supply such associations of growers with a free supply of trees or cuttings of the best caprifig varieties.

RAISIN COMPANY WILL HELP GROWERS

A new department which will assist growers in producing more and better raisins per acre has been inaugurated by the bureau of service of the California Associated Raisin Company. The new department will be in charge of Fred K. Howard, formerly horticultural commissioner of Kings County.

Problems of planting, cultivation, pruning, irrigation, fertilization, insect and disease control, as well as methods of picking and curing the crop, will be investigated. Assistance will be given to growers along these lines in an effort to secure raisins of the highest possible quality. Information on any phase of raisin production will be furnished free to all members of the Associated Raisin Company, even though it require a personal inspection of the vineyard by specialists on the staff of the bureau of service.

CALIFORNIA APPLE CROP

From the last report of the United States bureau of crop estimates it appears that California is fifth in the list of apple producing states. We were fifth last year, too, though we grew 336,000 boxes less than in 1919. Last year New York was first, with a heavier production than the first state, Washington, has this year, but New York's apple crop is this year less than half that of 1918. The most notable change is the climbing into first place of Washington and that state will doubtless hold the lead for many years to come, for her orchards are young and each year an immense new acreage comes into market.

In 1918 the states stood as follows, in the order of their production, the figures representing barrels: New York, 5,950,000; Washington, 4,296,000; Virginia, 1,776,000; Michigan, 1,495,000; California, 1,127,000. This year the rank and crop is: Washington, 5,865,000; New York, 2,712,000; Oregon, 1,402,000; Virginia, 1,507,000; California, 1,339,000. To convert these barrels into boxes multiply by three. The box states are: Arizona, Utah, Idaho, Washington, Oregon, California, Montana, Colorado and New Mexico. A severe freeze in Washington and Oregon during the latter part of October reduced the crop by about 1,000 cars.

Some snow has fallen on the higher elevations of Arizona, with consequent cooler weather. This is said to have caused grass fattened stock to shrink to some extent, but the cooler weather has hardened them and their condition is consequently improved. Shipments have been brisk, particularly of one and two year old stuff.

La Crosse TRACTOR

$1450 Cut to $1195

WE are pleased to announce that in spite of rising costs the production of the La Crosse Tractor has become so standardized that we offer a reduction of $255 from the former price of $1450.

We have been allotted a limited number for distribution at the remarkably low price of $1195. This is the standard Model G three-plow tractor, rated at a full 2,000 pounds drawbar pull. With its perfect kerosene burner and its own twin cylinder horizontal motor it holds many records for low fuel cost and dependability.

The price of $1195 is for the tractor complete with belt pulley, fenders and governor ready for work.

It has the fewest number of parts and every part is very accessible. There are thousands of these tractors being used successfully under many different conditions.

If you ever intend to have a tractor here is your opportunity to get a dependable three-plow tractor at a price only made possible by standardized quantity production.

During the next two weeks we will be increasing our number of dealers. If we do not have an agent in your community, and you know a live dealer who wishes to build a permanent tractor business on a proven success, urge him to write us at once.

Even though the production on this standard model will be more than doubled in 1920, the factory cannot promise delivery beyond present allotments.

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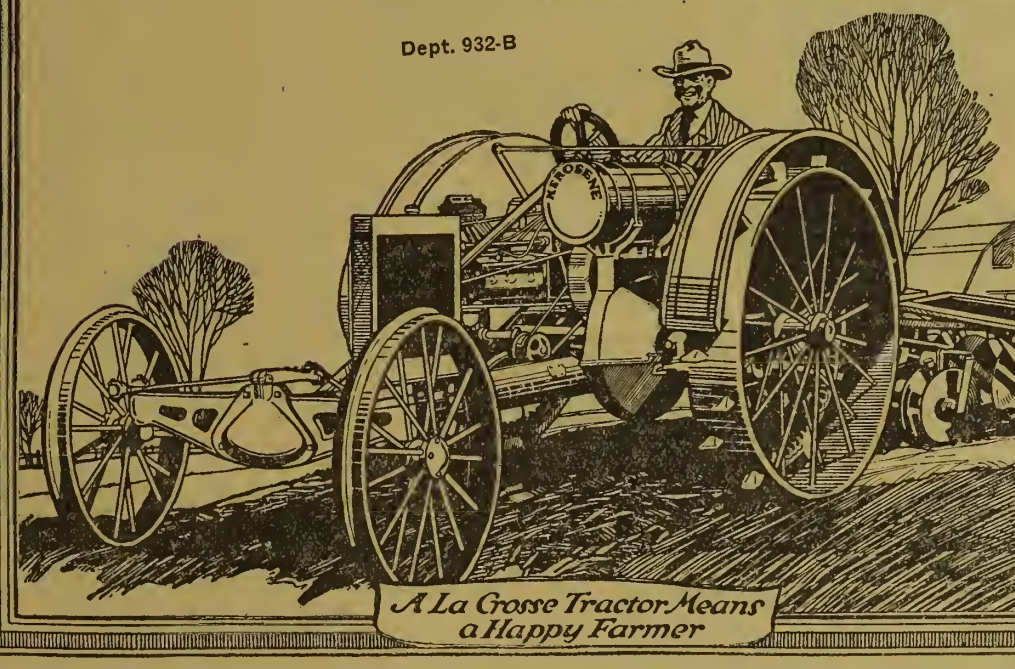

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The HARDIE ORCHARD GUN is $12.00, none better. Every one is guaranteed to give satisfaction to the user, or his money refunded.

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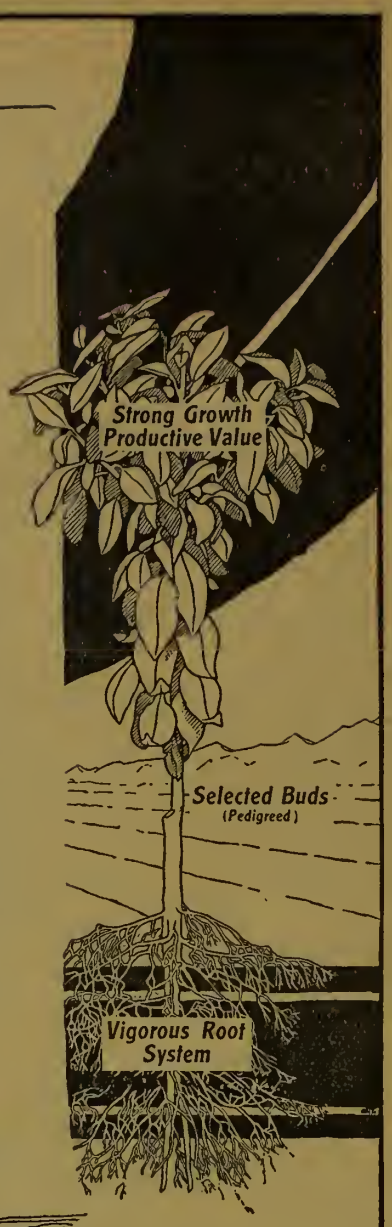

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TREE PLANTERS
The Fancher Creek Nurseries have played an important part in the production of fruit in this State. For 35 years we have made it our business to grow "True Trees," vigorous trees, well-rooted trees, trees that would bear.

Thousands of fruit growers owe their success to the fact that they planted "Fancher Creek" trees.

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Improved Pruning Methods

By Ernest Braunton

THOSE who have been used to the cut-and-slash methods of pruning would be astonished to witness the milder and saner methods now being demonstrated by Dr. J. C. Whitten, chief of the division of pomology of the state university. Few orchardists understand pruning aright and all except the largest growers trust the annual pruning to laborers who are seldom much interested in the work or secure very beneficial results.

Heretofore we have arbitrarily slashed off the tops of trees to reduce the height, cut out crossing and interfering interior branches and called it pruning. But Dr. Whitten shows a new system, telling his audiences the whys and wherefores of every cut he makes, until even a child may become familiar with the specific needs of every tree operated on. He is a fluent, enthusiastic and convincing speaker and is never at a loss for satisfying answers to the many questions his practical fruit growing audiences evolve as they watch his demonstrations.

This new method of pruning has a scientific basis, for whereas in the past we have studied the tree from the outside only, being all an orchardist could do, Dr. Whitten and associates have studied it from the inside. Many trees, many parts of trees, at different seasons have given samples of their sap for laboratory study. These sap examinations show at what time of the year it is nearly clear water, carrying little food for any vegetable substance, and at what season or seasons it is the vehicle for starch and sugar. Knowing then the secret of the tree's life support the scientist can tell the orchardist just what his trees are doing at any and all times of the year, so far as their most intimate functions are concerned. In the past we have slashed away at the outside of a tree without knowing what was going on within, just as we still bind wet cloths on our poor heads in the hope that the treatment will cure a bilious headache, the cause of which is altogether on the inside. If we learn sufficient of the sap movement of trees and when sap is richest and when poorest we shall come to learn how to divert it into proper channels to get major results in our fruit crops.

Dr. Whitten does no beheading, except of theories supporting the old style pruning (not pruning system, for it did not deserve the name of system). His gospel of the tree resulted in the first trial of the new system five years ago, and subsequent results have satisfied all investigators that his methods are both safe and sane. He approaches a branch with shears in hand, stating that instead of cutting off the top two or four feet he will leave the full length, thinning around it so the laterals will develop instead of all the sap shooting up to make new upright growth as after the usual beheading process. The result is that instead of making a rank, upright growth of four to six feet, the tree fills out with fruit bearing laterals and the top growth in a year does not exceed a foot in length. Then, if you want to take off this foot next year, your tree is no taller than it was the year previous and you have cut away but mere twigs. In the meantime the lower lateral growths have filled out in all parts and the tree has developed a most satisfying capacity for fruit bearing. Each subsequent year this thinning process goes on, and Dr. Whitten says that at 18 inches above a fork the branches should be 18 inches apart. Again he will say: "This branch, which needs thinning, we will clean up on the outside, leaving the fruit spurs on the inside only so the weight will pull the branch in. It will hang well out as it is, and after it has borne this year's crop must be taken off entirely, for this other inner branch is going to swing out to take its place as the permanent leader and framework for this part of the tree."

His every use of the shears is explained as quoted and he is by no means autocratic, lending a willing ear to all advice and criticism. For in his audiences are many experienced orchardists and some of them part reluctantly from long cherished theories on pruning. But Dr. Whitten makes splendid headway wherever he goes and doubtless will not have a hearer but will at least modify his pruning from that practiced in the past.

American Pomological

Secretary E. R. Lake, Washington, D. C., writes regarding the coming annual of the American Pomological which will be held at St. Louis, Missouri, December 30, 31 and January 1. Mr. Lake says:

Dr. Bailey in his last letter just before leaving for Europe, July 6, said: "I think all we can do at this time is to call a conference, and with no informal program beyond reports of committees and the society business."

Accordingly this is to advise members of the event and its purpose. It may be well, however, to add a few words in further explanation of the topics to be considered. Stress will be put uopn the fact that the society desires to enlist the support of all amateurs in fruit growing, including nuts, as well as all commercial growers who love fruits for themselves as well as for business: To consider the revival of the earlier activities of the organization in the exchange of varieties; discussion of nomenclature; reports upon the behavior of new, little known and favorite old varieties; a permament home; the affiliation of all state and district societies; a tie that will bind; colors, buttons, emblems or monograms. In fact, the whole event is to be devoted to the work of thoroughly reorganizing the activities of the society and arousing the committees, which have been too dormant during recent years, to up-to-the-hour action.

Dr. Bailey has his pocket full of suggestions for new things and new ways of accomplishing them, and it is the earnest desire of all the officers that every person interested in the upbuilding of a real American pomology attend and present his views as to how the American Pomological Society may best serve the cause which it represents.

BUDDED TROPICAL FRUITS

No more rapid strides in the improvement of tropical fruits have como to California horticulture than those of the last five years. Now all avocados and loquats are budded and seedlings no longer offered for sale. But since the progress was accomplished, other lines have undergone the same change. One may now purchase budded or grafted trees of the best varieties in feijoas, cherimoyas, sapotes and carobs. Of course, one must pay for them in proportion to their value over that of the seedlings heretofore sold. Feijoa may be had in several named varieties at $3 for good-sized plants, the Superba and Choiceana being among the best. Cherimoyas will cost $2.50 in like size and the Sapote may be purchased for the same price in three or more sclect named varieties, and the same may be said of carob trees. These improved budded varieties have already stimulated planting of these fruits, and in a few years productive orchards of them will be quite common.

COATES CATALOG

The 1920 cataiog of the Coates Nursery Company of Morganhill, containing a fuii list of fruits and ornamentals, rcaches us with a special insert announcement that causes no surprise to those who have investigated their new prune.

"The demand for our largest prune, Coates Fronch 1418, has been so great that ali but a fow were sold bcfore this catalog was ready to mail."

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18 TO 25 MILES PER GALLON OF GASOLINE
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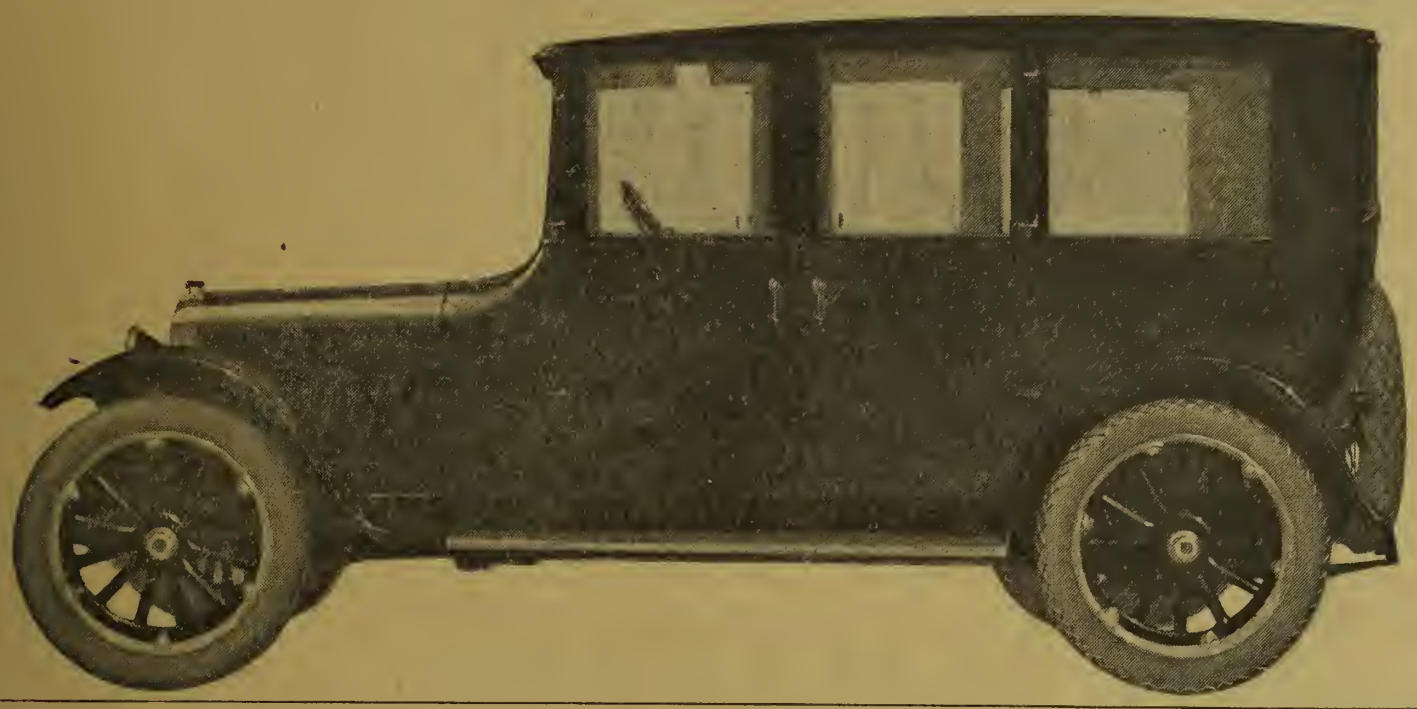

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OAKLAND
SENSIBLE SIX

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Bud Selection and Variation

By Ernest Braunton

THE Chaffey junior college of agriculture, Ontario, San Bernardino County, Geo. P. Weldon, pomologist, has been holding a very interesting, instructive and well attended ten day institute for the benefit of the fruit growers. A great variety of subjects has been presented and discussed, but none was more interesting than the two hour lecture on bud variation and bud selection by A. D. Shamel of the United States department of agriculture, for the past nine years stationed at Riverside.

A few years ago Mr. Shamel was one of a party of experts sent to Bahia, Brazil, to study the navel orange in its ancestral home. There he visited the navel orchards of Col. Baredo, whence came the two trees that were sent to Riverside, from which all our Washington navels have sprung. These orchards were at that time 70 and 80 years old and still bearing heavily. The first navels came from a seeded variety known as Selecta and the sports must have been very common, for when the party journeyed to Rio Janeiro to visit the Selecta orchards the first tree Mr. Shamel saw had one branch upon which nothing but navels were growing. That all the fruits from the sporting bud should be navels shows that it does not revert, and if we argue from the Mendelian law the statement could be made that this proves that all oranges were originally seedless! But Mr. Shamel made no such claim for he did not touch upon this phase of the subject.

It is strange, however, that bud variation was not earlier recognized and bud selection practiced. For farmers that trapnested their hens and tested their cows by the Babcock method to discover the boarders still indiscriminatingly cut budwood from any vigorous tree without regard to its crop performance. Indeed, the trend was quite in the opposite direction, for in as much as the barren trees made the most vigorous growth these were selected for budwood! Now the practice is to choose buds from those trees that produce the heaviest crop of the best oranges over a term of years in which the individual tree performance is carefully recorded. Each succeeding generation this is continued the nearer will the trees approach the ideal striven for.

Mr. Shamel had a fine lot of mammoth photographs to illustrate his talk of oranges, grapefruits and lemons, for the rules apply to all these fruits as well as to the orange, and the writer will venture the assertion that it will not only apply to these fruits but to all others and to all things living. This Mr. Shamel believes but stated he did not care to so assert because his present work is with citrus fruits only. Though Mr. Shamel's talk was one of the longest of the institute it was listened to with the deepest attention and not an auditor vacated his seat. This is not alone a compliment to the speaker but to the audience, for it shows that the orchardist is taking a keener interest than ever before in all methods that promise him better fruit or better yields. He wishes to get rid of the star boarders and retain the producers.

DEHYDRATION

Continued from Page 715.

these two newly discovered and not yet named substances, called by some the "fat soluble unknown" — substances apparently as essential to us as salt, but whose absence unfortunately we cannot detect by taste as we can the absence of salt.

Dried Vegetable Habit

To get into the habit of using dried vegetables would result in a tremendous change in the agriculture of the world. It would create demands for the products of plants which are now grown in comparatively restricted areas, and these areas would extend, just as the areas of the sugar beet, which in Napoleon's time were small, have grown until they cover vast regions of the globe—675,000 acres in America alone.

The sweet potato is one of the plants which would be affected at once, for its limiting factor of cultivation is its poor keeping quality and the fact that it rots if exposed to a temperature below 45 degrees. It already ranks second among the vegetables grown in this country, notwithstanding its perishability.

Dried sweet potato slices form one of the most successful of all dried vegetables, for they "come back" when soaked, retain their sweetness and flavor, and can be fried or candied in a most appetizing way.

* * *

It was the pleasure of the writer recently to make a test of dehydrated products in a meal made up almost exclusively of these products. The white bread was made of 20 per cent potato flour. In this case by potato flour we do not mean the extremely high priced starch flour used in the making of fancy pastries, but dehydrated potatoes reduced entire to a fine flour. The flour used in making the muffins was 33 1-3 per cent potato flour, while the small fruit cakes and doughnuts, or fried cakes, were made of flour of which 40 per cent was sweet potato — and we wish to say these were most delicious.

The sauces and marmalades had been dehydrated and water added and again made into a most delicious table product.

The enjoyment of this feast was increased by the fact that these products were practically all made from oranges, bananas, potatoes and sweet potatoes that would otherwise have been wasted because they came on a glutted market. If the world goes hungry because of the waste of these foods it becomes nothing more nor less than criminal, and this process of dehydration, which has been so fully discussed, offers the solution. In the issue of the Saturday Evening Post of October 18, 1919, Herbert Quick discusses "Taking the Water Out of the Cost of Living." He says:

* * *

I believe that by dehydration a large part of the more than 50 per cent of our fruits and vegetables which now spoil will be saved, that we shall be able to ship such things as sweet potatoes and potatoes, for instance, to foreign countries without danger from freezing or rotting, and that these products will be so reduced in bulk and weight that one railway car or one ship will carry as much food as ten can carry now, that it will be as good in quality as the foods we obtain by our present methods, and much of it better; and that by this development of saving food by taking out the water in it the world will be able to support its present population in greater comfort and care for an immensely greater population in case of the seemingly inevitable increase as it tak s place.

We get this new knowledge as a by-product of the war, and it seems possible that it alone is enough ev

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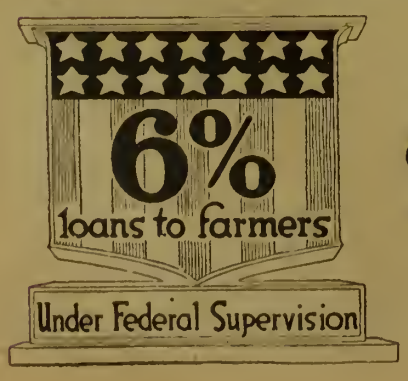

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tually to repay to the world the huge material losses of the war. The most nearly perfected methods of dehydration are as much superior to the old ways of drying as the modern cold storage warehouse is better than the ancient mode of keeping things fresh by hanging them down the well. So far as is known the improvements have been made in America, though before the war other countries were far ahead of us in this old-new industry. For instance, Germany went through the war on dehydrated potatoes. Petrograd was fed for a long time—and may be yet, for aught I know—on dehydrated potatoes shipped in gunny sacks.

The magnitude of the industry in Germany is astounding. In 1914 there were 488 potato drying plants in operation there. In 1917, under the stress of war, this number of plants, had been increased to about 1,900, and some 2,000 breweries were utilizing a part of their plants for drying potatoes. In 1917 Germany dehydrated more than three times as many potatoes as were produced in the whole of the United States! Says Major Prescott, detailed from the bureau of chemistry for dehydration work: "The German product is not so good as the best American product of today, and we have little reason to doubt, therefore, that if insistence is laid upon the high quality of the raw material and the use only of the best methods, the dehydrated vegetable industry in the United States will develop at a rapid rate and become a powerful factor in the conservation movement and the stabilization of agricultural crops."

The division of dehydration was a war activity. It was a part of the department of agriculture, but worked intimately with the food administration and the war and navy departments. Through its work some 500,000,000 pounds of raw foods were dehydrated, reduced to 50,000,000 pounds by the process, and shipped abroad. This amounts to 25,000 tons, or, say, five shiploads, which, in its raw state, would have taken 50 ships, and much of it could not have been shipped without great spoilage.

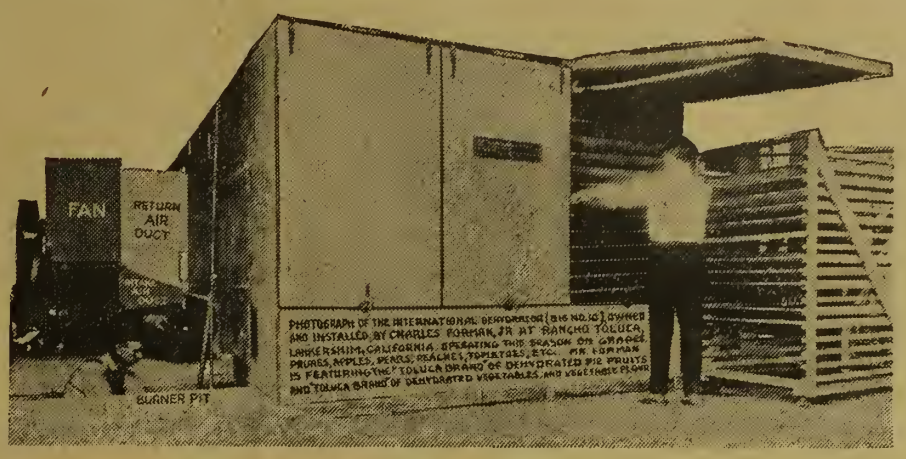
During this war period the whole matter of taking the water out of fruits, vegetables, fish, shellfish and meats has been gone into scientifically. It is now possible to dehydrate these articles of food in such a way that the cells do not break down or close up; the amount of water taken out is so controlled that though the food product is dehydrated it is never totally dried. It is brought so low in moisture that dehydrated green peas, for instance—or potatoes, or apples, or sweet potatoes, or green corn, or spinach, or peaches—will keep as long and as well as wheat, and yet when soaked, after no matter how long a time, they will take back into the same cells almost the same amount of water originally contained in them; they will become fresh vegetables again, and when cooked will be just as good as before they were dehydrated. Such things as lettuce, cress and radishes, which are eaten uncooked, cannot be brought back to their original crispness, and dehydrated tomatoes will not be very satisfactory if served raw. They come back to a wilted state, but are quite as good when cooked as before the dehydration process took place. Green corn on the cob is dehydrated by boring out the pith of the cob and then drying, and when soaked back it is quite as good as it was when prepared. It is better than most of the green corn bought in the cities, because it may be dehydrated when it is fresher than it is likely to be in city markets.

GOVERNMENT WHITEWASH

Slake a half bushel of lime with boiling water, keeping it covered during the process. Strain it. Add a peck of salt dissolved in warm water, three pounds of ground rice put in boiling water and boiled to a thin paste, one-half pound of powdered Spanish whiting, one pound of clear glue dissolved in warm water. Mix well together and let the mixture stand for several days. Keep the wash thus made in a kettle or portable heater, and when used put it on as hot as possible with painter's brushes or with whitewash brushes.

The International Dehydrator

"The Salvation of the Fruit Growers"



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BUILDING THE TREE

In his pruning talks Dr. J. C. Whitten advises cutting off the young tree at about 30 inches high. Three leaders should then be selected at the close of the season, one at a foot or so above the ground and preferably on the south side, and the two others on other parts of the trunk and about eight and 16 inches above the lower branch. This starts the head equally on all sides of the trunk and also distributes it up the trunk for a range of 16 inches.

It has been found that by short pruning the young whip to 18 inches the leaders start out at nearly the same point, four or five usually being left. Within two or three years these merge into a solid growth and become wedge shaped where they join at the tree and can never become any larger at that point. This condition causes a choking of the sap flow and food is never again as free to the top. If one of these branches is broken out the hole left is always shaped as though an iron wedge had been driven in and pulled out again.

Properly distribute your leaders, only three in number, and such conditions cannot prevail. The next year leave the three chosen for leaders unpruned, and nip off all other leaders to four or five leaves. These will shade the trunk, be the first fruit bearers, elaborate the sap through the leaves and thus become the first food storers. Each of these three should then be allowed to branch into two, making then six leaders. At 18 inches from the fork these pairs of leaders should be 18 inches apart. Thus is started Dr. Whitten's ideal deciduous tree.

WHAT FRUITS TO PLANT IN ARIZONA

A list of fruits and varieties adapted to Arizona conditions has been prepared by J. Crider of the college of agriculture at Tucson. It shows varieties adapted to lower and warmer localities and to higher and colder sections. This is exactly the information that has been needed by planters in Arizona where such a variety of climates prevails and where so many mistakes have been made by planting varieties of fruits not suited to the climatic conditions of the region.

Varieties are listed as adapted to four localities: 1,500 feet elevation and below; 1,500 feet to 2,500 feet; 2,500 feet to 4,000 feet; 4,000 feet to 6,000 feet. Apples are growing at Alpine in Apache County at an elevation of considerably over 7,000 feet.

The list includes a wide range of fine varieties of the following kinds of fruit: Almond, apple, apricot, feijoa, fig, grape, guava, horenia, jujube, lemon, lime, nectarine, olive, orange, pear, peach, pecan, persimmon, plum, pomelo, pomegranate, prune, quince, blackberry, dewberry, raspberry, strawberry, gooseberry, cherry and walnut.

This may be secured free on request from any farm agent or from Agricultural Extension Service, Tucson, Arizona.

MARKETING ACCOUNTING COURSES

Accounting systems for marketing organizations, prepared by the bureau of markets, United States department of agriculture, are to form the basis of courses in marketing accounting at 26 colleges next year. These accounting systems have been prepared for use in country grain elevators and creameries. Their value has been demonstrated by 800 actual installations.

The bureau is preparing text material which will be available by the middle of December. It may be obtained by colleges free of charge for the first year upon application to the bureau.

Although at present the text material is confined to work in creameries and country grain elevators, the bureau of markets has worked out ssytems for other lines including cooperative fruit organizations, cooperative stores, livestock shipping associations and cotton warehouses. Bulletins on accounting systems for commission houses, cold storage warehouses and milk distributing plants are being prepared.

CITRUS IN SAN BERNARDINO COUNTY

San Bernardino's orange crop for 1919-20 will be approximately the same as the season just closed. This is the declaration of J. P. Coy, county horticultural commissioner, after a comprehensive survey of the citrus districts of the county.

A total crop for the county of 10,718 cars is predicted by Commissioner Coy. This is about 65 per cent of a normal crop.

The orange output for the county for the past season was 10,907 cars, nearly one-third of the total Southern California output, which is 35,326 cars to date.—C.

THE OLIVE CROP

San Diego County reports a very fair crop in all districts, while in Los Angeles County it will be larger than for many years past. On the Sylmar ranch in the San Fernando Valley, one of the larger orchards of the state, the crop is said to be unusually heavy, being about twice that of last year. Several hundred acres of these are top-grafted and about 200 acres of top-grafted are too young to bear. The crop in all parts of the state shows that the total output will be larger than last year but this will be due to the increased percentage of large sizes. As one goes north, Clovis, in Fresno County, reports a light crop, other parts of the county report normal or above. Corning and other parts of Tehama County report a good crop, mostly of Sevillanos.

WALNUT SHIPMENTS LATE

Due to the unusually large crop the 1919 walnut shipments will be the latest for several years. For example, the first carload in 1916 was shipped on September 11; this year the first car was shipped November 1. The big plant of the Santa Ana Walnut Growers' Association is running two full shifts, but as the crop is 115-120 per cent normal, delayed in harvesting by early rains and the warehouse so full of nuts that they cannot all be handled for two weeks, the officials are almost "nutty" themselves.

APPLE PULP UTILIZED

A news note from Oregon states that instead of being a liability the carting away of the pulp of the apples ground up at the vinegar plant at the cannery of the Eugene Fruit Growers Association is now an asset. Not long ago the association was compelled to pay $12 a ton to have the pulp carted away, but now it is being sold at the rate of $60 a ton. Manager Holt has an order from Missouri for a carload of this material. As the car will contain 30 tons it will bring $1800. The pulp is dried in the prune evaporator before being shipped.

AMERICAN LUMBER IN AUSTRALIA

Nearly all of Australia's lumber supply is hardwood and there is not sufficient soft wood for house building. In New South Wales, it is estimated the soft wood supply is sufficient only for six or seven years and the hardwood supply will last for 30 years. It would, therefore, appear that the market for Pacific Coast woods from the United States will be growing better in Australia. During 1918 the imports of lumber from the United States were: Sugar pine, 216,000 feet as against 3,669,000 in 1914; redwood, 7,444,000 feet against 20,305,000 in 1913 Oregon fir, 15,996,000 against 50,406,000 in 1914. It is thought the former importations will soon be equaled.

Australia has approved the importation of lemons and oranges from the United States to the extent of one-third the amount imported annually during the period from July 1, 1915, to June 30, 1918, or, at the option of the importer, one-third the amount imported during the war. Restrictions are: "Provided that citrus fruits are accompanied by an official certificate giving name of state wherein grown, stating the quantity and certifying: (a) that the fruit was grown in the specified state, (b) that in said state citrus canker does not exist; that the consignment is free from citrus canker and all other diseases. All plants belonging to a sub-family or tribe shall be understood to be included by the term citrus."

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THE run of 300,000 Maxwells to date saves you many a worth while dollar in the new Post-War Maxwell. Those 300,000 saved in many ways.

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More miles per gallon
More miles on tires

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4. They enabled quantity purchases; and better materials are bought at lower costs.

5. They taught how to build an almost trouble-proof car; you seldom take a Post-War Maxwell to a repair shop.

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7. They taught how to build a car that the less skilled driver would find simple to operate and take care of.

8. They taught that it was better to build more and take less profit per car rather than build less and take more profit per car.

9. They taught how to put more and more value in the car without increasing its cost.

This Post-War Maxwell is next year's car. It contains features developed during the war, many of which will find their way into other cars in the summer of 1920.

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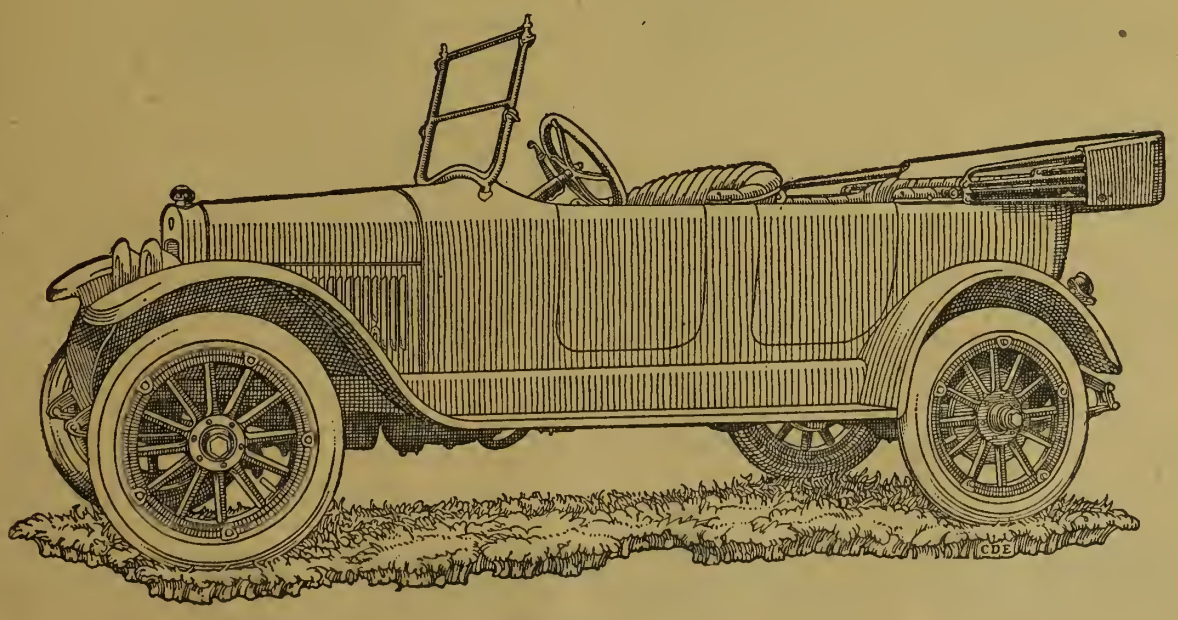

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Made in several styles and sizes. Fit the feet perfectly. Materials, workmanship and satisfaction guaranteed. Get your catalog at once. It tells the whole story. Write today.

OVERLAND SHOE CO. Dept. 161 Racine, Wisconsin

When Writing Advertisers, Mention The Cultivator.

Farm Loan Banks

THE farm loan bank is constitutional. This is according to a decision handed down by Justice Van Valkenburgh of Kansas City. The existence of this new farm credits system being threatened, notable legal counsel was retained by all parties to the suit. Former Secretary of the Treasury William G. McAdoo appeared for the government and the joint stock land banks. Former Justice Charles Evans Hughes of the United States supreme court appeared for the federal land banks. Former Attorney General George W. Wickersham also appeared for the joint stock land banks. Former Solicitor General of the United States William M. Bullitt and Frank Hagerman appeared for Charles E. Smith, who brought the suit to enjoin the Kansas City Title and Trust Company from purchasing bonds of the land banks, contending that the bonds were invalid by reason of having been issued without proper authority under the constitution of the United States.

Mr. McAdoo recited the story of the framing and passage of the law. Mr. Hughes and Mr. Wickersham made legal arguments as to the rightful powers of congress to create federal land banks and joint stock land banks and to exempt their bonds from taxation.

Mr. McAdoo, who was secretary of the treasury at the time the law was being framed, was able to present a graphic and highly interesting account of what was intended and what was actually done. He said that to provide money and credit for all classes of farmers was almost an impossibility up to the passage of the federal farm loan act.

From the first agriculture in America had suffered for want of money for both development and operation. Since the days of Hamilton the government had recognized the need and had sought continuously for a remedy. However, there were four angles to the problem which made the situation difficult to handle.

The very nature of banking, the safeguards which had to surround it if depositors were to be protected, made it difficult to extend to the farmer the kind of credit he could use. Because the banks had to keep their business in such condition that depositors could get their money any time it was impossible to make long time loans from current funds deposited with the banks. If farmers were to be given the kind of credit they needed and have enough time in which to work out and meet their obligations from their earnings, the money had to come from some other source.

Again in the very nature of things a bank could not lend the money of depositors without ample security. In other words, those farmers who most needed money had the least to offer as security. Therefore, it became necessary to create for them a kind of credit which farmers could use to advantage.

The banks could not spare from their deposits enough money in the aggregate to meet the needs of agriculture. Neither could they supply enough funds to afford any considerable relief.

Capital could not be induced to invest in agricultural securities unless these securities were made as attractive as other securities.

Therefore it was necessary to create a system of rural credits which should provide: Plenty of money, money on long time credit, money on liquid securities, money at a low rate of interest.

Accordingly the government borrowed from the experience of the commercial world and from the experiences of every civilized country of Europe and sought to use in the creation of a system of rural credits everything in these experiences that was useful and adaptable.

Bond issues had made corporate finance possible. Bonds made it possible for corporations to borrow money on long time credit. Bonds also made it possible for corporations to borrow money (because of the long time investment) at low rates.

Certainly if bonds had done this for corporations they could do the same thing for agriculture.

But the certainty of double taxation presented tremendous difficulties. The land being taxed once it was unfair to tax also the mortgage on the land. Furthermore, if bonds were to be issued against farm mortgages they would have to be sold on the market in competition with tax exempt bonds of municipalities. From this it was evident that if agriculture was to be given cheap money its bonds must be exempted from taxation.

So the government developed a system of farm credits which, with tax exempt bonds as the basis, thus provided plenty of money on long time credit and at low rates.

RELIABLE CONCERNS

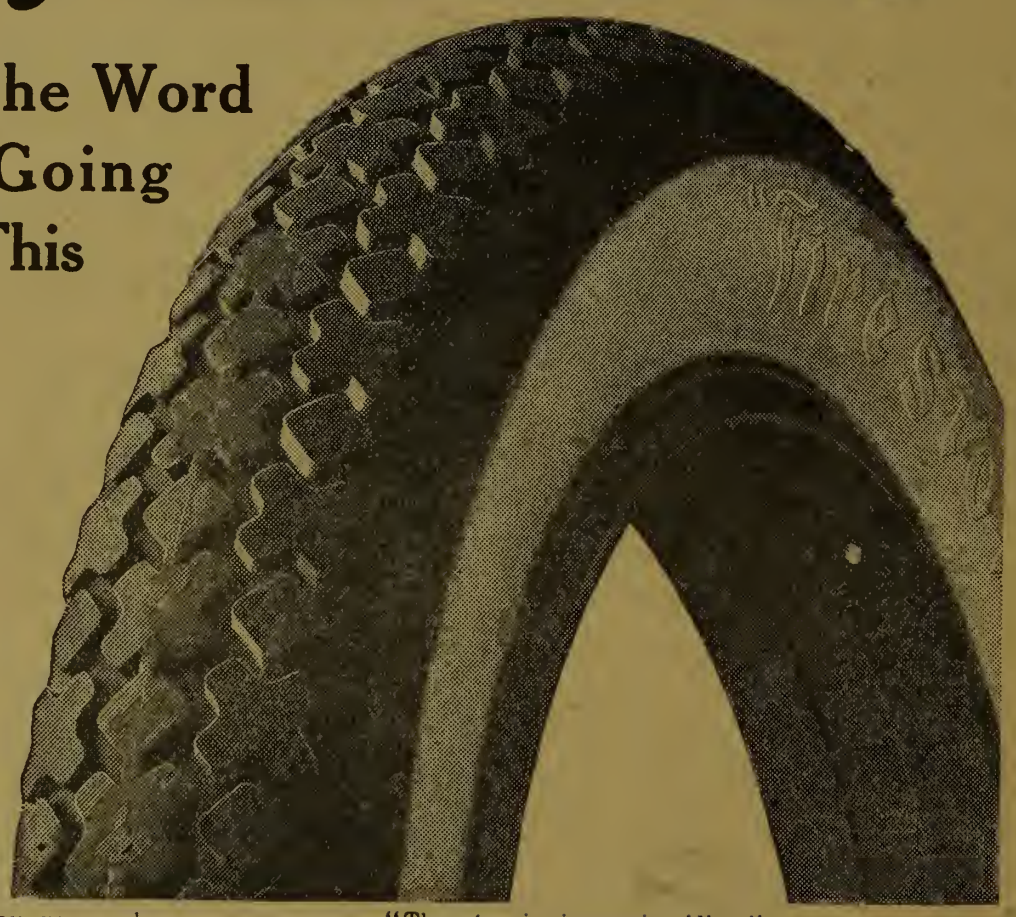
Subscribers to the Cultivator may have noticed on editorial page our guarantee as to the character of advertisers, and to the end that such guarantee shall be made good we have always used extreme care in admitting advertising into our columns. For example, we have consistently refused to admit advertisements of fake remedies—although their promoters are more than willing to pay the highest prices—while we do admit and recommend to our readers reliable prepared foods and remedies which have proven their value through years of use. The busy farm wife or poultry raiser finds it much easier—and usually cheaper—to keep on hand reliable remedies which are prepared by specialists who know their business than to try to put together—perhaps in an emergency when time means money—some home made decoction. The same thing is true of many sprays and paints; where used in small quantities or wanted in a hurry, it is found eminently more satisfactory to secure from the dealer all ready to use. The farmer may erect his forge and fashion his own plows, cultivators and other tools, but is not his time more valuable spent in producing food and is not the product of the factory more satisfactory than his own handiwork?

It pays to deal with reliable concerns, and the Cultivator feels that this is one of the greatest services it can render its readers—the maintaining of careful oversight over its advertising columns that only such concerns may appear.

Through a cooperative agreement between the United States reclamation service and the Arizona state land commission, the sum of $30,000 has been appropriated on a dollar for dollar basis for the survey of four possible dam sites for the storage of water for irrigation.

"Buy Firestones"

That's the Word That's Going Round This Year



WHEREVER you go you hear car owners passing the word—"Buy Firestones. They're the best cords this year." The reasons are many, but the conclusion is the same—Buy Firestone Cords.

Read these spoken advertisements for the New Standard Oversize Firestone Cord with Extra Heavy Non-Skid Tread:

"It gives me a lot more service than the mere guarantee."
"Not only fine service but a tire that looks right."
"The extra air gives easier riding."
"The non-skid tread is fine; it holds in all kinds of roads and yet there's no power wasted."
"I bought it because of its extra size and the Firestone reputation."
"You'll notice that you go farther on a gallon of gas."
"It steers easy and grips the road."

With the mouth-to-mouth tire advertising centered on Firestone this year no thinking tire buyer can afford to remain uninfluenced. See your dealer.

FIRESTONE TIRE & RUBBER COMPANY
Firestone Park Akron, Ohio
Branches and Dealers Everywhere

Firestone

Most Miles *per* Dollar

Since 1902

Pomona
DUPLEX-PLUNGER
Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right" Irrigation Gates and Valves

PRICES RIGHT--QUALITY RIGHT
SEND FOR BOOK C.

POMONA MFG. CO.
POMONA, CAL.

ARCADIAN
Sulphate of Ammonia

Watch for our talks on Top Dressing with ARCADIAN Sulphate of Ammonia. You will find them interesting as well as instructive.

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼ per cent. Made in U. S. A. Arcadian is the great American Ammoniate.

For sale by all the principal dealers.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Commercial Value of Green Feeds

Will you be kind enough to inform me what is the price this season for stock beets and silage corn, both in the field and delivered at the dairy barn? I am raising these products for a dairyman who leases my dairy buildings, and it seems rather difficult to find quotations on same.—Subscriber, Anabeim.

We will pass this on to our subscribers who have had experience. What is a fair value in field for fresh cut corn for silage; also for pumpkins or other succulents? We know of one Los Angeles dairyman who is paying for green alfalfa, which was hauled away as rapidly as cut, $4 per ton, the buyer doing all the hauling. The dairyman thought the price should be around one-fourth as much for the green stuff as for the cured hay. One dairyman has told us that he feels that $8, under normal conditions, is full value on silage. The cost of cutting, hauling and placing in silo should of course be deducted. The same dairyman said that he had bought mangels at $1 per two horse load. He admitted that their real value was far above that figure but that the demand was low. Will our readers inform us how much they are giving or receiving for pumpkins, beets and soiling crops?

Pickers' Tags

What method do fruit growers generally employ in order to keep a correct and certain tally of how many boxes each picker picks?—Subscriber, Corning.

We believe the usual method is for the picker to have in his pocket a number of tags and as soon as he is finished with a box stick one of the tags on the edge of the box which is gathered by the loaders and tag handed to foreman who checks up credit according to the number of tags found. Some use small tin tags so bent as to hang on the edge of the box. Another method followed by some growers who have picking foreman is that each box as soon as picked is reported to foreman who inspects and hands check or tag to the picker who presents tags at the end of the day for total credit.

Volunteer Milo

I have three acres in dwarf milo and wish to know if it will grow a crop the second season after being pastured during the fall and winter. —Subscriber, Owensmouth.

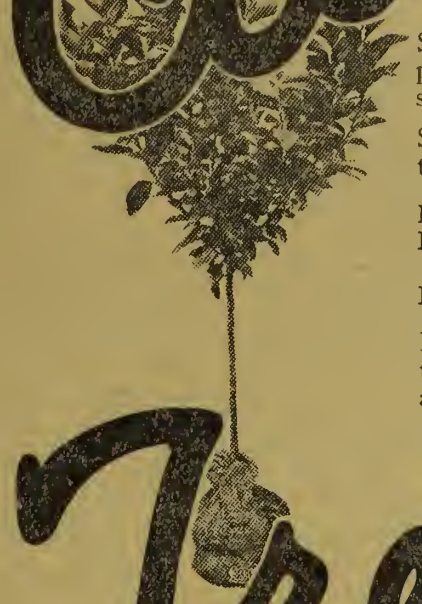
This question was referred to Prof. J. W. Gilmore of the state university, who writes:

"Regarding volunteering milo. This has never been successful in any part of the state where I have seen it attempted. It cannot be successful in any part where even the slightest frosts are prevalent, and even in those portions of the state where frosts do not occur the growth of the milo is so retarded during the winter that it does not recover in the spring. Normally milo is an annual plant, having no root stocks or other means of carrying it over from year to year. Consequently I cannot hold out any hope that such a practice will be successful in any part of California. I would much prefer to plant each spring for the sake of the invigorated growth and early development that will come from seedlings."

AMERICAN COTTON IN EUROPE

An American cotton broker just returned from a visit to Germany and what was Austria-Hungary states that Italy is the best Continental market for American cotton. Switzerland will need but 50,000 bales and German, Austrian and other manufacturers lack coal and capital and cannot buy and store in large lots as in pre-war days. Austria never was a good market for our cotton and as most of the mills are in Bohemia, now a part of Czechoslovakia, Austria proper will buy little.

Choice, Healthy
Citrus Trees



Selected budded stock—trees in perfect condition—the best that scientific culture can produce.

Special offer, $150 for 100 trees in the following varieties:

Navel and Valencia Oranges.
Eureka and Marsh's Seedless Lemons.
Extra fine Grapefruit.

Place your orders now — these trees are exceptionally fine stock, and our supply is limited.

Germain Seed & Plant Co.
Established 1871
N. E. Corner Sixth & Main Sts.
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Bean Power Sprayers

EXCEL

They excel all others. No other sprayer has features so far advanced in design as the Bean.
Bean features mean:

Time Saved — Spraying at Less Cost
More Efficient Work — Minimum of Labor

Bean efficiency means better work and better fruit, as a result —more dollars.
Equip with a Bean—it's a thoroughly dependable outfit. A size for every need.
Ask for catalog No. 33.

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Made in California for California conditions. All sizes from 5 to 10 feet wide. Without fail see the genuine ARNOTT before buying. Write or call today.

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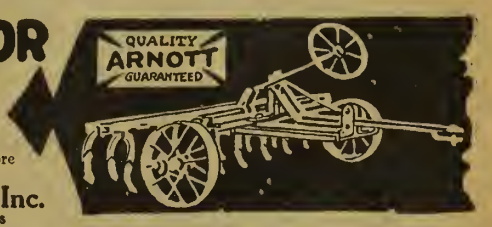

ADD MORE SIZE

prolificacy and early maturity to your herd. We are now offering some excellent young Poland China boars, correct as to type and breeding, that will add these good qualities to your herd. Pork producers will find these boars just what they have been looking for. Write immediately and I will send you full particulars. Prices reasonable.

Les McCracken *Ripon, Cal.*

TAKE NOTICE! THE HIGHEST PRICE paid for a car load of fat hogs at the California International Livestock Show came from the

BASSETT

Herd of Advance Type Poland Chinas

Many firsts, seconds, senior champion sow and GRAND CHAMPION SOW were won in the open classes, proving without a single doubt we are breeding the kind the packer wants and the farmer should raise. Animals of all ages, high class young boars, bred sows and gilts for sale at reasonable prices.

M. Bassett & Son **Hanford, Cal.**

Lakeside Defender

our junior Poland China herd boar is proving a sire of both quality and type. His get show his worth and we invite you to come to the farm and see for yourself. You'll like them as well as we do. Write for what you want and we will describe fully. Prices reasonable.

Geo. V. Beckman & Sons, Lodi, Cal.

What Counts?

More Pork or Show Ring Records—I raise Poland Chinas that produce pork quick—they are also show hogs—but first they must be prolific and mature early.

BIG MODEL FELLOW

my herd boar was reserve grand champion at state fair. He is the sire of the prize winning barrows. Write me if you want this kind.

J. F. McSwain **Merced, Cal.**

BRED SOW SALE FEB. 21, 1920

Blood Will Tell

In the show ring, in the feed lot or on the butcher's block. The Poland Chinas bred by me fulfill all these requirements. They make money for me and they will for you. My prices for good breeding animals are always reasonable.

Eugene Miner **Lodi, Cal.**

Golden West King

was such a superior type of a big Poland China boar that as a junior boar pig he was made GRAND CHAMPION BOAR at the California International Livestock Show. His litter mate, second to him in class was regarded by the judge as practically his equal. My winnings at the State Fair, Stockton, and at San Francisco, prove my claims for superior Poland Chinas. Eastern judges and breeders pronounce them the equal of any seen at the big eastern shows. I have these kind for sale at reasonable prices.

J. F. LEHMAN **LODI, CAL.**

Dairymen, Stockmen---Notice!

GROW MELILOTUS ALBA
on Alkaline or Any Poor Soil

AGGELER & MUSSER SEED CO.

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Write for our Bulletin on Grain

SURFACE IRRIGATION
CORRUGATED AND PLAIN TANKS
MANUFACTURERS OF
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AMERICAN STEEL PIPE & TANK CO.
P. E. Building, Los Angeles, Cal. Branch at Fresno

How Pure Breeds Pay

Too frequently one meets the man who does not believe in the efficiency of pure bred livestock over grades, who figures that "all this talk about fancy bred stuff is poppycock." Such men refuse to apply common sense to their own business because of a deep rooted idea that they are "practical" men. These doubting Thomases are not confined to any one class, some are dairymen, some beef cattle operators, others run sheep and many feed hogs.

It is unfortunate that so many men should look upon pure bred livestock as something apart from their business, as playthings for the few, when as a matter of fact they should make the widest possible use of pure bred sires as a means for cheapening their production costs.

The possibility of increasing the efficiency of one's operations through the use of well bred livestock is so great and has been so conclusively proven time and time again that it would seem as though the demand should be infinitely greater than actually exists.

Take an instance or two, it would seem that every man who is running range cattle would follow some such a plan as has been worked out by the Pacheco Cattle Company on their ranch near Hollister. About 13 years ago when the present owners took over the property the quality of the cattle left much to be desired. No pure bred bulls had been used and the general plan was to market the steers as three year olds weighing around 1,000 pounds. In 1906 a start was made with pure bred bulls, Shorthorns happening to be the choice, and since that time only registered bulls have been used. The steers sold this year, three year olds, averaged over 1,500 pounds. In other words, in ten years' time the use of pure bred bulls increased the weight of the steers 500 pounds, or 50 per cent, and the manager, Mr. Hawkins, expects that the improvement will continue. Not only has the weight of the cattle been increased, but the quality has improved each year and buyers are eager to pay the top price. Can there be doubt that such results have been practical or profitable?

At the San Francisco Livestock Show a feature of the Jersey department was the exhibit of grade cows owned by J. W. Coppini of Ferndale. Coppini has been using pure bred bulls for a number of years and has succeeded in doubling the production of his herd.

Suppose every range outfit in this state followed the plan adopted by the Pacheco farm or that every dairyman used the method of Coppini. Isn't it reasonable to suppose that California cattlemen would have more money in the banks, and that, after all, is why men engage in business.

These mentioned are by no means isolated instances. Many men throughout the country are duplicating the results. They have no monopoly on the system. What they have accomplished others can accomplish. The point is that now is the time to make the start. Aside from the actual profits, the satisfaction of handling a better quality of livestock is an added reward to be obtained.—R. P. R.

Build Your Herd on a Sound Basis

During the last few months the writer has had occasion to attend a number of public sales of pure bred livestock and to visit the herds of many beginners. For the most part the sales and the visits to the newly established herds have afforded a great deal of pleasure and served to strengthen one's confidence in the belief that in the future California would be one of the truly great livestock producing centers. But there have been times when one could not escape the impression that not a few men just entering on a career as livestock breeders were operating without a well founded notion of just what they expected to accomplish. This idea has been gained from noting the apparently haphazard manner in which the foundation for the herd had been assembled.

There is this about the livestock business: the successful production of pure bred animals is a most intricate proposition. While a great deal of knowledge has been accumulated and handed down from generation to generation, there still remains a great lack of definite information. The limitations or possibilities of the business are but vaguely indicated by what has been accomplished. But the work of the master breeders has established one great fact—like usually produces like. It is upon this fact that most operations are anchored and most successful herds and flocks built. The statement that like begets like should not be assumed to be a fixed and proven formula like the multiplication table or a chemical reaction, for many variations occur and many conditions affect the problem, but it can be taken as a guide to successful breeding operations, keeping in mind that care and management are large factors.

If it be true that like usually begets like, then it obviously follows that superior foundation material will be more apt to produce superior offspring than inferior foundation stock, and if one has an ambition to go far in the breeding game he should first of all familiarize himself with the type of animal that is held in highest esteem and get thoroughly fixed in mind the ideal he expects to strive for. He should not expect to "beat the game" with inferior animals, except by a slow improving process in which sires superior to the females are used over a period of time.

Further, the chances for success are increased if, in general, the females of the herd or flock are uniform in type and blood lines and the sire is selected with care to have him above the standard of the females and of bloodlines known to "nick well" with those of the females. The founding of a herd along such lines presupposes that the beginner will give the problem much necessary thought and study before embarking upon his career. We are quite aware that not many herds are founded as suggested, but we do know that most of the successful herds have been and that fewer failures would be recorded if all were.

The sound plan, then, it seems to us, would be for the beginner first to thoroughly familiarize himself with the breed he proposes to handle, and through study, observation and consultation with older breeders learn the type held most modern and the bloodlines through which he can reasonably expect to produce that type. Once having grounded himself in those fundamentals he is in position to select intelligently his foundation material.

A study of the leading herds and flocks impresses one with the marked uniformity of type of the breeding herd and usually when the pedigrees are examined a similar uniformity of bloodlines will be noted—at least this is true of the herds noted for the uniformity of the young things produced year after year.—R. P. R.

BREEDING AND SPECULATION

Gambling is a world old vice that is so deeply rooted in the make-up of the human race that it presents a problem that will never be entirely eliminated, and it appears that there is no end to the devices or means by which those who like the thrill of taking a chance gratify themselves. But a protest should be registered against those who use pure bred livestock instead of any of more common devices, such as cards, stock exchanges, etc.

The above protest is made because there seems to be a growing tendency on the part of a few to regard pure bred livestock a fair means for accumulating speculative profits.

Tho Cultivator has no quarrel with the man who legitimately speculates in cattle, swine or sheep; neither do we have any sympathy for him when he loses if he has taken a long chance.

The pure bred livestock industry is a fundamentally sound business. The economic importance of better blood in improving the common stocks of the nation's livestock is capable of abundant demonstration. Under present conditions, with feed and labor costs at high levels, the problem that confronts every producer is how to cheapen his costs of production, and the general recognition of the possibilities of pure bred livestock in the matter of lowering production costs furnishes a real basis for the general expansion the entire industry is enjoying. If let alone the values registered will be true values, but if a few men attempt to capitalize this legitimate demand and force prices to excessive limits, fictitious values will be established, and fictitious values do not last, and in the crash that is inevitable much harm will be done. A bull or a cow, a boar or a sow, may occasionally be worth $10,000 or more, but to imagine that a large number will be worth such a figure is prima facie evidence of a lack of information that is astonishing.

We read of a litter of pigs that sells for $17,000—and with due regard to the facts we wish to go on record by saying neither that nor any other litter was worth such a price, save as a speculative venture.

We read of other extreme sales and in reference to them we say that the prices recorded were too high.

So far, in this state there has been slight indication that values will get on a speculative basis, but occasionally a straw points that way. When a spring gilt sells for over $3,000 and her litter mate sells for $150 or even $300, there is something radically wrong with values or the method of establishing values.

There is absolutely no reason for speculating in pure bred livestock of any breed. The field here is large, the real breeders are willing to pay good prices and the farmers and ranchers of this state are willing to set legitimate values. The ranchers and farmers of California are not, however, willing to set values beyond the true worth of a sire or dam.

Let California breeders keep values on a sound basis; let them recognize the worth and possibilities of better breeding—but let them also recognize the limitations.—R. P. R.

Save Barnyard Refuse in Compost Heap

The compost pile is a fertile source of valuable material for replenishing the plant food supplies of the soil. Proper utilization of the compost saves much fertilizing material which ordinarily is wasted on the average farm. The expense of making the compost heap is slight as compared with the fertilizing value of the resultant material. The essentials are to equip it with a watertight foundatioon by puddling clay. This is done by spreading the clay 10 to 12 inches thick and then moistening and trampling it thoroughly. A framework of logs or lumber should be built up around the pile and increased in height as the compost heap is built higher.

A layer of leaves, straw, grass, or even weeds, about 18 inches in depth, should be placed over the clay foundation. Above this a layer of manure five or six inches deep should be distributed, and if raw rock phosphate is available, from 50 to 80 pounds should be scattered broadcast over the manure. Then another layer of manure should be added and the process continued. It is essential to keep the pile of refuse moist by sprinkling it frequently. It is also necessary to keep the compost heap well packed and tramped. Ordinarily it takes about a year for the stable refuse in a compost heap to rot sufficiently for use, when it should be spread on the land in the late fall. Thereupon another pile should be started. The fundamental value of the compost pile comes from the fact that the manure is thoroughly rotted and its plant food content is in excellent condition for immediate soil use when applied to the fields, while during its period of decomposition it is maintained in excellent condition to resist leaching and weathering.

Good Cows Need Good Feed

Bossie is one of the champion consumers of the universe, according to results of studies of the United States department of agriculture and Purdue University in the neighborhood of Porter County, Indiana, where Uncle Sam kept tab for two years on the food requirements of about 368 cows that were producing market milk for Chicago. As cow living expenses have increased proportionally to those of the human family, these results are notable as an index to which the average dairyman or the owner of a family cow can refer in "doping out" the menus and amounts of feed which his animal or animals require.

The grand average maintenance and production ration for the good grade cow yielding about 7,000 pounds of milk a year included 2,046 pounds of grain, as well as 3,301 pounds of hay and corn stover, 7,276 pounds of silage, and 720 pounds of straw for bedding. The average cow required a little less than one and one-half acres of good pasture to furnish grazing for six months of the year. To keep her in proper condition and to milk and feed her regularly required 164.5 hours of human labor, as well as 16.2 hours of horse labor to haul the milk.

The studies in Indiana showed that the annual overhead charges for Bossie aggregate $27.11, inclusive of the interest, depreciation and taxes on buildings, cattle and equipment, as well as miscellaneous expenses such as provision and maintenance of cans, pails, dippers, shovels, forks, scoops, lanterns and the like, medicine and veterinary costs, fly sprays, gas engines, windmill and milk wagon repairs and similar items. The cost of bull service, tuberculin testing and cow testing are also included.

The tests show that a calf crop of approximately 87 per cent is usually raised, so that each cow is credited with the production of 0.87 of one calf, as well as the providing of 6.8 tons of manure, which is hauled to the fields as fertilizer.

Massed together under one roof, the grain and coarse feed which Bossie will eat in one year would fill a small barn. Generally speaking, high production of milk is closely associated with a large and healthy cow appetite, and the dairyman who closes his accounting records at the year's end with the maximum net return is the man who provides the greatest variety and a proper mixture of the goodies of the cow world for the bossies of his herd according to their individual production and capacity.

Young Boars and Gilts

sired by Long Jumbo and Yates' Big Orphan. Poland Chinas of correct type and breeding. I guarantee them to please or refund the purchase price. Prices very reasonable. Write for description.

R. J. Yates, Orland, Cal.

Duroc-Jerseys

Bred and raised under right conditions. Correct as to type and size.

D. C. Cummins & Son

VISALIA, CALIF.

READY FOR SHIPMENT

Duroc-Jersey bred sows and gilts. These are the kind you have been wanting to get and we still have some of the real good ones left. Farmers and dairymen start now with the profit making hogs. We deal fairly and our prices are reasonable. Duroc-Jerseys from the Key Herd of the Pacific Coast make good everywhere. Write today for full particulars.

H. P. Slocum and Son

Willows, California

Greenwood Farms

are known as the farms where Duroc-Jerseys of correct type and breeding are raised and sold. This year's prize winning boars and gilts will be sold together with others just as good that were not shown. Get our prices immediately and you will become one of our satisfied customers.

H. C. Witherow, Mgr. Live Oak, Sutter Co., Cal.

WHAT DO YOU WANT?

We have some choice young Duroc boars and gilts. We are making a reasonable price. Foundation animals of choicest breeding.

George Junior Republic Chino, Calif.

also Breeders of Holsteins

Efficiency in Pork Production

is obtained only by the use of breeding animals of proven prolificacy and early maturity. We sell you Duroc-Jerseys of this strain at a reasonable price. Write for particulars.

The Gardiner Ranch R.F.D. 4, Sacramento, Cal.

The Poplars---Hampshire Headquarters

Our reserve grand champion sow Wavelet at the big Los Angeles show is the mother of 8 little Wavelets—a flourishing family. We won 1st on boar and 3 sows bred by exhibitor, also 3 other herd prizes. We were in the money on aged boar, twice on junior yearling boar, and once next the top on junior boar pig. All young stock the get of our great boar, The Harvester Again. Write us your wants.

C. J. Gilbert Lancaster, Cal.

A Few Big, Roomy, Arch-backed Sows and Gilts of Choice Breeding For Sale—Bred For Fall Litters

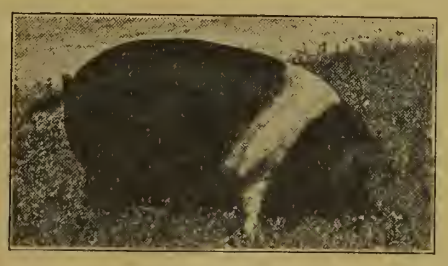
O.U.R. Hampshire Swine

Weanling pigs of both sexes at very reasonable prices. Visit the ranch and see these animals.

Ortega-Underhill-Rancho THOS. T. DINSMORE, Mgr. Santa Barbara, Calif.

Three fine Junior Yearling Boars of unsurpassed breeding and high individual merit.

Business Herd Hampshires



The pioneer grand champion herd of Hampshires is directly responsible for the growing interest in the Hampshire breed today.

It has brought to light the winning blood lines in our big shows. It has furnished foundation stock for numerous new herds throughout the state and is still doing so; 200 pigs bred, bred sows, and sows with litters for sale.

Llano Vista Rancho, F. A. Langdon, Mgr., Perris, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147 at head of our great herd of brood sows.

HARVEY'S CHOICE Grand Champion Boar at Los Angeles 1919

LOOKOUT CHEROKEE Grand Champion at Liberty Fair

SIOUX QUEEN Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager Redlands, Cal.

MERITT-BOWERS SALE

The Tagus Ranch near Tulare will be the scene of another great public sale of livestock and farm equipment on Tuesday and Wednesday, December 16 and 17, when the Meritt-Bowers Company will put up at auction 130 head of beef cattle and 75 head of registered and unregistered horses, jacks and mules, and hundreds of farm implements such as have been used for a short season on one of the great farms of the West.

The Meritt-Bowers Company has decided to hold two public sales a year, spring and fall, making this ranch the market place for farmers of the West seeking pure bred livestock and modern implements for all kinds of farming. The sale last December was one of the most talked of events of the kind ever held anywhere in the country.

The offering this fall will consist of 100 head of registered Shorthorns, 20 of which are of milk strain breeding. Many of the Shorthorns are either sired by or in calf to Knight Avon 2nd, the great bull bred by Dean C. F. Curtiss of Ames, Iowa, and sired by Count Avon by Avondale and he by Whitehall Sultan, a bull around which much Shorthorn history has been written. The Shorthorns present a pretty picture in the great corrals of the Tagus Ranch and are offered in good range condition.

The 30 head of two year old Hereford bulls are a product of pure bred animals on both sides, but being range raised stock the breeding records were not kept up so will be an attraction to range men only.

It has been many years since the number of quality registered drafters has been put up at auction that are offered in the 15 head of Percheron, Belgian and Shire stallions and mares. The Meritt-Bowers Company show string of drafters was one of the attractions at all the fall fairs.

Ord L. Leachman of Sacramento has been engaged to auctioneer and manage the sale, and promises two days of rapid selling.

GLIDE SHORTHORN CHAMPION AT PORTLAND

Little Sweetheart, the sensational two year old Shorthorn heifer owned by Thornton S. Glide, Davis, has added another to her unbroken string of championships by winning top honors at the Pacific International Livestock Exposition held at Portland. Glide has entered Little Sweetheart in the International at Chicago next week, and Western Shorthorn breeders confidently expect that she will be well up in that great show and thus add to the fame that California is winning each year at the greatest livestock show of the world.

Grand Champion at California International

King Morco Alcartra, grand champion Holstein bull, owned by A. W. Morris & Sons Corporation, Woodland.

WATSON TO MANAGE PALO ALTO STOCK FARM

The pure bred dairy cattle interests of this state will be interested to know that Ralph E. Watson, formerly with the Henderson Company, Sacramento, has accepted the position of manager of the Palo Alto Stock Farm, Palo Alto.

The Palo Alto Stock Farm is one of the largest breeding establishments on the coast, maintaining large herds of pure bred Holsteins and Guernseys on the 4,300 acres operated. Watson is one of the best known livestock men of the Sacramento Valley and he takes to his new work experience and enthusiasm that will no doubt place the Palo Alto Stock Farm in a leading position.

FORAGE PLANT SEEDS

During the four months ending with October the United States imported 4,003,700 pounds of alfalfa seed, more than that amount of crimson clover; 3,008,300 pounds of red clover; 2,446,200 of alsike clover, and far lesser quantities of clover and grass mixtures, rape, timothy, redtop, millet, broom corn and vetches, the lightest importation being of broom corn, of which we received but 100 pounds.

A. J. Elliott and H. C. Shinn of Tulare, owners of the big Poland China boar, The Californian, which has attracted so much attention at shows this year, carries the blood of The Pilot, grand champion at the National Swine Show at Des Moines. The boar was sired by Macs Big Orange of Colossal breed and is closely related to The Pilot on the dam side.

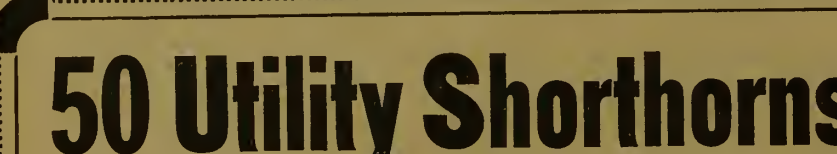
J. Cook of Paradise, Butte County, sold 25 head of pure bred Poland China hogs for $3,700.

Going East to Buy

During January and February I will attend a number of Poland China sales in the east and central west. Am going to buy some for myself and will be pleased to act for you. Send for circular describing my trip and plans in full. A number of buying orders already booked so write me at once.

W. T. Dice, Hanford, Cal.

GARDEN TOOLS



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IRON AGE Tools are Low in Price, and the Best Quality. Look them over when in the city.
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112 S. Los Angeles St., Los Angeles

50 Utility Shorthorns 50

at Public Auction

State Fair Grounds Sacramento, Cal.

Thursday, Dec. 11th

from the

W. C. Short Herd, Reno, Nev.

For this sale which is the initial sale from one of the oldest established herds in the West, the owner has carefully selected a choice lot of well bred, useful young cows, heifers and bulls that he feels sure will be appreciated by those in the market for registered cattle at conservative prices.

The policy of the herd has long been to raise cattle of a character that experience has demonstrated can make good under Western conditions. The females have been selected because of thick fleshing and good milking qualities. The herd bulls that have seen service in the herd have invariably come from the leading Western herds and have been selected for beef, scale, bone and constitution. The young things have in no way been pampered and as they will appear sales day will be real proof of the acknowledged beef making qualities of the Shorthorns.

All the catalogued lots are guaranteed to be breeders, have been tuberculin tested, and are good deep reds.

For catalogs and other information address

ORD L. LEACHMAN

1111 Seventh St **Sacramento, Cal.**

SUREMILK

"A Sperry Product"

The Feed That Tells In The Flow

Your cow, to produce a full flow of milk the year 'round, requires a feed with *five times* as much carbohydrates as protein. Take alfalfa hay, for example. For the amount of protein it contains, alfalfa hay has only half as much carbohydrates as it should.

What your cow needs to make her a really profitable producer is SUREMILK—

A highly concentrated grain feed

It is rich in carbohydrates—containing nearly 64 per cent. It is very low in moisture, ash, fibre and protein—for alfalfa hay or other roughage will supply these more cheaply.

Remember this: just as alfalfa hay is the ideal roughage, so SUREMILK is the ideal grain concentrate. *Together,* they enable the cow to produce the greatest amount of milk with the least drain on her vitality and the least strain on your pocket-book.

STOCK AND POULTRY FOOD DEPARTMENT

SPERRY FLOUR CO.

STOCKTON · CALIFORNIA

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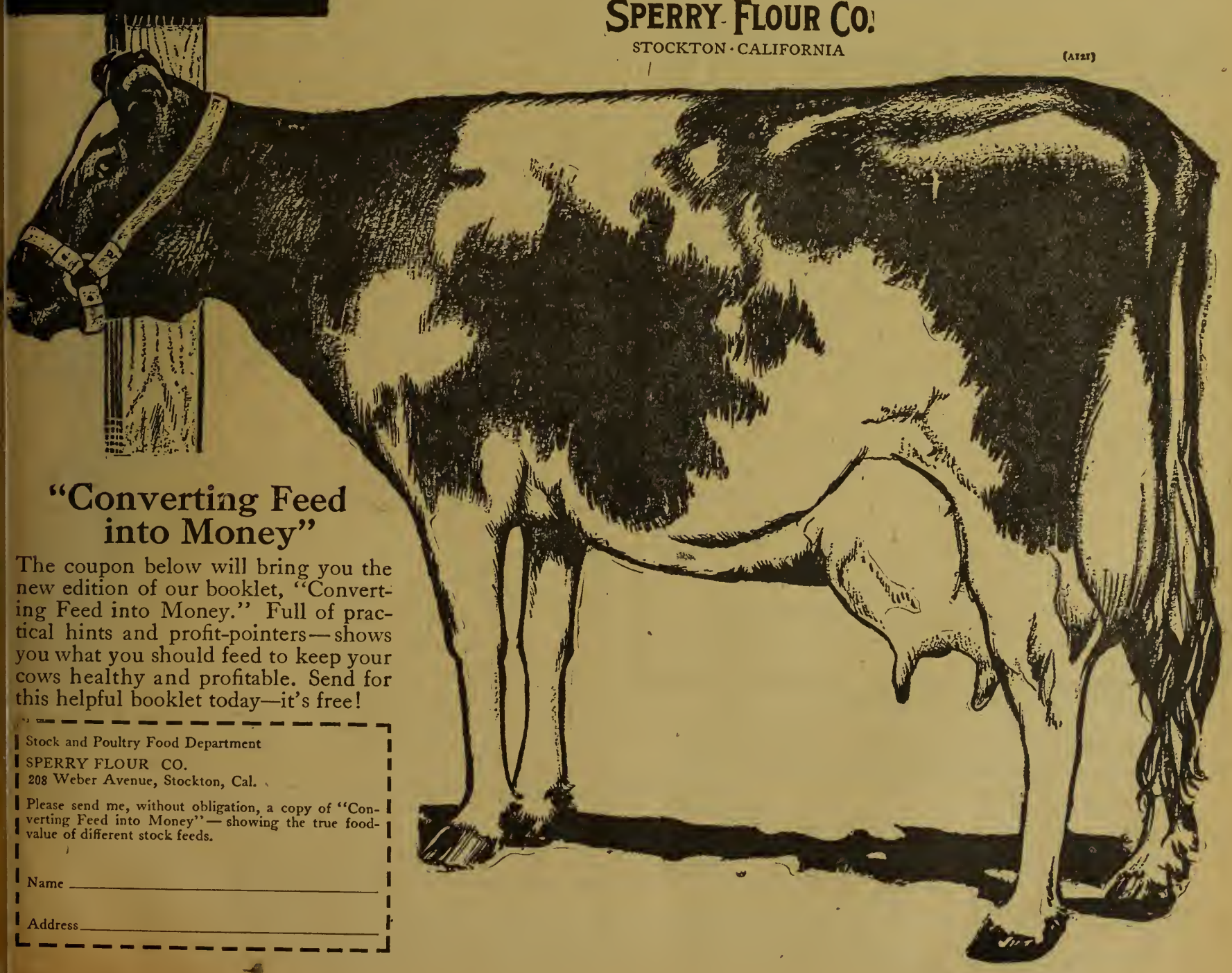

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The coupon below will bring you the new edition of our booklet, "Converting Feed into Money." Full of practical hints and profit-pointers—shows you what you should feed to keep your cows healthy and profitable. Send for this helpful booklet today—it's free!

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Please send me, without obligation, a copy of "Converting Feed into Money"—showing the true food-value of different stock feeds.

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MODERN, efficient farming demands the use of FAIRBANKS Scales.

¶ Every product that you raise to sell may cause you the loss of part of your profits if it is weighed on an unreliable scale.

¶ To know where you stand, you must know the truth about your weights — haphazard, guess-work methods won't do if your farm is to pay a profit.

¶ FAIRBANKS Scale quality is built in at the factory. It is your assurance of dependable weights.

"If it's weighed on a FAIRBANKS, there's no argument."

Fairbanks, Morse & Co.
CHICAGO

PURE HAWAIIAN CANE
MOLASSES

By actual test it will increase pork production half a pound daily over a barley and tankage feed yet it sells for less than half the price.

By actual test it will increase milk production 15 per cent.

Seventy-five per cent of the Blue Ribbon Winners at the Livestock Show were owned by people who are feeding molasses.

If you want increased production at lower costs feed molasses.

Write us at once for prices and interesting booklet telling how to reduce feeding costs.

W. H. Young Company
58 Sutter Street San Francisco

Hauser's Digester Tankage
Gives Greatest Value for Least Money
It Makes Them Fat
Hauser Packing Co. Los Angeles

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. Duke, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

MEAT PRICES

The Nebraska Farmer discusses the matter of producers and consumers prices editorially under the title of "Hog and Pork Prices," as follows:

We learn from figures published by the United States bureau of markets that hogs declined during the month of August from $22.25 a hundred to $17.80 a hundred—a drop of $4.45.

Figures from the same source show that the wholesale price of pork loins at New York advanced approximately $4 per hundred during the same period and at other points the lowest advance showed $2.50 per hundred.

It would thus appear that while the packers were paying $4.45 less per hundred at the end of the month than at the beginning, they were getting from the retailer $2.50 to $4 a hundred more for pork loins. We are informed by a representative of a packing house that the main part of the fresh pork marketed by the packers consists of pork loin. The rest of the hog is made into smoked ham, smoked bacon, dried salt pork and lard. The pork loin is perhaps 20 per cent of the weight of the hog and recently has been selling at higher prices than the other products.

The packers claim that a grave injustice has been done by mentioning the soaring price of loins and not mentioning the fact that the other products of the hog fell in price. An investigation shows that the four products mentioned fell in price about in proportion to the fall in price of live hogs, but that pork loin rose in price in spite of the drop in the price of live hogs. Just recently loin prices have been falling some. This may be due to the publicity given the matter.

And now come the packers with explanations as to why hogs have made such a big and sudden drop. They give only two reasons. The first is that foreign demand has practically disappeared and the second is the agitation against the high cost of living carried on by the government and the report of the federal trade commission and the attorney general against the packing industry.

We find it difficult to make statements issued by the packers harmonize. A short time ago we were told by one of the packers that there would be an unlimited European demand for pork products for years to come. This in itself assured high prices, he said. And now we are told that the foreign demand has disappeared. The reason given by the packers for this disappearance is that the price is so high that the European countries cannot afford to buy.

The second reason is merely a continuation of the plan of the packers to induce the public to oppose any federal legislation. They wish to center our attention on the disastrous decline in hog prices so that we will give no attention to the bills now before congress designed to regulate the packers.

We would like to hear some other reasons. We believe that these alone cannot possibly account for the tremendous and disastrous drop in hog prices, unless back of them should chance to be a reason that there is somebody who could put the prices down or up at will. The fact that the winter packing season is just about to begin may have something to do with the drop.

BARLEY VERSUS CORN AS A HOG FEED

With corn at the present high price hog feeders are trying to find a good feed which can be purchased more cheaply. Barley costs less per pound and hence is being used by a large number of feeders. The University of Missouri college of agriculture has results from a recent feeding trial which indicate that barley makes a very satisfactory corn substitute.

Twenty hogs, averaging in weight about 130 lbs., were divided into two lots of ten hogs each and full fed for forty-nine days. Lot 1 received ground corn nine parts, shorts two parts and tankage one part, while lot 2 was fed this same ration except that ground barley was substituted for the corn.

At the end of the feeding period the hogs fed corn had gained an average of 1.93 lbs. per day, while the hogs fed barley gained an average of 1.85 pounds. Thus the hogs getting corn

I've Saved Enough Time Since I Installed a
LOUDEN Litter Carrier
"To Pay For It 3 Times Over"

That is what one dairy farmer recently told us. And time is not the only factor in cleaning a barn. Shoveling manure every day requires man-power and means labor. A Louden Carrier will save the labor of at least one man. Makes the barn cleaning easier, cuts labor, cuts cost.

SEND FOR CATALOG AND FREE BOOK OF "BARN PLANS."

American Pump Co.
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Dept. B, 420 E. Third St.
LOS ANGELES

Design

What has that to do with power and reliability? It's Holt design that enables the "Caterpillar" Tractor to outpull others of the same rated horsepower. Power reaches drawbar with least loss and friction. Buy a "Caterpillar" Tractor—tested in war and in peace. Send for Catalog 409.

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Preserve Your Strength by Attaching a
NATIONAL BACK REST

To the seat of your tractor or farm machinery. It saves your back and you ride in comfort. The National Back Rest fits on nearly any seat no matter what style or shape, it can be quickly and easily attached without the use of tools. No screws or bolts. Will not slip off. Three dollars delivered. Some agency territory still open. Satisfaction guaranteed or money refunded.

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Jorn Bldg., 57 Plaza Square, Orange, California

Warranted to Give Satisfaction

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Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of **Caustic Balsam** sold *is* warranted to give satisfaction. Price $1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

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Col. Ben A. Rhoades
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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References. The leading breeders in the state. Write or wire for dates and terms.

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Registered Shorthorns
and
Berkshires---Both Sexes

H. L. & E. H. Murphy

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ARE YOU INTERESTED?
In knowing facts about Central British Columbia Cattle Ranges and mixed farming, improved and non-improved, large and small? Write your requirements, resources.

J. H. BROWNLEE, Canadian Land Surveyor,
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JERSEYS

3 BULLS	No. 1 born Mar. 11, 1918. Sire, our Noble Mayfair Hero.	3 BULLS
No. 2 born Oct. 1, 1918. Sire, our Kathie's Eminent.	All from high record cows in Arden herd.	No. 3 born Dec. 20, 1918. Sire, same as No. 2.

ARDEN DAIRY CERTIFIED, EL MONTE, CAL.

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

GUERNSEYS

Butter Fat at Lower Cost per lb.

No other breed can produce rich golden butter fat as cheaply as the Guernsey. Official yearly records show—one cow has given 24,008 lbs. milk and 1,098 lbs. butter fat. Write for our free booklets.

QUALITY ECONOMY QUANTITY

The American Guernsey Cattle Club,
Box C 40, Peterboro, N. H.

gained more rapidly, but they also consumed more feed.

Lot 1 (corn, shorts and tankage) gained 100 lbs. on each 409.9 pounds of feed, while lot 2 (barley, shorts and tankage) required 426.6 pounds of feed for 100 pounds gain. In other words, for each 100 pounds of pork produced about four per cent more of the barley ration was required than of the ration containing corn.

These results are inside the allowance usually made, namely that ground barley has about 10 per cent less value than corn as a swine feed.

Owing to its hard flinty covering barley should be ground or rolled for hog feeding purposes. Since its composition is very similar to corn, like corn it should be supplemented with feeds like shorts, tankage, linseed oil meal or milk by-products.

WHAT IS A TON OF MANURE WORTH?

Trials made on the various experiment fields throughout the state by the University of Missouri college of agriculture have shown that an average application of eight tons of manure to the acre once in four years has increased the yield of corn 10.5 bushels, oats 5.17 bushels, wheat 5.24 bushels, and clover hay 937 pounds. At prices which prevailed the first of the year this increase would be worth $4.83, and at pre-war prices $2.34, for each ton of manure applied. It will cost the farmer not more than one dollar a ton to collect the manure and haul it to the field. This would leave a net profit of $3.83 at present prices, or $1.34 at pre-war prices, for each ton of manure applied. The full value of the manure is usually not obtained during the first four years, for it leaves the soil in better condition and its effect upon later crops is often quite significant. This becomes more noticeable after the first two or three applications, since a liberal application of manure every four years will result in permanent improvement to the land.

By very careful handling of manure a livestock farmer on average soil should be able to return annually about two tons of manure per acre to his cultivated fields. It is not easy to save this amount except by very careful methods and persistent effort. It is necessary that all straw and other suitable materials be worked through the barns as bedding. This not only adds to the comfort of the animals but serves as an absorbent for the liquid manure. If straw piles are sold, burned or left to rot it is of course impossible to return this amount of manure.

Keep the manure together; don't let it get scattered about the barn or lots. Hogs and chickens may waste much of it. Where possible haul it to the field as soon as produced. If this is not possible store it in shallow concrete lined pits to prevent leaching. Use plenty of bedding in the stable or on the feeding floor to absorb the liquid. Straw, old hay, grass and leaves may be used for this purpose.

About 35 per cent of the nitrogen and 55 per cent of the potassium is to be found in the liquid material. There is, however, practically no phosphorus in this part. The plant foods in the liquid are all in soluble form and are very easily lost through leaching. Furthermore, the nitrogen in this liquid portion readily passes off as ammonia when the manure is allowed to ferment, hence the necessity for preventing fermentation as far as possible.

The total solid and liquid manure produced in a year by a well fed, mature horse is about eight tons, with a plant food value of more than $30. In the case of a well fed steer weighing from 1000 to 1200 pounds the production is nine to 11 tons, with a slightly greater total value than the the manure from a horse.

Three to five months exposure to the weather in an open lot may cause manure to lose approximately one-third of its plant food. If manure must be exposed to the weather it should be in a pit with a water tight bottom.

The 1000 lb. Sale

Every female in this sale has a 1000 lb. yearly butter record, is out of a 1000 lb dam, is by a 1000 lb. sire, or is bred to a 1000 lb. bull

No other sale of registered Holsteins ever held anywhere in the world has closely approached this one in 1,000 pound yearly butter record breeding.

70 Young Registered Holstein Cows and Bulls

at Public Auction for

A. W. Morris & Sons Corporation

(Woodland, Cal.)

State Fair Grounds, Sacramento, Cal.

Thursday, December 18, 1919

Fire destroyed the big cow barn, the season's crop of alfalfa hay, a large quantity of mill feed, and the four large silos, on A. W. Morris & Sons Farm, early in November. An immediate reduction in the size of the herd must be made, and a large number of great females will be sold that ordinarily would not go out of the herd at any price.

A very considerable percentage of the females are three and four year olds, mostly daughters of the great yearly record bulls that have been bred and developed in the Morris herd, representing the breeding that has made the herd famous the world over.

Every female in the sale will either be fresh or bred to one of these three bulls: SIR AAGGIE DE KOL MEAD, son of the 1,100 lb. 3 year old heifer, Miss Valley Mead De Kol Walker; KING MORCO ALCARTRA, son of the world's greatest dairy cow, Tilly Alcartra; KING AAGGIE MEAD, son of the 1,000 lb. cow Aaggie Acme of Riverside, and full brother to the world's strictly official yearly butter record cow, Aaggie Acme of Riverside 2nd.

Bulls in the Sale

Every bull of service age in the Morris herd, except the herd bulls, will be sold in this sale. There are only ten of them, and buyers who expect to secure a service bull from the Morris herd this year will need to be on hand at this sale. Every one of them is by a 1,000 lb. sire or by a sire that has produced a 1,000 lb. daughter.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER

NO ANIMAL IN SALE IS TUBERCULIN TESTED.

Catalog Free on Request. Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Pres. C. L. Hughes, Sales Manager,
Sacramento, California
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—
Milk 338 days 13,849.40
Butter 866.23
At six years—
Butter seven days 34.13
Milk 532.40
At five years—
Butter seven days 28.85

She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.

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One at the head of your herd will pay big dividends on his cost. Write to

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have stood the rigid test of time and well deserve the commendation they have received from some of the leading breeders of Poland China swine

SIZE with QUALITY is found in this herd

King's Massive Orange—McCune's Buster, by Giant Buster and a son of Surprise Prospect are herd boars that will leave a lasting impression on the breed in this state.

H. D. McCUNE LEMOORE, CAL.

Just remember I will sell in Hanford, January 24th, 1920, Poland Chinas bred right, grown out right and the right type.

When Writing Advertisers, Mention the Cultivator.

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holstein Cattle

December 18-19, A. W. Morls & Sons, Woodland.

Berkshire Swine

February 14. J. Francis O'Connor, Santa Rosa.
February 15. F. J. Sandercock, Sacramento.
February 16. Muddux & Son, Sacramento.
February 18. Western Berkshire Congress, Davis.

Duroc-Jerseys

January 14. State Duroc-Jersey Breeders Association consignment sale, Davis.
January 15. Harvey M. Berglund, Dixon.
January 28, Diamond Bar Ranch, Spadra, Los Angeles County.
January 29, Winsor Ranch, Bonita, sale in Los Angeles.
January 30, Ireland Ranch, Owensmouth Los Angeles County
February 4. Fresno County Duroc-Jersey Breeders Association, Fresno.

Poland Chinas

January 10. Fred Gatewood, Fresno.
January 17. Bassett, Ross and Crawshaw. Hanford.
January 24. H. D. McCune, Hanford.
January (date later). Chas. Gatewood, Fresno.
January 27. Geo. V. Beckman and Sons, Lodi.
January 31. Hale I. Marsh, Modesto.
February 3. Les McCracken, Ripon.
February 6. Tulare Poland China Breeders Association, Tulare.
February 12. San Joaquin Poland China Breeders Association, Lodi.
February 21. Merced County Poland China Breeders Association, Merced.
February 28. Kings County Poland China Breedrs Association, Hanford.
March 13. Haag & Bernstein, Hanford.

H. D. McCune, Lemoore. one of California's popular Poland China breeders and a member of Kings County Poland China Breeders Association, announces that he will hold a public sale of big type Poland China swine in Hanford, Saturday, January 24. Mr. McCune is using as herd boars Kings Massive Orange, grand champion at the last Fresno fair, McCune's Buster by Giant Buster. and a son of Surprise Prospect. In this sale there will be 30 daughters of Kings Massive Orange bred to McCune's Giant Buster. the Surprise Prospect boar, The Californian, by Mc's Big Orange, The Yankee Jr. and other noted boars, as well as animals sired by Lendorris Liberty Bond, The Yankee Jr., The Californian, Kings County Buster, Wondergerst, Kings Big Bone Leader and Young Jumbo. Also included in the sale will be a young boar and gilt by Suprise Prospect out of Edith Rose and litter mates to the gilt that sold for $1,250 in the last consignment sale of the Kings County Poland China Breeders Association. Mr. McCune states that it is his ambition to make this sale one of real class and quality and it will in every way be of credit to the breed.

Chas. Gatewood of Fresno will in January disperse his entire herd of Poland Chinas, including the 1919 grand champion boar Giant Bob. For some time Mr. Gatewood has been in poor health and for this reason he has decided to sell all his hogs, lease his ranch and for a time retire from active work. Last spring he made a trip through the central west, selecting a car of Poland Chinas for a foundation herd with the view of forming one of the great herds on the coast. He secured a sufficient number of animals that would have permitted him holding a sale this winter and at the same time reserve a number for his own herd. Poland China breeders will learn with regret that poor health necessitates the retirement of Mr. Gatewood from the ranks of the state's Poland China breeders, but no doubt will appreciate the opportunity offered in his forthcoming sale. The sale will be held sometime in January, probably between the 20th and 30th of the month. Much speculation is rife as to who will be the new owner of Giant Bob.

W. T. Dice, one of Kings County's leading Poland China breeders, is planning an extensive trip through the East and will visit a number of the leading Poland China breeders as well as attend a number of the sales that will be held during January and February. Mr. Dice will purchase a number of animals for his own herd and has been commissioned by a number of breeders to secure stock for them.

Marshall and Son, Poland China breeders of Sebastopol, have added to their herd Mouw's Special 7th, a 14 months old boar by Mouw's Special.

The large number of sales of swine scheduled for the first three months of the coming year makes a good many wonder if market conditions of the state warrant so many offerings. Some 25 or 30 sales are already announced with others in prospect, and it's to be hoped that they will be met with a hearty response. A strong effort should be made to get the farmers interested in the communities in which the sales will be held, as this is the real reason for holding public sales.

The Poland China Breeders Association of Fresno County held what they termed a mixed sale on the Fresno fair grounds November 19. While a number of good bred sows were offered, it consisted mostly of young gilts and young boars. The top of the sale was the sow Blue Valley Lady B., consigned by Chas. Gatewood and bred to the grand champion boar Giant Bob. She was purchased for $300 by J. S. Rogers, Chowchilla. A. Buckland and Son sold the gilt Ruby's Daughter, bred to Blue Valley King, for $225 to Mason and Sherwood, Sanger, while Walter C. Ficklin sold the open gilt Hadley's Beauty with the breeding privilege to his new boar Fresno Evolution, a son of Evolution,

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Giant Bob Will Sell

The Grand Champion Poland China

boar of 1919, 45 bred sows and gilts are to be sold in my complete dispersion sale in January. Every animal in sale is big type, personally selected by me from some of the best eastern herds.

Chas. Gatewood, Fresno, Cal.

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LOUIS BAHRS, Loomis, Cal.

to M. Bassett, Hanford, for $165. The other animals in the sale, mostly young things, sold from $40 to $130. Taking everything into consideration, the sale was very satisfactory. Col. Geo. W. Bell was the auctioneer.

A Grand Champion Poland China

Poland China boar, grand champion at the Los Angeles Livestock Show, owned by Mrs. Viola Renwick, Santa Barbara.

C. B. Cunningham of Mills writes that he is now offering for sale every animal of the Billiken herd of Chester Whites. This includes aged boars, young service boars, bred sows, gilts, in fact everything. Mr. Cunningham has some of the finest of the Whites and this affords rare opportunity to their admirers.

The Burr Farm, Los Angeles, reports that the grand champion cow at the Riverside fair, Durmelia 2nd, and Duchess Orndyke Sadie Vale, winner of first yearling and junior champion at the Los Angeles Livestock Show, are both now on official test. Durmelia 2nd as a ten year old made in seven days 697.7 pounds of milk and 23.12 pounds of butter 30 days after calving. She is going right along milking about 100 pounds of milk a day. Duchess Orndyke Sadie Vale at 22 months old made 396.8 pounds of milk and 18.14 pounds of butter in seven days. Another cow in the herd, Roderick Netherland 2nd, made 594.5 pounds of milk and 19.8 pounds of butter in seven days. We have just closed a ten months' test on the two year old heifer Fidessa Candida Burke De Kol, and she has produced 11,512.2 pounds of milk containing 509.85 pounds of butter in 305 days. She will freshen again in the early part of December.

R. F. Guerin, Holstein breeder of Visalia, writes that he has just completed a seven day test on Glendora of Sunnyside. She making 23.10 pounds butter. She is a junior two year old and a daughter of Sir Veeman Korndyke Pontiac, a son of Sir Veeman Hengerveld who has 117 A, R. O. daughters, 18 of them making over 30 pounds of butter in seven days. This is the second daughter of Sir Veeman Korndyke Pontiac to make 20 pounds of butter in seven days as a two year old. There are 28 more daughters of Sir Veeman Korndyke Pontiac in Sunnyside herd to freshen soon, and if they all do as well he will be a sire of note.

In a recent letter from A. Buckland and Son, Poland China breeders of Fresno, they write: "Our sales for the past week have been three December gilts to the Kern County pig club boys; one service boar to R. C. Whitworth, Hanford; one service boar to Frank Schofield, Fresno; five March gilts to Madera high school pig club boys; five September sow pigs and one boar to Madera County pig club boys; one service boar to Fred Wheaten, Helm. We have a fine litter out of Lady Progression 3rd sired by Liberty Bond, that is coming in fine shape. Our Hawk Eye Giant gilt that we just purchased from I. J. Conrad, Melbourne, Iowa, is to be bred to Orange Boy and we are expecting something great from this mating."

Allen Thompson of Tulare and Joe Chenowth of Visalia, joint owners of Lord's Orion Cherry King, a prize boar shipped by them from Indiana last year, have sold the animal to Way and Lamb of Modesto for $500. Mr. Thompson, whose herd was sold almost entirely to the Boston Land Company of West Haven a short time ago, has purchased a number of animals from the Thorp herd at Stockton and will continue breeding.

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ENTIRE HERD FOR SALE

Every Animal Listed and Priced

An opportunity to secure some of this blood and type at extremely low prices.

Herd Boars Young Service Boars

Bred Sows Bred Gilts

SEVEN LITTERS OF FALL PIGS READY TO WEAN. One litter sired by Billiken. One litter sired by Wildwood Boy. Three litters sired by Bonnie Model. Two litters sired by Big Joe Fancy. WRITE FOR SPECIAL PRICE LIST.

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Built to meet the work—not to meet a price

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The 16-valve motor, valve-in-head type, burns *all* the kerosene that goes into it, so complete is the clearing due to the double valve capacity. And the power delivered gives a surplus far beyond the rating.

Just as the 16-valve design guarantees its economy of operation, the construction assures steady service for a generation. The cylinder sleeves are removable—reboring never necessary. The "whip" of vibration is reduced to harmlessness by the finely counterbalanced crankshaft, drilled for force-feed lubrication.

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On motor and transmission mainly depend the life and service of the tractor. But every part of the Twin City "12-20" is designed and built up to the same rigid standards of excellence.

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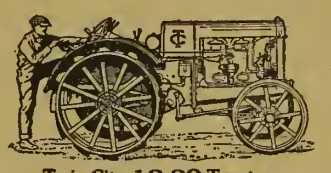

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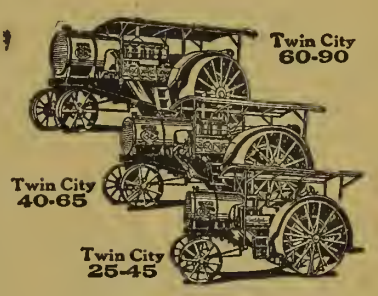

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Semi-solid buttermilk is pure creamery buttermilk, with nothing added—only the water is taken away. It is not modified by the addition of sulphuric acid or any other preservative. Its own NATURAL LACTIC ACID keeps it fresh.

We Guarantee Every Barrel of Semi-Solid Buttermilk.

We guarantee that semi-solid buttermilk is pure and unadulterated, sterilized and pasteurized. It is a SAFE feed, and you will be satisfied with the results from feeding it.

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Saves GRAIN, because it balances the grain ration. Saves TIME because hogs and poultry fatten quicker when fed semi-solid. Saves MONEY because you don't pay freight on the water content of the buttermilk, and you don't have to feed so much high-priced corn.

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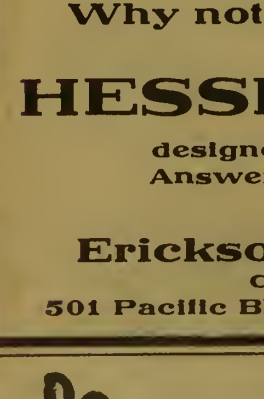

for BABY CHICKS; raises every one; keeps them healthy and vigorous. No sickly or dead chicks.
TRY IT.

FOR LAYING HENS—The egg production increases at an astonishing rate. Keep accurate account, and TRY IT.

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We know what SEMI-SOLID BUTTERMILK will do. Don't be skeptical, but try it, to be convinced.

A carload per week is consumed in the Petaluma District alone.

Semi-solid buttermilk is put up in 500-lb. barrels, half barrels, quarter barrels and 10-gal. kegs. Have buttermilk when you want it. Semi-solid keeps in any climate, any length of time.

Order from your dealer. If he can not supply you, send your order to Dill-Crosett, Inc., 235 Pine St., San Francisco, and we will supply you direct from our factory at Benicia, California. You pay on receipt of the goods.

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Sanguinetti's Quality Brand
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Unexcelled for Germination, Purity, Color and Productiveness

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PIPE—Practically all sizes from ½ to 15 inches.
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All pipe and casings have good threads and couplings on each joint.
RIVETED PIPE — 4 to 12 inches, as good as new.
We also carry valves and fittings.
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The Problem of Fertility

By Jean A. Koethen

WHOEVER attempts to discuss the subject of fertility may as well admit at the beginning, with Portia, that it is far easier to say what ought to be done than to do it. Why is it that in the same pen one hen lays fertile eggs and another does not? Why is it that some seasons all the breeders talk about "rotten fertility" and one is lucky if he gets six chicks from 15 eggs? Why is it that the more highly bred our birds are the fewer fertile eggs (very often) can they be induced to lay? If I could answer all these questions and the hundred others that clamor to be answered I should be very proud indeed. As it is I can only make a few suggestions that may prove helpful to the beginner who perhaps fondly imagines that all he has to do is to put a male bird in the pen with 10 or 12 females and the thing is done.

This whole train of thought was suggested to me by a breeder at the Riverside show, who complained of the poor fertility last spring, blaming that for the small number of young birds that were ready to be shown in October. He and a good many others lay the poor hatches to the unsatisfactory ration our hens have had to endure now for several years. One breeder last spring, I remember, blamed the large amount of barley that has been fed for the poor hatches that came from both incubator and hen. Is it true that feeding influences fertility? If so, to what extent, and is there any way of overcoming this influence in such a time as we are passing through when unsatisfactory feeds must be used?

Causes of Infertility

Fertility, we must first fully understand, is not obtained by any one factor. Just as death so often is brought about by a "complication of disorders," so infertility arises from a complication of circumstances, some of which we see and understand, some of which we may never understand. One of the lecturers at the poultry school last spring named the following as contributing causes of infertility: Breeders of low vitality, too old, too young or too fat; lack of exercise; insufficient green feed; too many females to one male; confinement in too small yards.

Analyzing these causes we find they may be classified under the headings: constitutional vigor, environment, feeding and mating. Failure in any single one of these particulars, though all the rest are perfect, may produce infertile eggs. If hens are overfat, for instance, that is reason enough. If the male is mated to 15 hens when he can care for but ten, that is reason enough. If the ration is not right, that again is sufficient. If we can find no other reason, we can always explain infertility by those magic words, "low vitality," or "lack of vigor," for vitality and vigor are something that can neither be seen or otherwise apprehended. That is why this matter of fertility is so slippery. Always as we think we are about to grasp it, it slips away. No matter how perfect environment and feeding may be, it still eludes us on the score of vitality.

Breed From Hens

After all, small as our knowledge is there are still things we may do to encourage fertility. Whatever increases or conserves the health and vigor of the breeders ought to make them more able to pass on that vitality. Exercise is certainly necessary to health, and confinement in small yards is to be condemned because it discourages exercise. Age is important because it affects vitality. The immature hen has not the vitality of a two-year-old, hence we are told not to breed from pullets but to reserve the mature hens for breeders.

The male, it will be noticed, matures earlier and deteriorates sooner as a breeder than the female. I have had good fertility when the male was a cockerel of seven months, and ten months is old enough for all breeds, except perhaps the Asiatics. On the other hand, a cock of two years is often, perhaps usually, past his prime. The mating that is generally preferred is that of a cockerel of ten to 12 months with two-year-old hens. The hens are fully mature while the cockerel has the vigor of youth.

The number of hens to be used with one male depends largely on the season and to some extent on the breed. A White Leghorn cockerel in the spring may be able to take care of 20 hens when in the summer 15 is sufficient and in the fall not more than ten or 12. An Orpington should not be mated to more than 12 hens in the spring and eight in the fall. Indeed, a successful Orpington breeder once told me that if I wanted really fine birds I should mate but four hens to a male. We are speaking, however, of fertility, not quality.

Possibly some will take exception to what I have just said about number in matings. If they do I can only say that much depends on the vigor of the individual bird. Some cocks keep their vigor much longer than others and some have more to begin with. The only way to be sure is to test your fertility by setting a few eggs. If fertility is under 15 per cent cut down the number of hens.

Difference in Hens

If the per cent of infertile eggs is still too large after the number of hens is reduced, it is a good plan to test the hens themselves by hatching eggs from each one separately. I still remember my disappointment several years ago, when after a hen had sat on a nest full of eggs from a particularly choice hen (as I thought) for three weeks, investigation showed every one infertile. Why this was the case I do not know. Perhaps the cock neglected her. The lecturer I quoted failed to mention favoritism, but that is a factor not to be overlooked. Perhaps, as she was an unusually prolific layer, she had lowered her vitality. Perhaps she was overfat. I recall another hen last spring, that season when hatches were uniformly bad. This old hen did not lay many eggs but she had been such a good layer that I was glad to get eight of her eggs together and spare a hen to hatch them. From these eight eggs I got seven husky chicks, when from other hens I got seven chicks from 15 eggs. Why? I don't know, but it is evident the hen herself is no small factor in determining the fertility or infertility of her eggs.

The proper environment for breeders is one of comfort. This is no doubt the reason free range for at least part of the day is so often advised for breeders. Possibly it is be-

Coulson's Baby Chick Milk Mash

The Best Feed for first six weeks

Write for particulars

Coulson Co.

Petaluma, Calif.

cause the breeding yards from which most of our fancy eggs come are small that there is such a large per cent of infertility among them. The hen that is free to wander in pasture and orchard and garden, picking up bugs and worms and nipping the young tender green ought to be more contented and more comfortable than the hen confined in a stuffy little pen, for this is her natural habitat. She gets exercise while she picks her green feed and ought to have more vitality because of it.

Feeding for Fertility

My university lecturer discreetly omitted any mention of feeding for fertility, except as to green feed, which is important enough. Greens contain that indefinable something called vitamines which affect the health out of all proportion to the actual nourishment they contain. Some hens may be vigorous and healthy without green feed, but they are the birds of extraordinary vitality, the sort you can only kill with a club. As to the grain ration most conducive to fertility we know very little except that a fattening ration is not good. Oats and wheat have generally been considered the best grains for breeders, especially oats. Rolled oats, the sort we use for breakfast, and sprouted oats are time honored feeds for breeding stock. Possibly this is because they contain more ash or mineral matter than corn, barley or even wheat. A preponderance of whole grain rather than too much of the forcing mash fed to layers is also recommended, as is fresh meat occasionally. The ideal ration for breeders would be a bran mash in the morning, for bran contains both protein and ash, fresh lean meat at noon, two or three times a week, and sprouted oats the other days, oats and wheat at night and green feed all day on range. I do not know of any one who feeds his breeders in this way. Doubtless it would cost too much, but it is the ideal breeders' ration. Breeders must be well nourished, but they must not be fat. They must have food that they can digest without clogging their digestive tracts with crude fiber. They must have green feed and protein, and, it goes without saying, fresh water and shell and grit. Even on the most perfect ration they may still fail to produce fertile eggs, but we shall have done our best.

When it happens, as it has of late, that the grain feeds which are known to encourage fertility are either too expensive or not to be had at any price, our only course, as I see it, is to make environment and the other factors which are involved more nearly perfect than ever. If we cannot feed oats, we can at least give some range and plenty of greens. If wheat is not to be had we can at least feed a little lean meat to some of the breeders. It is not always necessary to have a large number of breeders, but it is extremely important that those we have be vigorous and well nourished. With all our care, however, we shall still continue to have infertile eggs, I presume, till we have learned just what part the individual cock or hen plays. Feeding, environment, age, vigor, all count, but there is a secret we have not learned. When we do learn it we shall know just why under the same conditions one hen lays fertile eggs while another does not.

Poultry Queries

Conducted by J. A. Koethen

Turkeys Sick

Please tell me what to do for my turkeys. They seem to be smothering to death, go around gasping for breath. We opened a dead bird and found the lungs badly infected. Whatever it is it seems to be contagious. — Subscriber, Brawley.

It is impossible to say from the very brief description given whether the turkeys are suffering from aspergillosis, which comes from the development of mold spores in the lungs and bronchial tubes, or from congestion of the lungs or possibly pneumonia, which is an extreme congestion accompanied by fever. Nothing is said about fever or about the behavior of the sick birds, except that they are gasping for breath, nor am I told how many have shown symptoms of the disease, how long it lasts or how many have died. If it seems quite general in the flock I am inclined to think it must be aspergillosis, for pneumonia is rare among turkeys and would be very unlikely to affect more than an occasional bird. Whatever the disease there is little that can be done for it except to remedy conditions. Examine the feed and scratching litter carefully and make sure there is no mold anywhere. It is the tiny mold spores in moldy or musty or "heated" grain that find their way to the lungs and there develop into yellowish or whitish tubercles not unlike those of tuberculosis. This may have been the infection you found in the lungs of the bird you opened. Put the affected birds in a warm, dry place—an open front coop which faces the sun is best—or a sunny, well ventilated room. Give them dry, clean straw to lie on, and all the green feed they will eat. For pneumonia Dr. Sanborn recommends one grain of phenacetin and one grain of sulpho-carbolate of zinc made into a pill with bread. This is given every six hours. A drop of tincture of aconite in milk every two hours relieves the hard breathing. Dr. Salmon advises flaxseed tea used as a drink and also with one grain of nitrate of potash dissolved in it three times a day. If the disease is due to mold these remedies will do no good. If it comes from taking cold they may help. In any case they will do no harm, but the main reliance must be on removing the cause.

Raising Squabs

Is there profit in raising squabs? Where could I get the right kind of stock? Where could I get reliable directions for raising and care?—Subscriber, Van Nuys.

The National Standard Squab Book by Elmer E. Rice gives complete directions for establishing a squab plant. I do not know its price, but you can find out by writing to Elmer C. Rice, Box 175, Boston, Massachusetts. I have been told that raising squabs is not profitable under present feed conditions, but you will find out more certainly by interviewing some large pigeon growers. I am mailing you the names of several whom I think you will find reliable.

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Prune and Apricot Orchards for sale, all sizes; full bearing, well located, with improvements, for $1,500 to $2.000 per acre. DAIRY RANCH, 170 cows, 432 acres leased land, near town and depot. 70 ACRE MOUNTAIN ranch land; good; 1,000 cords oak wood; $40 per acre. 51 ACRES best pear land, house, barn, lots of water, good location; $375 an acre. Address John G. French, Santa Clara, California.

Will Sell 80 acres undeveloped from my 320 acre alfalfa, pear and apple ranch in Antelope Valley, 8 miles east from Lancaster, identically the same soil and water conditions and adjoining the 240 acres now developed; 70 to alfalfa, 20 to apples and 10 to pears, balance to barley, kaffir and rye; 28 foot water lift, rich silt soil. See or write W. B. Stirdivant, 909 Baker-Detweiler Bldg., Los Angeles.

Snohomish County, Washington — 6,000 acres of the finest dairy, berry or general high grade farm lands in the northwest; rapidly improving section; no drouths, bumper crops; tracts, 1 to 80 acres; ten yearly payments. This is your opportunity. Send for literature. Browneli Land Co., Birmingham, Washington.

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For Sale—240 acres good alfalfa and orchard land; good climate; 58 miles from Los Angeles. All fenced and cross fenced. Also have some improved land nearby. John Rouff, Palmdale, California.

For Sale—80 acres 2 miles east of Earlimart in Tulare county. Domestic well is only improvement. Splendid soil in settled sections. $90 an acre. W. F. Marks, 226 So. Main St., Los Angeles. Phone Main 1499.

Fine Alfalfa Land Northern Los Angeles County, easy water lift; $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

Best Land Buy in the State—For particulars and description refer to this column of Cultivator of November 8th and write: Wm. H. Overholtzer, Coachella, California.

For Sale—Relinquishments from $50 to $1,000; also well drilling rig for sale or lease. Proven water district; fine opportunity for contract water well work. A. C. Vestal, Wagner, California.

TREES

Nursery Stock. Apples, pears, peaches, cherries, prunes, plums, berries, etc. OURS IS MAIL ORDER SYSTEM. IT SAVES YOU MONEY. Write us now for Planters' list. 20 years in business. Carlton Nursery Co., Carlton, Oregon.

Wanted—Black Walnut seedling nursery. Will buy or graft on shares. Have my own scions, Eureka and Placentia Perfection. The Walnut Nursery, W. A. Litten. Prop., Whittier, California. Phone 6294.

Wanted—1000 or more seed nuts of California Black Walnuts, also 200 Placentia Perfection Walnut Trees on black walnut roots. W. E. Hyer, Del Mar, California.

For Sale—Unrooted Grape Cuttings; also a limited supply of rooted Tokay and Cornichon grapevines, and several thousand almond trees. Burke's Nursery, Lodi, California.

For Sale—French Prune, 4x6 and 3x4, on almond and peach root; some Myrobolin root. Write for prices. W. M. Burton, Box 43, Porterville, California.

For Sale—3,000 select orange trees. Also 3,000 lemon trees; first class trees; 20,000 seedbed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—3,500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

AGRICULTURAL IMPLEMENTS

For Sale — Several plows, harrows and cultivators slightly used or shop worn. Cheap to close out. Call and look at them. Arnott & Co., Inc., 112 S. Los Angeles Street, Los Angeles.

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Special Notice—to every cow owner. We all admit it's a pleasure to milk a cow that doesn't KICK or step about or switch her tail when being milked. If the opposite happens it's most enough to annoy a Preacher. All these bad habits are entirely overcome by the use of Our MILKMAN'S COW CLAMP. It's safe for both cow and milker. It makes a vicious kicker stand as quiet as a lamb. In Fly time no Bang Bang on your head with her tail. She stands quiet while you milk with peace and safety. It is simple, easily adjusted, put on and removed in half a minute. Makes milking a pleasure. One user remarked, "It's worth its weight in gold." No getting out of order, will last a life time, order one today and be happy forever. Price prepaid—$5.00 or five for $20.00. Solicit your neighbors and get yours free. Send P. O. Money Order made payable to I. S. Overholtzer, R. 1, Box 13, Covina, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Guernsey Bull for Sale—Rivals Prince, 26,162, dropped May 1, 1913. Large individual weighing over 1600 lbs., sure breeder, good disposition. Richard L. Gibbs, Fairmead, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—20 Head Registered Holsteins bred to King Riverside Mead, 1003 lb. bull. A. B. Comfort (owner), Guernsey, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Golden Glen Stock Farm registered Jerseys and Shropshires. Geo. W. Thomas & Sons, Riverside, California.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Nuevo, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Fillbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

WANTED

Wanted—Budded citrus trees in exchange for 80 acres Coachella Valley date land one-fourth mile from R. R. station. Might consider walnuts or other deciduous trees. Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena.

Expert Agriculturist—Horticulturist, experience California, Texas, Mexico wants management or adviser agricultural, horticultural, irrigation or citrus fruit operations. Address E. A. Learn, P. O. Box 253, Los Angeles, California.

Wanted—A Few Thousand Malaga and Thompson Seedless Grape Vines. Some Umbrella Trees. Grape Fruit and Apricot Trees. Imperial Valley Nursery and Seed House, El Centro, California.

Wanted — A Nurseryman. One who thoroughly understands balling plants. Apply to: Coolidge Rare Plant Gardens, Pasadena, California.

Wanted—40 Lombardy popular trees, 10 ft. or more. Also peach trees and grape vines. Must be large and well rooted. W. E. Hyer, Del Mar, California.

Good Ranch Wanted—Send description and price. C. C. Shepard, Minneapolis, Minn.

Wanted to hear from owner of farm or fruit ranch for sale. O. O. Mattson. St. Paul, Minn.

Wanted Herdsman—Apply in person or by letter. D. D. Elmore Dairy Ranch, Baldwin Park, California.

TURKEYS

GIANT BRONZE TURKEYS

The Gold Nugget Strain continually prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows:
Live Stock Show, Los Angeles, Cal., October, 1919.
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Los Angeles Show, 1917-18.
California State Fair, 1917-18.
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Each judge pronounced them the best in show, all breeds competing. An unequaled record. This year's awards all first prizes at the Washington State Fair, September, 1919, and the Oregon State Fair, 1919.

Large turkeys can be raised at practically the same cost as small ones. Let me help you make more money. My stock will assure you of more meat when market time comes. Stock and eggs for sale. Circular. J. Will Blackman, Originator Gold Nugget Strain, 607 E. Third St., Los Angeles, California.

Turkey Eggs—Orders booked now and shipped in laying season. Bronze, also Mammoth Bronze. Robinson Turkey Ranch, San Dimas, California. Covina Phone 902.

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We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

A Sow That Farrows
10-11-15-17-11-10-9-10
Is worth her weight in gold
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are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. Bred and open gilts from most popular strains for sale now.

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Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Ready for Service Boars—Big—smooth—stretchy pigs. Good feet and good backs. Sired by King's Big Bone Leader, grand champion at State Fair 1918. Also I have a few Pedigreed Airdale pups seven weeks old, for sale. J. S. Rogers, Chowchilla, California.

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Durocs—A few very fine gilts and boars five months old, about 175 pounds, Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

Echo Ranch Duroc-Jerseys offer for sale two young boars and three gilts, February farrow; from crack litter of 11, nine raised; got by GREAT MODEL, noted sire of the Duroc-Jersey breed, dam by ORION MODEL. They are big, smooth and straight. Gilts priced open or will breed. Write J. L. Stevenson, Van Nuys, California.

Duroc-Jersey Swine for Sale. Anything you want. Spring boars and gilts from 800 pounds. O. C. K. breeding. Bred and open gilts, same blood lines, 12 great brood sows. The best breeders herd on the coast. Jersey Queen Farm, San Jose, California.

Duroc-Jerseys at Ireland—Sows sired by Cherry Volunteer 2nd and Reformer, bred to Ireland Joe Orion at public sale January 28, 1920. Write for Catalogue, 1219 Brockman Bldg., Los Angeles, California.

I Will Offer a dozen first class young Duroc sows bred for spring litters to my crack yearling boar Nutmeg Gana 292547. Worth investigating. L. R. Hitchcock, Van Nuys, California.

We Have 100 Young Gilts and Boars, bred in the purple, which we are selling for about half their value. Money back if not satisfied. Derryfield Farm, Capital National Bank Bldg., Sacramento.

Big Type Durcos; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

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SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

For High Class Durocs write Leest & Mounier, Van Nuys. Blood of Orion King Gano.

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Wondergerst, California's leading Poland China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland Chinas, Tipton, California.

For Sale—7 pedigreed Poland China pigs, 8 weeks old; ancestry Orange Blossom, King's Giantess and A Wonder; 9 pigs 10 months old; ancestry Hall's Price, Edmonte Rose, Big Bone Jumbo and Iowa Wonder. Dr. Ryder, Fulton and Rita Streets, Van Nuys, California. Phone 86 R 1-2.

The Best In the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

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Poland-Chinas—Registered and well developed. Ranch adjoins town. Moramarco Bros., Van Nuys, California.

Pure Bred Poland-China pigs for sale. J. R. Carhart, Fullerton, California.

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Cheery Acres Registered Hampshires — Fine, well-belted weanling boar pigs for sale, sired by ROD 58401 and GENERAL ALLEN'S COUNTERPART 64733 from dams strong in STONE'S DUKE, MESSENGER BOY, BLYTHEDALE JIM and GENERAL ALLEN blood. Reasonable prices. Carl G. Meiners, Cheery ACRES, Ojai, Ventura Co., California.

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Quality Barred Rocks and White Leghorns—THE GOLDEN RULE POULTRY FARM, formerly of St. Helena, wishes to announce to the poultry people that they are again in a position to fill orders from their well known strain of Barred Plymouth Rocks, both Utility and Exhibition. Pullets and cockerels for sale. Also a strong line of S. C. White Leghorns. Book your order for Winter and Spring delivery of hatching eggs now. GOLDEN RULE POULTRY FARM, PENN & STAMELEN, Porterville, California.

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"Eastman's Bred-to-Lay." Hoganized and trapnested Barred Plymouth Rocks. Eggs, Cockerels. JANUARY CHICKS. Fairmead Poultry Farm, Fairmead, California.

Blue Andalusian Cockerels—There is no better BLUES to be had. From heavy laying strain. Get your orders in early. Prices reasonable. J. R. Huddleston, 312 Edgeware Road, Los Angeles, California.

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POULTRY

Mahajo Farm, P. O. Box 597, Sacramento, California, offers highest class, standard bred breeding stock in White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Plymouth Rocks. Prices: Leghorns, Males $5.00; Females $3.00. Rocks, Males $7.50; Females $3.00 and upwards.

Baby Chicks—Order now for 1920 and get what you want when you want them. White and Brown Leghorns, R. I. Reds, Barred Rocks. Safe arrival guaranteed. Write for free circular. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto.

The Reliable Blue Flame brooder has a capacity of 1000 baby chicks. Consumes but three quarts of kerosene oil in twenty-four hours. It is revolutionizing brooding in the Northwest. We are Pacific Coast distributors. Send for circular. QUEEN HATCHERY, 89 Pike Street, Seattle, Washington.

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Tanks, Pumps, Windmills, Ranch Tools Rebuilt, guaranteed do same work as new, save half. No profiteering. Compare prices and material. Make new galv. tanks, 100 to 2000 gals., save 20 per cent. Why pay more? See bargain prices ads L. A. Sunday papers. DEMMITT CO., upstairs, 120 N. Main, Los Angeles.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

For Sale—Caterpillar, two 75 horse power Holts, bargains. C. A. Myers, 1119 Haas Bldg., Los Angeles

For Sale—Neilson Tractor in good condition. Mrs. Lena Clendenon, Palms.

LIVE STOCK

BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

For Sale—70 head of thoroughbred Cotswold sheep, year clip, 16 pounds; 14 head Bucks, March, 1919; 17 Ewe lambs March, 1919; 39 head varying 4 years. Will sell all at $50 a head. Young ones will average 85 to 90 pounds apiece. Edward Myer, Orland, Calif., R.F.D. Box 32.

Angora Goats for Sale—150 fine bred does. Price reasonable. C. P. Bailey & Sons Company, San Jose, California. Importers, Breeders of Angora Goats and Persian Sheep.

For Sale—Registered Belgian stallion. Also grade horses. Apply Newport Ranch, Ethanac, California.

MISCELLANEOUS

My Half Interest in large, established and growing Hardware, Implement and General Merchandise business in one of California's most flourishing Swedish communities, for sale at very low price, $20,000, but must sell by reason of husband's death. Easy terms. Incorporated. Property consists of machinery, stock, two large buildings. Main business situated at Turlock and the other at Hilmar, a town about six miles away from Turlock. MRS. G. B. HJELNO, Turlock, California.

For Sale—One 10,000-gal. galvanized iron oil tank and oil. Also 1500 3-gal. Hamilton orchard heaters and about 500 7-gal. citrus heaters. Tank wagon and frost alarm signal. Will make a very low price on entire lot. Address Box 1, Tustin, Orange County.

Leaf Tobacco—We are growers of Tennessee Red Leaf Chewing and Smoking, aged in bulk, limited supply, order quick. 3 lbs., $1.80; 6 lbs., $3.30; 10 lbs., $5; Postpaid. Address Murphy Company, Martin, Tennessee. Reference, Peoples Bank.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Select Natural Red Leaf Tobacco; from grower to consumer. Sixty cents pound post-paid. Ideal for smoking and chewing. Reference Bank Sharon. C. D. MITCHELL, SHARON, TENNESSEE.

For Sale: Rare books and papers on silk culture. Choice mulberry seeds from Europe. Drawings for the filature. Mrs. S. R. Bellamy, 256 5th Ave., San Francisco, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Boys You Can Make Money saving pumpkin seeds. Write for particulars. Bomberger Seed Co., Modesto.

If You Want to sell or exchange your property write me. John J. Black, 116 St., Chippewa Falls, Wisconsin.

RABBITS

Learn Rabbit Raising by subscribing to our Monthly Magazine on rabbit raising sent one year for 12 one cent stamps. SANDERSON, Eagle Rock, California. Dept. C. C.

Tan and Make Up your own furs—"Fur-bearing Rabbits"—price 50 cents, will tell you everything; beautifully illustrated. Fancy Fur Rabbits for sale. Mrs. C. A. Richey, R. 7, Box 854, Los Angeles.

N. Z. Reds Registered pedigreed from first prize winners. A few fine red utility does, wt. 9 to 10 lbs. $3.50 bred. E. Peppin, 86 Cambridge, San Leandro, California.

Pedigreed Flemish Giants; also utility stock. No fancy prices. Maud Beeching, 1578 W. 46th Street, Los Angeles.

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Household Department

THE LOST TOOTH

Had a looth tooth for a week, an' now
Ith out an' people thay,
"Leth thee you thmile a little bit—you
look tho funny juth that way."
An' I can't thay my etteh now nor thpeak
big wordth to thave my thoul,
Coth were there uthed to be a tooth,
there ithn't nothin' but a hole;
An' all the time my tongue thilpth
through, but that'th not much to laugh
about—
I'll betcher old folkth wouldn't grin if
they thould have a tooth come out.
Lath night Ma gave uth corn to eat, an'
I awful fond of corn—
I tried to chew it off the cob the way
I've done thinth I wath born,
Coth I forgot my tooth wath out; but
when to get a bite I tried,
I found it wouldn't work that way and
had to take it round the thide.
An' Pa and Ma juth laughed outright
which wathn't fair, coth all along
They've told me that to laught at folkth'
afflictionth its a thinful wrong.
I think I'll go an' hide mytheIf. I'm juth
ath tired ath I can be
Of having every one that cometh to our
houth making fun of me
They athk me questhions juth to hear
me talk, ann' then they tuck my chin
Tho they can thee the funny fathe I
have to make the timeth I grin.
There'th company comin' here tonight,
but I'm not goin' to thtay about
An' have to thpeak an' thmile for them
becoth my upper tooth ith out.

—By Edgar A. Guest.

AUNT ED'S THANKSGIVING

"LOOKS like we was goin' to have a good fall of snow for Thanksgivin'." Miss Edwina Blakesly looked up and down the village street. "It's deep enough for sleighin' now."

The merry jingle of sleigh bells seemed an answer to her thought. "That must be Miss Ellis' company from the city," flattening her nose against the glass, as a big wooden sleigh, drawn by two powerful black horses, dashed past, leaving a trail of gay laughter which floated in to Miss Edwina through the closed window.

"I guess they've all got somethin' to be thankful for, if it's only that they're young and care free. It's a great thing to be young and—"

A quick knock at the kitchen door was followed by a woman's voice. "Edwiny! Edwiny Blakesly! Are you there?"

"Yes, I'm here; where'd you suppose I'd be?" Crossing into the kitchen, "Come in, Hannah, come inside; don't you see the wind is blowin' the snow all over my clean floor? What you want?"

"I jest wanted to ask if you'd lend me half a pumpkin, a quart or so of milk, about a dozen eggs, and some flour. You know Sukey's gone dry and the hens ain't layin' none to speak of. And I'd like some flour, Edwiny, and a pound or two of lard, some white sugar and some ground spices. I thought I'd make some pies."

"I reckon you forgot the bakin' powder, Hannah, or have you got some?"

"La, no! I ain't got none. I never do buy bakin' powder. I don't use it often enough to buy it."

Edwina set the sugar, eggs and spice on the table and proceeded to measure out three pints of rich, creamy milk. "Expectin' company?"

"Sure. Do you reckon I'd bother to get up a big dinner if I wasn't? Bacon and cabbage and apple butter would be good enough for me and Hiram and the kids. We could be thankful enough over that, for all we got to be thankful for. Nothin' but losses and hard work from one year's end to the other. Another hog died yesterday; that makes four since August."

"Who's a comin'?"

"Bill and his wife and Lettie and her husband. They've both got a new baby, and they're splittin' anxious to show them to grandpa and grandma. Grandpa is tickled to death. He went out to kill some chickens, a smilin' and a chucklin'; even tried to whistle Dixie, but he can't screw up his lips none since he had his teeth took out."

"Ain't grandma tickled?"

"She jest ain't! not one bit. I've seen a raft of babies in my time. It jest means a lot of extra work for me, when I had figgered on settin' down the whole afternoon with my quilt patches."

Edwina was half way down the cellar steps. She paused, her eyes kindling with anger. "Hannah Carson! You'd oughter be ashamed of yourself, talkin' like that. I should think you'd be almighty glad to have somebody to come home to you. Look at me!"

"Yes, look at you! Independent and care free. Nobody bothers you. You come and go jest as you please, get up and go to bed whenever you feel like. Christmas, Thanksgivin' or Fourth of July don't ever mean a bunch o' company and a lot of extry work for you. I often say if I was as foot loose as Edwiny Blakesly I'd be willin' to live forever."

"Care free! Foot loose! Yes, I'm all that, if you look at it that way. But jest look at the other side of the picture. I am all alone in the world. Nobody don't care whether I live or die. I ain't never had the joy of motherhood, never rocked and sung no babies to sleep; never had no courtin' nor marryin' in my house. I'd be willin' to cook for a week jest for the pleasure of havin' someone come and spend the holidays with me—someone who really wanted to come, even if it was to show off their new baby. You mothers who are always thinkin' of the care of your children need never stop to think what a blessed thing it is to have a child."

Edwina plunged into the cellar, as if ashamed of her outburst.

"I reckon you're right, Edwiny," carefully fitting the pumpkin and lard in the side of her basket, "and I reckon, too, that my complainin' is mostly at the end of my tongue. I'll be real glad to see the children and the babies, too. Thank you for the pie things."

Shutting the door after Hannah, Edwina slipped the bolt, then dropping into her big rocker, she threw her apron over her head and indulged in a good cry, the first in many a year. Never before had she analyzed the ache in her heart, the void in her life.

"If I could only have a kept Jim," speaking her thoughts aloud, as those who live alone so often do. "But his father must marry again and take the boy out West. He's a man growed now, must be about 26. Let's see," counting her fingers, "I reckon he was 27 his last birthday. He's been gone 15 years. I reckon he's forgot all about his aunt Ed, as he used to call me.

"I did have one happy winter since Tom took Jim away. Dora Sutherland was like a streak of sunshine. The school board expected her to board around, but she wouldn't leave here. She got a better school out West somewhere and never come back. She sent me a couple of picture postcards, but I never got a letter. I reckon she's forgot, too."

A loud "hello" roused her. "Hello there, Miss Blakesly; some mail."

"All right, Sam," Edwina called, "jest throw it up the walk; I'll get it. Much obliged."

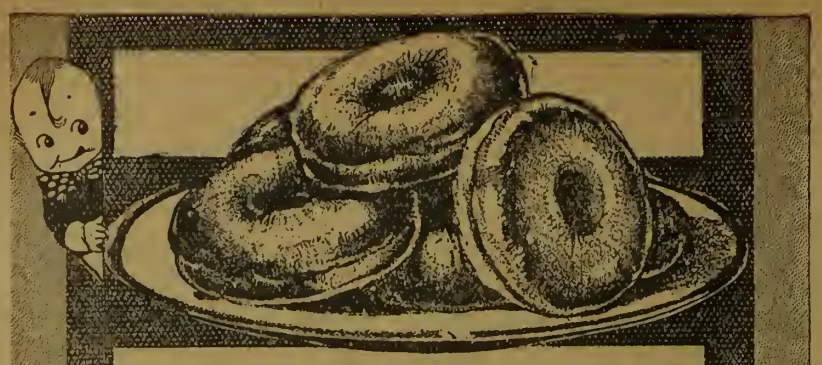
Throwing a shawl over her head and shoulders, she went out, pushing the snow to either side with a broom, until she reached the mail box. Just a couple of magazines, a patent medicine book and some flower catalogs.

Edwina put on her glasses and drew the rocker near the window. Tearing the wrapper from one magazine she resolutely turned the pages in search of some attractive heading. She was determined to read down the tumult which Hannah Carson's grumbling had awakened. One line caught her eye. "We can have anything we want, if we only want it hard enough." Edwina dropped the paper in her lap and looked out at the whirling snow.

Half an hour later a bright fire was burning in the kitchen stove, a kettle of golden pumpkin was bubbling upon it, and Edwina was beating up a spice cake. "Dora always liked spice cakes," she soliloquized, "and Jim loved ginger cookies. Whichever one comes, I'll have somethin' they like."

A very tired but strangely excited Edwina gazed with pride at the many good things on the pantry shelves. Three deep pumpkin pies, a big yellow bowl of crisp brown doughnuts, a delft bowl filled with ginger cookies, and a big spice cake. On the broad window sill two fat chickens, all ready to stuff, and in the upper cupboard preserves and jelly of all kinds. "I reckon that'll make a pretty good dinner," smiled Edwina. "Now I'll light the fire in the spare room and put out my new blankets."

That task finished she came back



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½ Cup sugar, 1 Egg, 3 Level teaspoons shortening, 1 Level teaspoon salt, ¾ Cup milk or water, 2½ Level teaspoons Calumet Baking Powder, 2½ Level cups flour. Lemon and mace flavor.

How to make them—Cream sugar and shortening together, add well beaten egg, then add milk. Next mix in flour and baking powder well sifted together. Work dough as little as possible. Turn out on well floured board and roll out quarter inch thick; cut with doughnut cutter and fry in boiling hot fat.

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to the kitchen. "Mebbe they won't be here in time for supper," she thought. "This snow may make the train late."

The cat got up from his bed by the woodbox, stretched himself lazily, then jumped in Edwina's lap. Rubbing his head against her he purred coaxingly.

"Yes, Jasper, I reckon we might as well eat supper and get to bed early. We're liable to be busy tomorrow. Here comes another sleigh. Some of Mis' Ellis' folks must a come on the late train." She went into the sitting room to watch the sleigh pass. "I reckon not, Jasper. They must be strangers. That's a livery sleigh."

The sleigh stopped at her own gate. Her heart beat wildly as she watched a man spring out, help a lady to alight, then reach in for a suitcase and a bundle.

The lady came up the walk, her long fur coat making a wide path in the snow. The man, having paid and dismissed the driver, followed her. Edwina hastened to open the front door.

"Dora!" she gasped, "Dora Sutherland!" Whatever else she said was smothered in the fur coat.

"Oh, I'm so glad to be with you again—so glad, so awfully glad!" Dora hugged her close.

"Come in, honey, come in."

Edwina was trembling with happiness. The man followed, put down the suitcase and deposited the bundle on the couch. "Well, Aunt Ed, ain't I welcome, too?"

With a startled cry she turned. The tall man looked at her with the big brown eyes of her lost boy. "Jim!" she sobbed, "Oh, Jim! I thought you'd forgotten me."

"Not much, Aunt Ed," stroking her cheek with gentle touch, "I never could forget you. The time I spent with you was the one bright spot in my boy life."

"Just as my year with you is the sweetest memory of my teaching days," Dora broke in.

"I have thought of you both so often, and today I really longed to see one or the other of you. And now I have you both. But," looking from Jim to Dora, "how did you happen to come together?"

Jim laughed happily. "When a man goes to see his dear old aunt, the one friend of his boyhood, it is natural that he'd want to take his wife with him, isn't it?"

"And especially when his wife already knew and loved the aforesaid aunt," commented Dora.

Edwina beamed upon them. "I couldn't wish for anything better, but I am surprised."

"Didn't you get my letter?" Jim asked.

Edwina shook her head.

"I wrote two days ago. You should have gotten the letter this morning. I didn't want to write until I was positive that I could get off. It didn't give you time to answer, Aunt Ed, but I felt sure of a welcome."

Dora unwrapped the bundle on the couch and laid a sleeping babe in her aunt's lap. "Edwina Blakesly, number two," she explained.

"A baby, too!" She lifted the child tenderly, kissed the little dimpled face, the tiny roseleaf hands; all the pent-up mother love shining in her face. Jim looked happily on, but Dora's eyes were dim with understanding.

"You see, Aunt Ed, when we were looking for a name for baby I suggested yours, telling Dora how good you had been to me. When she found out you were the same Edwina Blakesly that had been so good to her, she was just as pleased as I was. Then we decided that we'd come down and spend Thanksgiving with you."

"It will certainly be a great and happy Thanksgiving for me, Jim."

"We're coming every year, Aunt Ed. I wonder what became of that letter."

"The letter don't matter," Aunt Ed replied, "so long's you got here."

The west wind told the north wind as he caught him at the corner of the house, that he had tossed the letter into the big lilac bush while Miss Edwina was getting her shawl. They laughed like two naughty boys, then started a wild game of tag with the east wind who was blowing over the hill.

The next morning Ted Carson came to borrow some cream and white sugar for the coffee. "Ma says, Miss Edwiny, that she'd be pleased to hev you come over for dinner. 'Twouldn't be so lonesome fer you."

"Tell your ma that I'm very much obliged, but I've got company. My nephew, Jim Blakesly, with his wife and baby, is come to spend Thanksgivin' with me."

"Gee! but she acted proud about it," commented Ted, as he trudged along home. "When she gits as much company as we hev, she won't think it's so great."—Farm and Home.

TEACHING OBEDIENCE

By Minnie Embree Parker

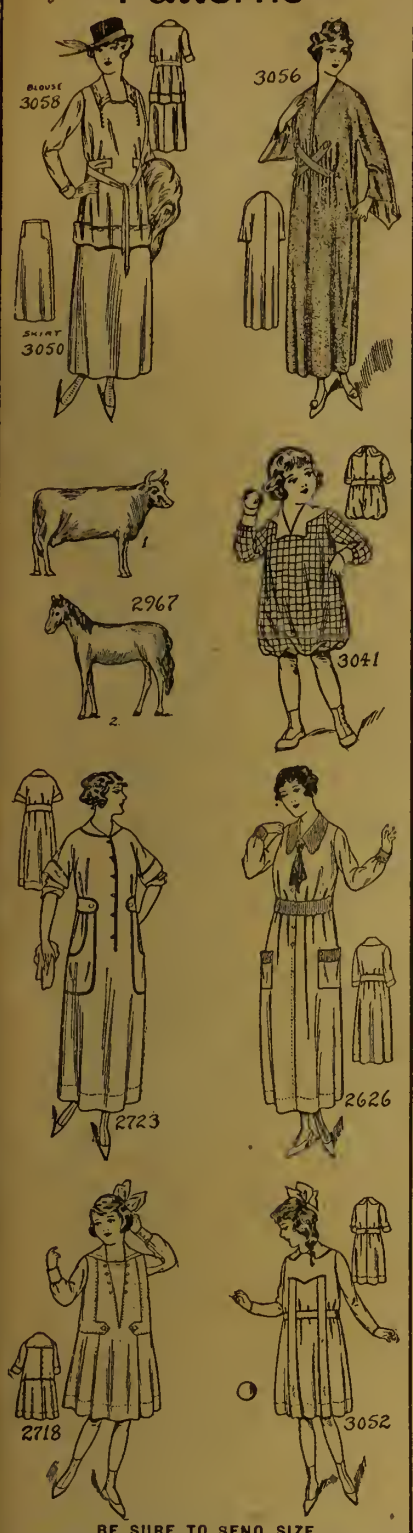
Dear Editor: My little girl values your paper so highly that she called my attention to the offer of a renewal for articles in regard to child culture. I was thinking it called for about 500 words, but when I got it written I saw it was to be 200 words, so I had to make two separate articles. If you can use either or both, I will be glad, for I can see now, with my children 11 and 12 years old, that early training is absolutely necessary. So many mothers of tiny children do not know how to begin right.

In these days of Bolshevism and anarchy of every description, it seems to me the most important thing in the care and training of children is to instill into their lives from earliest infancy the principle of yielding to rightful authority. Lessons, graded to suit age and condition, should be begun at the very dawn of intellect. The mother is the queen upon her throne, and the tiny bundle of humanity is the subject. It would seem entirely unnecessary to say that there should be no harshness. Love is the ruling power but there must be firmness and proper punishment when necessary, for sometimes pain is the only language a child can understand. The queen is the ruler and not the subject. This must not be lost sight of for one moment. If this principle is firmly imbedded into the mother's heart, so that it will be carried out from the very beginning of the child's life, she will not have the trouble in later years that we see most mothers having with big boys and girls. How refreshing it is, these days, to see a boy yielding willing and respectful obedience to the wishes of mother or teacher! Such a boy will grow into a man who respects his government, a citizen any nation can be proud of. I believe it was Froebel who said, "Parents, live with your children." But he never meant that parents should give the reigns of government into the hands of the children.

It is for the good of the child that he be taught to yield to authority. Many a mother is grieving because she has no control over a big boy. He ignores her authority and even shows marked disrespect when she remonstrates with him. Many big girls do the same. Mother knows that some course of action will result disastrously to her loved ones, but when she tells them so they think she is old fashioned and entirely too particular. And they are not a bit careful not to hurt her feelings by telling her so. She is now reaping what she sowed when she allowed the tiny baby to have his own way and did not instill into the mind of the little one a proper respect for authority. It seems a little thing, many times, to insist upon obedience in every particular, and we let it go, time after time, until by and by we wake up to the fact that it is the "little foxes that spoil the vines, and our vines have tender grapes." A baby that is taught what "No" means when he wants to take Papa's watch into his own hands, will not make himself and others miserable by crying for the moon. It may seem to be the easiest way to put out of reach everything baby shouldn't have, but if you do you will make no end of trouble for yourself and others when you take him into some other home. In the long run you will find it pays to take the time to teach him to leave things alone. It will be a valuable lesson, not only in obedience, but in respect for other people's property, which virtue is sadly lacking in the youth of today.

Let parents first have complete control over themselves, yielding willing obedience to proper authority, then let them, in love and justice, require obedience from their children, and what a different state of society would be the result! We would have "a little heaven here below to go to heaven in."

The Cultivator Patterns



BE SURE TO SEND SIZE

3058-3050- A Smart Costume. Blouse 3058 cut in 6 Sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3050 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. For a medium size this costume will require 5¾ yards of 44 inch material. The Skirt measures about 1⅞ yard at the foot. Two separate patterns 10 cents for each pattern.

2967. A Set of Toy Animals. Cut in 1 size The Cow requires ⅝ yard of 27-inch material and the Horse, ⅞ yard of 36-inch material. Price 10 cents.

2723. "A Cover All Apron." Cut in 4 sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. Size medium will require 5¾ yards of 27 inch material. Price 10 cents.

2718. Girls' Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. Size 10 will require 4 yards of 27 inch material. Price 10 cents.

3056. Ladies' Negligee. Cut in 4 sizes; small, 32-34; medium, 36-38; large, 40-42, and extra large, 44-46 inches bust measure. Size medium will require 4¼ yards of 36 inch material. Price 10 cents.

3041. A Practical Style. Cut in 4 sizes; 2, 3, 4 and 5 years. Size 4 will require 2⅝ yards of 36-inch material. Price, 10 cents.

2626. A Simple Work or Morning Dress. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 4¾ yards of 44-inch material. Width at lower edge of skirt is about 2¾ yards. Price, 10 cents.

3052. Girls' Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. Size 10 requires 3⅝ yards of 36 inch material. Price 10 cents.

CATALOGUE NOTICE

Send 10 cents in silver or stamps for our Up-to-Date FALL AND WINTER 1919-1920 CATALOGUE, containing 550 designs of Ladies' Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various, simple stitches) all valuable hints to the home dressmaker.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles.

(The second article by Mrs. Parker will appear in an early issue. The Cultivator is more than glad to present common sense righteousness, expressed so clearly and pleasantly by one who has tried it and knows whereof she speaks.)

A HELP WITH BABY

By a Texas Mother

One of the greatest helps I ever had with my babies was a plain but substantial gocart. Since I had the care of baby and my house work to do also it saved me many steps to fix him comfortably in his cart and roll him from room to room as I followed my daily tasks. Our babies soon learned to love their cart, and it made many outdoor duties a pleasure to both baby and mother. It was easy to milk, gather vegetables, feed the chickens, etc., while baby sat near by in his cart happy as could be.

When our baby was 19 months old it was necessary for him to undergo an operation for rupture and he had to be kept on his back for two weeks. He wasn't sick after the first few days and it was almost impossible to keep him in bed. The doctor let us get a cart and with pillows fix a good bed for him and we rolled him about the hospital, out of doors, on the sidewalks and to a near by park. The baby got well and strong, is now four years old, and may the gocart be as much help to other mothers as it has been to a Texas mother.

THIS WEEK'S PATTERNS

This week's patterns show a particularly winning kiddie romper. The white collar and cuffs may be edged with a blanket stitch in black or colored cotton. Black is used on most of the smart little rompers and dresses in the shops that display them with big price marks attached.

A further suggestion for making this little garment a very Christmasy present is to add one or two pockets made like the little duck outlined in the illustration on this page. If you make pockets on each side of course the pattern must be reversed so the ducks face each other. To use this as a pattern we suggest that it be doubled in size. This pattern was drawn in a space 2½ by 2 inches, and doubling would make a good size, 5 by 4 inches. The line of the duck's back is the only part left open for the pocket, of course, the rest being stitched down firmly to the material of the dress so that the actual opening is only three inches square. If thought more practical the line of the duck's back, which is the top of the pocket, can be left perfectly straight.

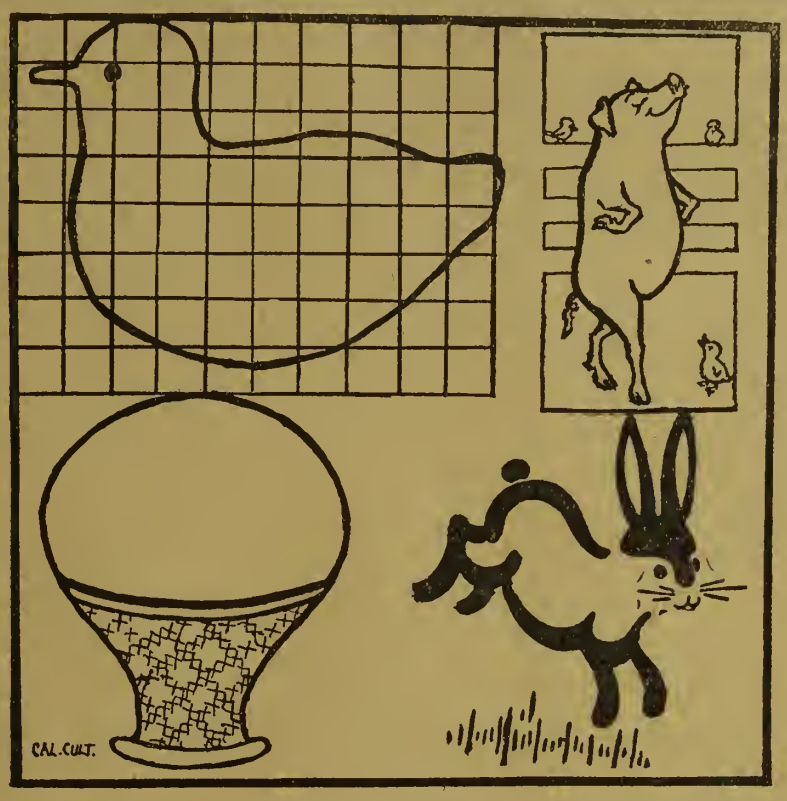
A word as to drafting your own designs. This little duck was drawn from the illustration in last week's patterns. This was found to occupy a space five-eighths by four-eighths inch and one-eighth inch squares were drawn over it to help in redrawing. Then for this illustration a space of five half inches by four half inches was drawn and divided into similar little squares—and the little duck was very quickly and easily outlined. Now we suggest that you make a paper pattern by doubling the dimensions shown in this drawing.

The same method can be followed in making other designs that take your fancy.

The little basket design, for instance, is drawn to show how it can be worked out in cross stitch with outlining for the handle. This could also be cut from cloth, like the little duck, and put on as a patch pocket with slit for pocket along the curve of mouth of basket with the handle in outline stitch.

The dashing little bunny or the dancing pig would be fascinating on a child's bib or could be repeated as a border design. We recently saw displayed a dainty little child's dress, made like the little girl's dress 3057 shown last week, of yellow chambray with collar and cuffs of white edged with black cotton in blanket stitch, and on each side of the little yoke two tiny chickens with wings and necks stretched as if trying to fly, also of the white material outlined with black. The bunny or the pig would be well adapted to this treatment.

The negligee 3056 would make a much appreciated Christmas gift, of eiderdown, outing flannel or challis. The cross straps in the front of fancy ribbon or decorated with a bit of quick embroidery would add much to its charm.



HOUSEHOLD QUERIES

Thousand Island Dressing

Just noticed some subscriber wishes recipe for Thousand Island dressing and as I happened to have one, will send it in. Hope it is what she wants. I myself have never tried it, as I just got it today, so don't know how good it is.—Mrs. H. E. Peterson, Fairmead.

One cup mayonnaise dressing, one cup whipped cream, one-half cup chili sauce, two tablespoons minced pimento, two tablespoons minced green peppers, one tablespoon chopped cucumbers, one tablespoon chopped nuts, one tablespoon Worcestershire sauce. Mix in the order given and use at once.

Mrs. N. R. Beckwith of Pasadena also sends the above recipe.

Another was received from M. O. L., Los Angeles. It follows:

Put half a cup of olive oil into a small fruit jar, the juice of half a lemon and half an orange, a teaspoon of grated onion pulp, one-fourth teaspon each of salt and paprika, one-half teaspoon Worcestershire sauce, one-fourth teaspoon mustard and three sprigs of finely chopped parsley. Put the rubber and the cover on jar and shake vigorously until well mixed and creamy. Then pour over your salad.

THE EASIEST WAY

Following the line of least resistance is what makes rivers and men crooked.—Boston Transcript.

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Los Angeles Markets

Los Angeles, November 25, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 67 cents.

Dairy Exchange prices last week on extras:

Nov. '19	19	20	21	22	24
....	66	66	67	67	

CHEESE

Brokers' prices:

California, fresh, lb., 32; price to retail merchants, 32@34.

EGGS

Fresh extras, Produce Exchange closing price, 77 dozen; case count, Produce Exchange closing price 71 dozen; pullets, Produce Exchange closing price 62 dozen; pewee pullets, 53.

Dairy Exchange prices last week on extras:

Nov. '19	19	20	21	22	24
....	76	76	76	77	

POULTRY

Prices to producers: Hens, lt. 32; heavy, 32@33; colored over 4 lbs., 36; broilers, 45@47; fryers, 33; roasters, 33; old roosters, 19; ducks, old, 23; ducklings, 30; ducklings, Pekins, 3½ up, 33; geese, 25; turkeys, live, young tom, 37; dr., 43; old live, 35; dr., 41; hen turkeys, live, 35; dr., 41; squabs, 45@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 14.50; 150 to 175 lbs., 15.00.

Cattle (on foot, gross weight): Steers, good, 10.00@10.50; medium, 9.00@9.50; heifers, good, 8.00@8.50; fair, 7.50@8.00; cows, fair to good, 7.50@8.00; bulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00@13.00; 175 to 225 lbs., 10.00@11.00.

Sheep: ewes, 8.00@8.50; lambs, 13.00@14.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock November 24, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market dull. New Stock—Stockton: Burbanks, fancy, 3.55@3.90 per cwt.; choice, 3.35@3.50; Salinas: Burbanks, sacked, per cwt., fancy 3.75; Russets, 3.55@3.60, few 3.25; Local: Lug boxes, mostly 1.25.

Sweet potatoes—Lugs, 75@85; per cwt., 2.35@2.50.

Carlots: Demand slow, movement moderate, market steady. Per cwt., 2.15@2.25, mostly 2.15, lugs extra; few extra fancy, grades, 2.50 in mixed cars.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, lug 1.25@1.40; cwt., 4.50@5.00, some low as 4.00; Yellows, mostly 5.00, some low as 4.50, few 1.10; Yellows, 1.50@1.60.

VEGETABLES

These are the actual prices obtained November 24, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans, green, lb., 15@17; Limas, 13@15. 20; Limas, 13@14¼.

Beets, doz., 45@60; sk., 2.50.

Cabbage: Per lb., 2@3; cwt., 2.00@3.00; cr., 2.75@3.25; sacks, 2.00.

Carlots: Demand and movement moderate, market strong, prices higher. Winningstadt and Cannonball, 40.00@45.00 per ton; 1.75@2.00 per cwt., mostly 1.90@2.00.

Carrots, doz., 35@45; lb., 3; sk., 1.25 1.75; field crates, best, 3.00@3.50; others, 2.50@2.75.

Cauliflower: Local stock, per dozen, 1.75@2.00, mostly 1.75@1.85; field crates, best, 3.10@3.50; fancy, high as 4.00; others, 2.75@3.00.

Carlots: Demand and movement good, market weaker, prices lower. Crates, Snowball and Pearl, straight cars, 1.85@1.90, mostly 1.90; mixed cars, mostly 2.00.

Celery: Local stock, per dozen bunches, 90@1.00; extra fancy, 1.00@1.25; crates, wide range prices, 4.00@5.00; fancy shipping stock, firm, 5.00@6.00; celery root, 1.10 per dozen.

Carlots: Demand and movement moderate, market steady, little change in prices. Crates, Golden Heart, 4.50@4.75; per dozen, 65c in straight cars, 75c mixed cars.

Cucumbers: Local stock scarce, lug boxes 2.50@2.75; some best 3.00@3.25; $1.00@1.25 per dozen.

Chicory, dozen, 40@50.

Corn: Roasting ears, lug of 3 dozen, 90@1.15; mostly 90@1.00.

Eggplant, 4@5½; fancy, 9@10.

Peas, local, lb., stock scarce, 14@20.

Lettuce: Local stock, market stronger. Per dozen, 80@85; crates, 2.25@3.00; shipping stock, crates, 3.00@3.50.

Carlots: Demand active, movement moderate, market strong. Wide range in quality and condition, generally fair. California Crates, Los Angeles or New York Market (Iceberg), straight cars, wide range in prices, 3.50@4.25, mostly 3.75; mixed cars, 4.00@4.25.

Peppers: Lug boxes, wide range; Bells, 80@1.00; Chilis, best, 50@60; poorer, low as 35; lb., Bell, 10; Chili, 7; shipping stock, high as 1.00; per lb., best Chilis, 4@10; Bells, 8@13.

Pumpkins, 1½@2 lb.

Parsnips, lug, best, 85@1.00; others 50@75; sk., 2.25@2.50; dozen, 50.

Romaine, doz. 40@50.

Rhubarb: Local, box, 1.25@1.35.

Squash: Summer, lug, 90@1.00; Hubbard, 1½@2¼.

Spinach, doz., 35@40.

Tomatoes: Lug boxes, ripe stock, best 90@1.00; poorer, 70@80; shipping stock, 1.25@1.50; supply light.

Carlots: Demand slow, movement moderate. Wide range in quality and condition. Some rolled unsold. Lug boxes, Stone's wrapped greens and pinks, straight cars, 1.50@1.65; mixed cars, mostly 1.75.

Turnips, doz., 40@45; others, 30@35.

FRUITS

These are the actual prices obtained November 24, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California: 4-tier, Bellefleur, 1.85@2.00, mostly 1.85@1.90; 3½@4½ tiers, 1.75@1.85; loose, 4@4½ per lb.; Delicious, boxes, 3.50@4.00; loose, 5@6 per lb.; Baldwins, per lb., 4@5; Newton Pippins, 4@5; Pearmains, 4. Northern; Jonathans, extra fancy, 3.10@3.25; fancy, 2.85@3.10; choice, 2.50@2.60; loose, 6@7 per lb.; Spitzenburgs, extra fancy, 3.10@3.50; fancy, 2.75@3.00; per lb., 6½@7.

Bananas, 8½@9.

Cranberries: Barrels, 16.00; boxes, mostly 5.00; lb., 15@17.

Grapes: Local and northern, per lb.: Tokays, 9@12; Malagas, 9@11; few, best, 11@13; Black Cornichons, 8@13; Red Emperors, wide range, 6@9.

Nectarines, lb., best 6@7; others, 5@6.

Pears: Northern Bartletts, No. 1, 8@9; No. 2's, 4@6 per lb.; lug boxes, 2.00@2.50; best packed boxes, 3.25@3.50.

Persimmons, lb., 8@14; mostly 9@10.

Pineapples, lb., 19@20.

Pomegranates, lb., 6½@9.

Quinces: Local lug, 1.10@1.35; lb., 4@5.

Lemons: Fancy packed, 4.50@4.75; loose, 4.00; juice, 2.50. Local: Packed, 3.50@4.00; best, 4.00@5.00; loose, 3.00@3.25.

Oranges: Valencias, medium fancy 4.50@5.00; Navels, box, 5.50; local pack, 2.50@3.00.

Grapefruit: Arizona: Seedless, per box, 4.25@4.50; seeded, 4.00.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.
No. 2, 26.
Diamond Brand Buds, 34.
Golden State Buds, 34.
1918 No. 1 price was 28; fancy budded 31½.

BEANS

California Lima Bean Growers Association fixed prices October 6: Limas, 14¼; baby, 13.

GRAIN AND FEEDS

Price local grain exchange, November 25:

Oats, Eastern, 2.90.
Corn, Yellow, 3.15@3.25.
Egyptian, 3.40@3.50.
Kafir, Eastern, 2.80.
Feterita, 3.15.
Hygeria, 3.25.
Eastern Milo, 2.70@2.77½.

San Francisco Markets

San Francisco, November 24, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 68
Firsts .....Nominal

Prices extras last week and year ago:

Nov. '19	18	19	20	21	22
.....	67½	67½	67½	68	68
'18	64	64	64	..	..

Receipts five days ending Nov. 22, 2,907 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats .....30@35
Cal. Y. A. 38
Ore. Triplets 34
Jack, full cream .....33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 86
Extras, Pullets 71
Undersized 66½

Special Prices on Second Hand Tractors

We are offering the following bargains in second hand tractors. These machines have been overhauled and are in A1 shape. Prices are right and you may set your own terms, cash or trade.

NEW CASE TRACTOR, 9-18 ..... $1100.00
NEW CASE TRACTOR, 10-18 ..... 1250.00
Samson Tractor 500.00
Baby Holt 700.00

12-20 Yuba, 20-35 Yuba, 18-35 Yuba, and 12-25 Yuba.

The A. F. George Co.
Pico 145 or 146
200 North Los Angeles Street . Los Angeles
Members of Tractor and Implement Dealers Ass'n

PACIFIC NEW AND RE-NEWED PIPE SAVES MONEY
Renewed screw casing costs from one-half to two-thirds less than standard pipe. Large savings on standard pipe, fittings and valves; special fittings made to order. Pacific Pipe is thoroughly tested and guaranteed for 150 pounds working pressure; asphaltum dipped; serves every purpose. Let us save you money. Write!
PACIFIC PIPE CO. 237 HOWARD STREET SAN FRANCISCO

Live Stock Trailers
1 and 2 head **$110** to **$195**
and other trailers of all kinds, **$35** to **$300**
Auto Wreckers
1450 Central Ave. Los Angeles

California's Greatest
Livestock and Farm Auction
The Famous **Tagus Ranch** Tulare, Cal.
Merritt-Bowers Company

Tuesday, December 16th, 9:30 A.M.

15 Registered Percheron, Belgian Shire Stallions and Mares.
5 Registered Jacks.
30 Work Horses.
25 Mules.
20 Sets of Harness.
25 Farm Wagons.
Hundreds of implements, like new, too numerous to mention, but including the most modern kind of farm and field equipment maintained on one of the Greatest Farms in America.

Wednesday, December 17th, 9:30 A.M.

58 Registered Shorthorn Cows and Heifers, most of which are bred to Scotch Bulls.
25 Registered Shorthorn Bulls, Scotch topped.
13 Registered Milking Shorthorn Cows and Heifers, mostly bred.
5 Registered Milking Shorthorn Bulls.
30 Unregistered Purebred Hereford Bulls, two-year-olds.
All cattle tuberculin tested.

For Catalog and Further Information Write
Merritt-Bowers Company, Tulare, Cal., or
ORD L. LEACHMAN, Auctioneer and Sales Manager
1111 Seventh Street, Sacramento, Cal.

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago.

	18	19	20	21	22
Nov.					
'19	86½	87½	87½	87	86
'18	80½	80½	81	..	..

Rcts. five days ending Nov. 22, 98,130 doz.

POULTRY

Wholesale prices are:

Leghorn, 30@32; colored, 34@35; roosters, young, 30@31; old, 20@22; broilers, 38@40; fryers, 33@34; turkeys, live, 38@40; dressed, young, 45@47; old, 40@45; geese, 23@25; ducks, Indian Runner, 18@20; Pekin, 24@26; squabs, 50@60.

Belgian hares, live, 16@17; Jack Rabbits, doz., 1.50@3.50.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs., Rivers, fancy 2.90@3.00; choice, 2.75@2.90; Oregon Gems, 3.45@3.60; Salinas, 3.50; Sweets, lb., 3½@4.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 4.25@4.50; choice 3.75@4.00; Yellow, 3.75@4.00; Whites, 3.50; Garlic, lb., 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 15@20; Lima, 12½@15.
Carrots, per sack, 1.00@1.25.
Cauliflower, doz., 1.25@1.45.
Cabbage, doz., 40@55.
Celery, doz., 23@40.
Cucumbers: Per box, 50@90; hothouse, 2.00@2.50.
Eggplant, lb., 8@10.
Lettuce, cr. of 3 doz., 1.25.
Peppers, Bell, lb., 8@10; Chili, lb., 5@6.
Peas, lb., 12½@18.
Pumpkins, per sack, 75@1.25.
Radish, 7@9 doz. bunches.
Tomatoes: Sacramento River, 1.00@1.50; L. A. cr., 1.75@2.00.
Squash: Summer, bx., 1.00@2.00; Hubbard, sk., 1.25@1.50.
Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:

Apples: Beliflowers, 1.75@2.25; Winter Bananas, 2.50@3.00; Newton Pippins, 2.15@2.50; Jonathans, 2.50@3.00; Jeniton, 2.00@2.50; Spitzenburg, 2.50@3.00 ch., fy., 3.00@3.50.
Avocados, small California, doz., 75@2.00.
Bananas, 8½@9.
Cranberries, 5.00@5.50 per standard box; barrel, 15.00@17.50.
Figs, double or single layer, 1.00@1.50 box.
Grapes: Malaga, 2.00@2.50 per box; Muscats, 2.00@2.50; Tokays, 1.25@2.50; Isabellas, 1.25@1.75 per crate.
Huckleberries, lb., 17@20.
Pears, box, 1.50@3.00.
Persimmons, box, 1.50@1.75.
Plums, 1.00@2.00.
Pineapples, doz., 4.25@4.50.
Pomegranates, 1.75@2.00.
Quinces, box, 75@1.50.
Strawberries, ch., 18.00@20.00.

HONEY

Jobbing prices: Extracted, Water White and White, 20@21 lb.; light Amber, 14@16; Amber, 13@14; Comb, 28@30 for White and Water White and 25@28 Light Amber.

HOPS

1919 contracts per lb. around 75@90.

BEANS, PEAS

Jobbing price per cental:

Beans: Small white, 6.25@6.50; large white, 5.90@6.15; cranberry, 7.50@8.00; red Mexican, 5.75@6.00; pink, 6.00@6.25; California Bayou, 8.75@9.00; blackeye, 6.00@6.50; red kidney, 12.00@13.00; Lima, 14.00@14.25; Garvanza, 10.00@11.00.
Dried Peas: California, 6.50@7.00 per cental for green, recleaned.

GRAIN

Wheat: The prices are based upon federal grades and standards at the terminals in San Francisco Bay and Los Angeles, and are as follows, per bushel of 60 pounds:

Hard White—	Per Bushel	Per Cental
No. 1	$2.20	$3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.13	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51½
Club and Sonora—		
No. 1	$2.16	$3.00
No. 2	2.13	3.55
No. 3	2.09	3.48½

The above are minimum prices.

For sacked grain add 4½ cents per bushel of 60 pounds to above prices. Deductions of three-fourths of a pound made for weight of standard grain bags. Wheat grading under No. 3 mixed or smutty wheat will be purchased according to merit.

Oats: Red feed, 3.05@3.10; black, 3.15@3.25.

Corn: California yellow, 3.40@3.55 per cental; Egyptian, 3.35@3.45; milo maize, 3.15@3.20.

Rye: 3.10@3.25 per cental.

Barley: Spot feed, per cental, 3.37½@3.45; brewing, 3.45@3.55.

HAY

Fancy Wheat Hay (light 5 wire bales)	23.00@25.00
No. 1 Wheat or Wheat and Oat Hay	20.00@24.00
No. 2 Wheat or Wheat and Oat Hay	19.00@21.00
Choice Tame Oat Hay	22.00@25.00
Other Tame Oat Hay	19.00@22.00
Wild Oat Hay	18.00@21.00
Barley Hay	18.00@22.00
Alfalfa Hay	20.00@25.00
Stock Hay	15.00@18.00
No. 1 Barley Straw, per bale..	.50@ .80

Citrus Markets

Shipments

Shipment of oranges from Southern California to date since November 1, 1919: Oranges, 1,705 cars; lemons, 291; total, 1,996. To same date last season: Oranges, 32; lemons, 512; total, 544. Central California: Oranges, 359; lemons, 66; total, 425. To same date last season: Oranges, 540; lemons, 114; total, 654. Northern California: Oranges, 44 cars. To same date last season: Oranges, 22.

AT THE AUCTIONS

November 24

New York: 37 or., 4 lem. Val., 2.65@9.15; lem., 1.50@5.55.
Cincinnati: 2 or., 1 lem. Val., 2.60@4.40; lem., 2.00@3.45.
Boston: 16 or., 5 lem. Val., 1.75@6.95; lem., 2.40@4.85.

Put This Toy Tractor in His Stocking for Christmas—Only 25c

Looks just like a big Avery Tractor. Cast iron—has rolling wheels—finished in beautiful red and black enamel with gold striping. He'll be delighted with it! Stands 3½ inches high, 5 inches long. Makes a dandy toy—or table ornament. Worth many times its price.

Send 25c (35c in Canada) with the names of those talking of buying a tractor, cultivator or a grain thresher. Also mention as many tractor and thresher owners as you can remember. That's all. We'll send the toy by return mail.

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Davenport Implement Co.
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1 Cleveland, nearly new	$1,200	1 Bean, used	350
1 Second hand Cleveland, A-1 condition	850	1 20-35 Yuba, A-1 shape	3,250
2 Clevelands, absolutely new at..	1,300	1 10-20 Case, new	1,100
2 Second hand Clevelands, each.	450	1 10-18 Case, new	1,150
1 Model B Bates Steel Mule, new	1,000	2 10-20 Sandusky, new at	1,000
1 12-25 Waterloo Boy, used	500	1 Midget Holt in fine condition..	500
		1 12-20 Heider, cheap	

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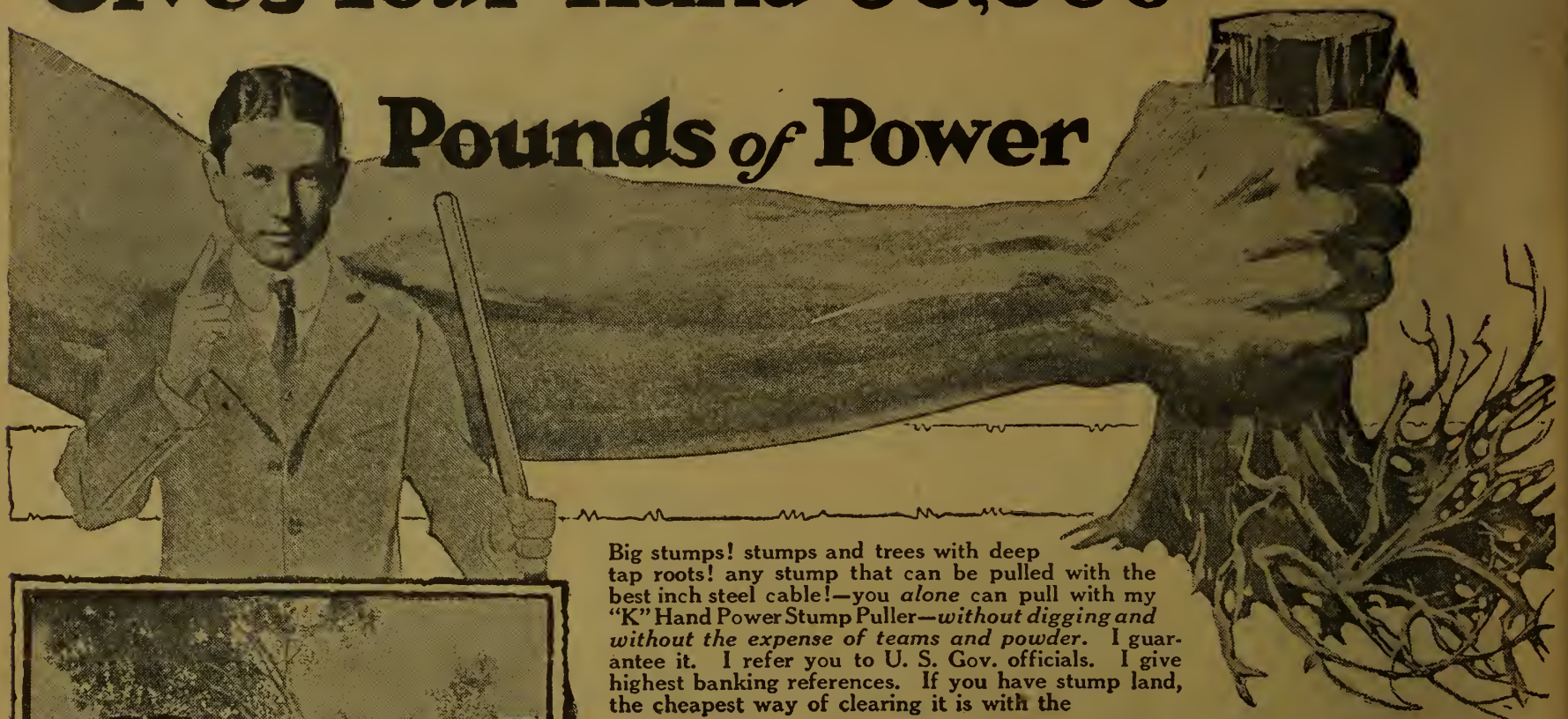

Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable!—you *alone* can pull with my "K" Hand Power Stump Puller—*without digging and without the expense of teams and powder.* I guarantee it. I refer you to U. S. Gov. officials. I give highest banking references. If you have stump land, the cheapest way of clearing it is with the

HAND POWER

K Stump Puller

Frank Hance, a *one-armed* farmer of Bowie, Md., pulling a double silver maple 3 ft. 8 in. in diameter at the ground, with deep tap roots. This is an easy pull for the "K," as the cable can be hitched high and the leverage is consequently greater.

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The "K" works on the leverage principle of the ordinary lifting jack, except that the power is applied on a cog-wheel instead of a standard. 100 lbs. push on the lever develops a 48-ton pull on the stump—all an inch steel cable will hold. One man operates it alone—no teams to pay for—no walking.

A Mechanical Wonder

Made of finest steel—guaranteed against breakage. Weighs only 171 lbs.—easily carried or hauled about on its own truck wheels. Has two speeds—60 feet per minute for hauling in cable or for small stumps—slow speed for heavy pulls. *Works equally well on hillsides and marshes where horses can not* work

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H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder."

Ernest Thompson Seton, author and naturalist, declares the "K" "a great success."

Hundreds of owners write in, telling of pulling six- and seven-foot stumps, of pulling faster and pulling bigger stumps than by any other machine.

Special Offer We are making a special offer to get a "K" Stump Puller introduced in every neighborhood. Write us today for full information and for free book on Land Clearing and about our Wonderful Drag Saw.

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — December 6, 1919 — No. 23

A Winner at Chicago and California Internationals

Aiglonel, the Percheron stallion at the University Farm, himself a winner at the Chicago International, and whose get were also winners at the California International Livestock Show at San Francisco, November 1 to 8.

The Edges of all Clark "CUTAWAY" DISKS are Forged Sharp

Each Disk is made of toughest special cutlery steel and won't crack, chip or break. The edge is forged. This makes a lasting cutting edge, much better than one that's rolled or ground down.

Get a genuine CLARK "CUTAWAY" Harrow with cutout disks and thoroughly cut, mix and pulverize your ground.

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Gangs are kept rigidly in place. The special steel rigid main frame does it. Rear gangs can't slue and trail front gangs, but cut midway between front gang tracks. All the soil is stirred and to a uniform depth.

CLARK "CUTAWAY" Harrows save man and horse power—cut time and labor of harrowing in half.

Ask your dealer about them. If he hasn't them some nearby dealer has.

Included in the CLARK "CUTAWAY" line are Heavy and Light Service Tractor Harrows, Horse Harrows, Right Lap Plows, Bush and Bog Plows, Extension Head Harrows, Orchard Plows, and other special disk implements.

Write for free valuable book, "The Soil and Its Tillage" also complete catalog.

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Agri GYPSUM

Apply AGRI GYPSUM to your land to stimulate the growth of vegetation and release available plant foods essential to crop growths.

Gypsum is recommended for grain lands by authorities on soils

Potash, Phosphorus, Nitrogen and Calcium are valuable elements very often found in soils in such chemical formations as to make them unavailable as food for plants. The application of gypsum breaks up these formations and chemical changes resulting give the crops the full benefit of the growth producing elements.

Gypsum applied to alkali soil will neutralize the alkali, rendering it harmless to the growth of vegetation. The University of California has conducted many experiments with gypsum on alkali soils and the results obtained are the best evidence possible of the effectiveness of gypsum in changing non-productive to productive land.

Alkali soil which may be redeemed to usefulness by using AGRI GYPSUM

Bulletin No. 133, page 8, reads as follows:

"Reclamation of the black alkali has been carried on for a number of years, gypsum being applied, turned under and thoroughly watered. The result has been a very general conversion of the dreaded carbonate of soda into the far less harmful sulfate; and on spots where not a blade of grass would previously grow, there have been produced excellent wheat and barley, three or four feet high and full-headed, although the surface of the ground was, at harvest time, covered by a thick crust of white alkali."

Gypsum is a specific for black alkali. It transforms the harmful sodium carbonate of the alkali into harmless Calcium carbonate. Gypsum supplies the lime calcium in soil deficient in lime and also supplies sulphur which is a fertilizer.

The United States Gypsum Company is the largest producer of gypsum in the world. AGRI GYPSUM is ground fine and properly prepared to produce quickest and most beneficial results.

Inquiries as to what may reasonably be expected of gypsum are cordially solicited.

United States Gypsum Company

(Sole Producers of "AGRI GYPSUM")

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California Cultivator

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American Federation of Farm Bureaus Organized

By Robert W. Hodgson

ONE OF the most important, if not the most important, meetings of farmers ever held in this country was the recent conference of state farm bureau representatives in Chicago, November 12-14, for out of that meeting of farmers from all over the nation has come the largest and strongest farmers' organization in the history of this nation, the American Farm Bureau Federation.

It means that no longer will the American farmer meekly submit to being the scapegoat of either capital or labor. Notice has been served on both that henceforth the farmers of the nation, as the largest industrial class, propose to have a part in shaping national affairs and in insuring a fair return on their investment and labor. In wisely adopting this attitude the American farmer continues to be, as always in the past, the great stabilizing national influence in periods of national crisis, the anchor of the nation to windward in times of storms of radicalism.

The American Farm Bureau Federation comes as a logical development of the farm bureau movement. It is conservatively estimated that well over 1,000,000 farmers are allied with the several thousand county farm bureaus in the country, most of which are federated in state organizations. Early last spring ten of the Eastern states already having statewide organizations met at Ithaca, New York, to discuss the advisability of a national organization. So unanimous was the sentiment in favor of such a meeting that an organization committee was appointed with instructions to call a meeting at Chicago, November 12 and 13, to perfect a national organization.

At this meeting representatives from 36 states were present, those from California being W. H. Walker of Glenn County, president of the California Farm Bureau Federation, George H. Sawyer of Stanislaus County and Volney H. Craig of Los Angeles County. This convention represented nearly 1,000,000 American farmers. And while this membership is now probably not much over one-third that of the American Federation of Labor, the influence of the American Farm Bureau Federation is already probably as great as that of organized labor for most farm bureau members represent several other workers on their farms, members of their families and hired help.

Much time was taken up in harmonizing differences in aims and ideals, as well as in getting acquainted. Discussion regarding financing the new organization was particularly heated, but was compromised satisfactorily. Drafting a constitution acceptable to all 36 states proved a long and tedious process but the conference really accomplished the purpose for which it was called, the launching of a plan of work for the American Farm Bureau Federation.

The objects of the new organization as expressed in the constitution, which must be ratified by at least ten states before the date set for the next meeting, March 3, are "to correlate and strengthen the state farm bureau and similar organizations of the several states in the national federation, to promote, protect and represent the business, economic, social and educational interests of the farmers of the nation, and to develop agriculture." The three captions under which practically all the purposes and objects of the federation may be summarized were legislation, education, and business. The federation proposes to acquaint the various legislative bodies of the nation, both state and federal, as to the desires and wishes of the farmer and in turn to keep its members informed regarding proposed legislative measures affecting the farmer. Education by means of the closest cooperation with the state and federal departments of agriculture, through demonstrations and otherwise, was one of the keynotes of the convention. Cooperative buying and selling also constituted a big feature of the discussion.

The originally proposed constitution provided for one representative from each state and an additional representative for each 10,000 paid up members. The states having the smaller organizations naturally felt that by this arrangement they would not receive adequate representation on the board of directors and accordingly made a fight on this point which was finally compromised on an additional representative with voting power for each 20,000 paid up members.

Selecting the executive committee proved a difficult task, the California delegation playing a leading part in the discussion culminating in the final arrangements made. The nation is to be divided into four districts the northeastern group, the central group, the southern group, and the far west group. Each region furnishes three members to the executive committee, which, together with the president and vice-president, make up an executive committee of 14 members. The president of the new organization is J. R. Howard of Iowa, the man who is stated to be largely responsible for the repeal of the daylight savings act; vice-president, S. D. Strivings of New York, and treasurer, O. A. Bradfute of Ohio. The members of the executive committee are: Southern group, Gray Silver, W. Virginia; James W. Morton, Georgia; George Bishop, Oklahoma. Far west group, W. H. Walker, California; W. G. Jamison, Colorado; John F. Burton, Utah. Central group, O. A. Bradfute, Ohio; Harvey J. Sconce, Illinois; Chester H. Gray, Missouri. Northeastern group, E. B. Cornwall, Vermont; E. F. Richardson, Massachusetts; H. E. Taylor, New Jersey.

The states represented at this memorable convention were: West Virginia, Connecticut, California, Illinois, Indiana, Maryland, Michigan, Kansas, Missouri, New Hampshire, Vermont, Minnesota, Iowa, Colorado, New York, Virginia, Utah, Kentucky, Nebraska, Massachusetts, Oklahoma, Delaware, Mississippi, New Jersey, Georgia, Tennessee, Texas, North Carolina; Montana, South Dakota, Ohio, Rhode Island, Arkansas, South Carolina, Pennsylvania and Idaho.

Resolutions

We declare our independence of affiliation with any commercial labor or industrial organization, but maintain a cooperative attitude toward all movements promoting the welfare of American institution.

We appreciate the work of the press, both agricultural and secular in its promotion of high ideals and constructive thought.

We unqualifiedly assert our loyalty to the principle of the freedom of the people under our American institutions, and while recognizing the right of any and every class of our people to associate themselves for material benefit, we just as strongly assert the right of every American citizen to the free and unhampered privilege of disposing of his labor or products thereof as he may individually desire.

We desire to point out that a large factor in the high cost of living is the curtailing of production through shorter hours, lessened efficiency of labor, and strikes.

We approve the federal land banks and request that the miximum individual loan be changed from $10,000 to $25,000.

We recognize that land ownership is stewardship, that ownership does not give the right to soil depletion and we deplore the system of tenantry that encourages a rapid reduction of soil fertility.

We recognize our great obligation to the returned soldiers and sailors and recommend the appointment of a committee of three of our board of directors to act with the American Legion in devising means of getting returned soldiers reinstated in civil life.

We extend to our soldiers of land, sea and air, men and women, fresh from the battle fields and hospitals of Europe, our admiration and our love. These young men and young women, sons and daughters of ours—who, one year ago were in the camps at home and abroad, serving, suffering and dying—that civilization might not perish from the earth, are worthy of all boundless gratitude and praise, and no gift of the people is too good for them. We believe a constant effort should be kept up to help place them again among us, in society and business. We welcome them to the farms and we will do what we can to help them begin life over as farmers, if they choose to do so.

We commend them "for organizing the American Legion." We see in it what we have seen in the "Grand Army of the Republic" and the "United Confederate Veterans," citizen soldiers for law and order, and a guarantee that civil and religious liberty shall be maintained in this land at all costs.

This organization recognizes that the strength and origin of the American Federation of Farm Bureaus has been achieved through cooperation with the state and federal departments of agriculture, upon a sound educational program of local work.

We declare it to be our purpose to continue such cooperation in the future and that neither business enterprise nor legislative activity should diminish such cooperative educational activities.

We urge the strengthening of the county organization financially and otherwise, so that capable men may be employed to manage the work of the county organization.

When state or federal government grants corporate rights to any organization it is incumbent on that government to protect the public through such regulating legislation as will best prevent favoritism, stimulate initiative and guarantee adequate public service.

We urge that as rapidly as possible all corporations doing interstate business be under federal charter and all other corporations be incorporated under the laws of the state in which their principal business is located.

We are opposed to government ownership of public utilities. We demand the early return of the railroads to private control, under such conditions and regulations as will render adequate service at just and equitable rates. We particularly demand immediate attention to restoring the efficiency of livestock and other perishable transportation, both in car equipment and train schedules.

Recognizing the economic law that impels the consolidation of business we proclaim that relief from the extortion of monopoly in manufacture and commerce is to be found in cooperation, in enforced publicity of business records, and a just graduated income tax rather than through interference with the economic law upon which great industries are founded.

We recommend such regulation of all purveyors of foodstuffs, including packers, wholesale grocers, commission men and all similar industries, in such manner as will be just and fair to producers and consumers as well as to the industries.

We demand strict economy of public expenditures in all departments of government, the cutting out of such customs in transaction of public affairs as add expense and delay rendering efficient service, and the discontinuing of all departments or employes which are not rendering efficient service.

Where service is needed and actually rendered we favor appropriations adequate to meet that service. We do commend the extension work of the department of agriculture, through the land grant colleges of the several states.

We commend especially the bureau of farm management, department of agriculture, and we believe the work of the bureau of markets and bureau of crop estimates should be vitalized and adequately supported to meet the needs of agriculture.

We deny the statement of some congressmen that farmers demand free seed distribution and condemn the practice.

With few exceptions in the past 40 years the farmers' sole profit has come from unrestored fertility taken from the soil and from long hours of

Continued on Page 754.

Agricultural News Notes of the Pacific Coast

Northern California

Hayward has voted $320,000 for civic improvements.

The state university wants $15,000 for a farm gymnasium.

A Chico man has invented an almond cracking machine.

Orland, Glenn County, will ship 12 cars of oranges this season.

Colusa County has 49,000 acres of rice which produced 1,000,000 bags.

The price of eggs in Petaluma fell one cent a day for all of last week.

The Benicla, Solano County, schools are closed by an epidemic of diphtherla.

A shingle mill is being built at Three Chop, near Willits, Mendocino County.

Near Meridian, Santa Clara County, 210 acres of rice averaged 61 sacks per acre.

One rancher near Richvale, Colusa County, lost 50 hogs from cholera in one week.

The poultry association of Petaluna handled 20,000 cases of eggs during September.

A prominent poultryman at Petaluma says eggs will go to $2 a dozen before spring.

Sutter County peach growers will discard Heath Cling and Phillips Cling for other peaches.

Ukiah, Mendocino County, has a valuable chrome deposit which is being mined and marketed.

A row of big shade trees in Durham, Butte County, saved the town from a disastrous fire recently.

Twenty cars of oranges will be shipped from the Mills orchards at Hamilton City, Glenn County.

A. F. Swain of the University of California says California has 180 species of plant lice or aphids.

A fruit dehydrating plant will be erected at Hamilton City, Glenn County, and possibly a cannery.

The California Fruit Exchange has bought the Davis Box and Lumber Company's plant at Mohawk, Plumas County.

The first carload of oranges sent east from Northern California was from the Nimbus ranch, Sacramento County.

Sonoma County has issued a booklet entitled "Agricultural, Industrial and Scenic Resources of Sonoma County."

Around Tarko, Sutter County, there are tens of thousands of sacks of beans in the field, for which there is no storage room.

When a building burns down at the state colony at Durham a building bee is held to provide free labor for the erection of a new one.

Aikuku rice on the Christensen and Burmester ranch, Colusa, yielded 50 bags to the acre on 400 acres. A bunch of heads averaged 381 kernels.

The directors of the Colusa County Agricultural Livestock and Fair Association met at Williams on November 19, elected officers and perfected arrangements for the county's biggest fair.

The Callfornia Tractor and Implement Associatlon met in San Francisco, November 15, and decided on holding many small demonstrations during the year, rather than a few big ones.

Central California

The new evaporated milk plant at Tulare is completed and working.

The average price received for Tokays this season was $2,279 a carload.

Fresno has bought $750 worth of Poland China hogs for its municipal farm.

Orange picking at Porterville, Tulare County, is held up by car shortage.

The three Tulare creamerles had a combined payroll of $208,540.35 for October.

A plant to grind lime rock for fertilizer will be built at Salinas, Monterey County.

On the wharf at Monterey are 9,000 boxes of apples waiting for a ship for a week past.

Watsonville reports 15,000 to 20,000 sacks of potatoes being harvested from 100 acres.

Last spring Lodi growers asked 5,000 cars for the grape crop; 9,500 cars were shipped.

Hogs sold at auction at Turlock, Stanislaus County, last week brought $16.10 per hundredweight.

Onion growers on the San Joaquin delta lands near Stockton have cleared $1,050 an acre on this year's crop.

There are about 1,000 cars of apples to go from the Pajaro Valley, with a serious car shortage at present.

Residents of that part of Merced County lying north of the river are seeking to be joined to Stanislaus County.

Ranchers about Modesto are seeking to force the county supervisors to allow them to vote on an irrigation district.

The fruit growers of Cupertino, Santa Clara County, organized November 22 and will canvass the district for members.

Rabbit raisers met at Hayward, Alameda County, and petitioned the state university to institute a rabbit experiment station.

Livingston, Merced County, has shipped 323 cars of grapes this season and 18 of sweet potatoes during the last week.

A cannery at Lodi, San Joaquin County, put up 120,000 cases of fruit: Peaches, 50,000; tomatoes, 40,000; apricots, 30,000.

A Santa Cruz grower picked $436 worth of raspberries from a quarter acre. The varieties were St. Regis and Superlative.

The Almond Growers Association has on hand 160,000 almond trees which it will plant in the southern part of Monterey County.

The state egg laying contest started at Santa Cruz on November 15 to last one year. There are 40 pens from various parts of the state.

The Californla Orchard Company, composed of Ventura County men, will plant out 1,500 acres of apricots near King City, Monterey County.

The California Prune and Apricot Growers have sent out a notice that they need 20,000 more acres of prunes and 6,000 additional acres of apricots.

The San Jose plant of the Californla Cooperative Cannerles handled this season 5,882 tons of peaches, 5,913 tons of tomatoes, and 1,637 tons of aprlcots.

Southern California

Oxnard will soon build a new city hall.

The Imperial Valley is shipping grapefruit.

Cotton seed in Fertilla, Riverside County, is selling for $63.50 a ton.

Anahelm has a city manager now, the new plan being adopted November 20.

The Westgard ranch near Brawley netted $3,500 for apricots from 40 acres.

Red spider is very troublesome in orange orchards of the Pomona Valley.

Orange, Orange County, will install ornamental lights to the value of $18,000.

A load of six bales of cotton sold last week at Blythe, Riverside County, for $1,650.

The cannery products of Pomona for 1919 are estimated to be worth $2,000,000.

The California Bean Growers Association has sold 350 tons of beans to go to Europe.

The Hemet-San Jacinto Growers Association asks local farmers to grow more peaches.

The Los Angeles Poultry Association will hold its 22nd annual show December 7-10.

Mealy bugs are infesting celery in Los Angeles County, having found a new host plant.

Fallbrook cast 238 votes for the San Diego County road bonds and not a vote against them.

A short course in beekeeping will begin at Riverside, December 1, and last the entire week.

The Yucaipa Apple Growers Association had shipped east 75,000 boxes of apples to November 15.

Up to November 20 Palo Verde Valley cotton had brought $1,700,000, this on about one-third of the crop.

The lettuce growers of the Imperial Valley will ship about January 10 but spinach will be ready December 15.

The Coachella Valley claims it is 102 cars short of the number necessary to move the waiting produce.

The Yucaipa Apple Growers have finished shipping and will outline next year's work at a meeting on December 6.

The Anaheim Walnut Growers Assoclation handled 550 tons of nuts this year as agalnst 280 tons last year.

Southern California real estate dealers say the heaviest call for rural realty is for fruit bearing orchards of two or three acres.

On November 21 the Wineville section, between Riverside and Ontario, experienced the heaviest sand storm known in that section.

On December 10 through Pullman service between San Diego and Chicago will be instituted on the San Diego and Arizona Railway.

The Pomona "Pageant of Progress," staged at Pomona, Los Angeles County, October 30, cost but $2,500 and will be repeated next year.

The Imperial Valley will have the biggest celebration in its history December 5-6, in honor of the opening of the San Diego and Arizona railway.

The Coast and General

South Texas has over 15,000 acres of cabbage.

Cotton at Chandler, Arizona, sold last week for 86 cents.

The Hawaiian pineapple production for 1919 is valued at $22,500,000.

Washington apples are going East in heated box cars with attendants.

The British Columbla potato crop is at least 15,000 tons shorter than that of 1918.

Japanese wholesale commission men in Portland, Oregon, have organized an exchange.

The federal government will sell 500 farms at auction in Yuma, Arizona, December 10.

The October prune festival at Vancouver, Washington, is to be made a permanent affair.

A frost proof apple warehouse was built at Omak, Washington, with 150 tons of baled hay.

Hood River, Oregon, is storing apples in all unused buildings, churches, church basements, etc.

Owing to flood conditions the early cabbage crop in the lower Rio Grande Valley will be a failure.

Yakima, Washington, fruit by-products experts found frozen apples contain nearly one per cent alcohol.

Long staple cotton sold at Phoenix, Arizona, last week for 86 cents, an advance of 30 cents over last year's price.

Nearly a thousand acres of new land about South Bend, Washington, will be planted to cranberries in the spring.

Apple pickers in Grandview, Washington, district received six cents a box and many earned from $75 to $90 a week.

The apple packing record: Pearl Saltzman, of Hood River, Oregon packed 140 boxes in four hours and 40 minutes.

At Fairbanks, Alaska, 2,000 bushels of wheat were grown this year and in a few years the crop will no doubt meet the demands.

Fifty per cent of the wheat grown in Walla Walla County, Washington this year was of hybrid varieties originating at the state experiment college.

Early frosts in the Salt River Valley of Arizona have probably not injured the cotton. It is believed that it will hasten the opening of late bolls. Up to November 5 it was estimated that not more than 35 per cent of the crop had been picked.

L. M. Harrison, field agent for the United States bureau of crop estimates, has estimated the yield of long staple cotton for Arizona for the present season to be 46,000 bales; short staple, 24,000. He also reports the average yield of corn for the state to be 33 bushels and that of grain sorghums 35 bushels.

An association of fruit growers has been organized to pack and handle citrus and other fruits for Arizona growers. I. de R. Miller of Phoenix is president. Practically all the citrus fruit grown in the Salt River Valley will be handled through this organization, which includes the Arizona Orange Growers' Association in its membership.

Frost Control and Related Factors

By J. C. Whitten Before Fruit Growers at Chico

HERETOFORE we have thought of protecting plants from cold only by direct methods, such as covering or sheltering the plants or by orchard heating, to raise the temperature of the surrounding atmosphere. This conception was based upon the accepted belief that a given kind of plant inherits a given degree of hardiness; that there is a "critical temperature," above which the plant will live without injury, and below which the plant will be injured or even die. Certain kinds of plants are notably hardy or resistant to injury from cold; others are notably tender and subject to injury, even in relatively mild climates.

We now know that while the above factors are true, in part, they do not explain the whole truth in determining the resistance of a plant to cold or drouth or heat or to any other environmental influence that may favor or oppose the health and safety of the plant. To emphasize this statement we only need call attention to the fact that a given variety of fruit tree may safely endure low winter temperatures while it is dormant, that it may be injured by a mere frost after it has started growth in spring, and that a sudden frost may kill it after it has gotten into the accelerated growth of the warmer summer.

The state or condition of a tree at a given time; its degree of ripeness and rest, or its degree of activity and growth, govern largely how much cold or other unfavorable influence the tree may safely endure.

We should get in mind the fact that a fruit tree is a living, sensitive, plastic, shapeable thing. In developing its growth it responds to every outside influence. Every cultural practice, such as pruning, fertilization, tillage or irrigation, applied to the tree or its soil, causes a response which makes the tree either hardier and more resistant or tender and more susceptible to injury. Let us understand why.

First, let us outline the more important phases of the annual cycle of growth and development of a fruit tree. The tree puts out its leaves and blossoms in spring. This new growth is supported by plant food reserves (mainly starch or sugar) stored in the tree. Except for the presence of this stored reserve of plant food the tree could not put out its leaves.

As soon as the green leaves are put out they become the source in which further supply of plant food is elaborated (or digested) to supply the daily growth and development of the tree and its fruit. Crude sap, taken in by the roots, is helpless to build new tissue or support further growth until it is digested in the leaves. From the leaves the digested plant food is distributed through the growing layer to all parts of the tree, where it builds up new growth. Digestion of plant food can go on in the leaves only in the presence of the green coloring matter and of sunlight. Crude plant food is carried to the leaves and digested plant food is distributed from the leaves, dissolved in water or sap.

The main length growth of branches and the formation of additional leaves normally should take place during the first few weeks of spring and early summer. So long as plant food, digested daily in the leaves, is being used up largely in promoting rapid length growth of branches and formation of more leaves, just that much less remains available to nourish and develop the fruit crop, the blossom bud for the following year and to store for winter in the tree.

As soon as length growth and leaf formation slows down, more digested plant food becomes available to accelerate rapid growth of the fruit, to develop blossom buds for the following spring and to store plant food reserves in the tree for the coming winter and spring. This emphasizes the desirability of spraying for red spider and maintaining green, healthy leaves to digest plant food throughout the summer and fall.

Studies made at the Missouri experiment station show that normally the sap of a fruit tree is least concentrated (contains the least sugar and digested plant food) during the period of rapid length growth in spring and early summer. Sap becomes more and more concentrated after length growth ceases. The supply of plant food reserves becomes greatest as the tree goes into winter condition.

The earlier a tree finishes its length growth the more concentrated its sap becomes and the more abundant its supply of plant food reserves. The more concentrated its sap, the more cold the tree will stand either in winter or during spring frosts. In one plot peach trees which had continued rank length growth until frost had all their flowers killed on a night the following spring at a temperature of 27 degrees. The following night the temperature dropped to 22 degrees. An adjoining plot of trees which ceased length growth early, but which maintained healthy mature leaves until frost, endured this lower temperature safely without injury to their blossoms.

The merits of the new system of pruning, now being advocated, are better understood in the light of the above facts. The prominent feature of the former standard system of pruning is that the trees are severely headed back each winter. As a result rank new growth is stimulated at the top of the cut-back branches. This rank, tender growth continues to lengthen and to make new leaves throughout practically the entire summer. This prevents early storage of plant food reserves and concentration of sap in the tree.

In the new system of pruning, the main limbs are established as early as possible. Once they are established they are not subsequently headed back. They are pruned by thinning out surplus limbs. Not being headed back their length growth slows down. Length growth ceases early and terminal buds form. Storage of plant food reserves begins early. The tree accumulates a more concentrated sap. Better development of fruit and fruit buds becomes possible. The tree becomes more resistant of cold.

Trees severely headed back call for

Continued on Page 752.

Four Cents Out of Sixty

By Frank T. Swett Before 52nd State Fruit Growers Convention

SIXTY CENTS for a can of Bartlett pears? Good-night! So said Jones to the grocery clerk. "What's the idea? I used to buy the same brand for 30."

Jones is a successful business man of San Francisco. Mrs. Jones had phoned his office that afternoon: "Company for supper. We haven't a bit of fruit in the apartment. It's too late to order. Now, dearie, call in at Goldberg Bowen grocery and bring home a can of nice Bartlett pears."

Jones is a man who wants to be shown. He asked the clerk, "What's the reason of this raise?"

"Why, Mr. Jones, don't you read the papers? Senator Brown of Los Angeles, Mrs. Cleverdon of Berkeley, Secretary Connelly of the Grocers Association and a whole bunch of mayors are agreed that the farmers are profiteering on us city guys, and wicked Weinstock has organized them into terrible trusts to sting the consumer!"

"Believe me," said Jones, "I'm going to investigate," as he jumped into his Pierce-Arrow and sped home to the apartment.

The next day he talked with a banker on that painfully popular theme, High Cost of Living.

"Inflated currency, diminishing dollar, excessive demand for all foods, restricted production of commodities due to the strike habit—the customary aftermath of all big wars," said the banker. "Mark Sullivan said it in Collier's Weekly in his remark that 'the dollar should be renamed and designated 'dollarette.' We're all trading in 50 cent dollars. Now, Jones, your 60 cent can of pears is really a merely old fashioned 30 cents."

"This is too abstract for me," said Jones. So he asked a prominent canner who recently announced in a financial letter to the press that canners had all made phenomenal profits this season; but now that it had all been sold the price was really too high and that the remedy next year would be to pay the fruit growers less for their fruit. "Growers must not expect such exorbitant prices next season. The canner told Jones all about higher cannery labor costs, etc., but said nothing about higher costs on the farm.

But Jones was thorough. He had been told at second hand about farmers' combinations. He wanted to beard one in its den. He bravely ventured into the office of the Pear Growers Association.

The retailer had passed the buck to the "farmers' combine," the canner had followed suit. Mayors and supervisors had emphatically berated the far off farmer. Was this solution correct?

Secretary Hamilton was at his desk. Said Jones: "I'm going to ask you some important questions. While I'm making double the money I used to, it takes it about all to live comfortably. Shoes, clothes, nurses, housemaids, rent, theater tickets all have gone up; and it's most aggravating to pay more for food. Why did the grocer charge me 60 cents for those pears? Why don't your association sell the fruit cheaper to the canner? I'm afraid the growers are profiteering. Defend yourself if you can!"

"All right," said the secretary. "Let's analyze your 60 cents. When you paid, you laid on the counter a four bit piece and a dime. What did the grower get from the four bit piece? Not one penny! The grower got the dime. Out of that dime he paid for a whole year's work in the orchard, taxes, irrigation, spraying, plowing, tractors, compensation, insurance, spray materials, distillate, housing for employees. The owner and his family lived and worked on only four pennies of your dime. Six cents he paid out for employees and orchard expense. If the philanthropic grower could afford to work for nothing and board himself, then pears might sell four cents cheaper, or 56 cents. Now, Mr. Jones, if you are looking for profiteering will you seek it in the growers' four cents or in the other 56 cents? Without your dime production would stop short."

"You surprise me," responded Jones. "I can hardly credit your data."

"Here are the facts," said Hamilton. "The association sold 14,000 tons to canners at $85 a ton. A ton will make from 37 to 40 cases of canned pears, or considerably more than 850 cans. At ten cents a can this is $85."

"The deuce you say," said Jones. "I don't begrudge the dime, for I realize the production must continue. But where did my four bits go?"

"That went for canners' boxes, freight, stevedores, deck hands, coal miners, oil men, draymen, cold storage, cannery wages that are three times as high as formerly, high freight rates on sugar, tin and labels and cannery cases, higher wages in lumber camps, rent, clerk hire and delivery for the retailer.

"The canner sold the case of 24 cans for $8.50. When retailed the same case cost consumers $14.40. Each can carried a burden of 25 cents in its trip from the canners' warehouse to the consumer, or a total of $6. When the grocer took your can from the shelf and handed it over the counter, his 20 per cent, earned in two minutes, cost you 12 cents more than the original growers' price on the pears."

"Robbers," said Jones. "Walt," said Hamilton. "Doesn't Mrs. Jones usually telephone the store and have goods delivered way out at your aaprtment and charged? The grocer's price is set according to customary expense and not by the exceptional oc-

Continued on Page 755.

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

An International prize winner and sire of other California prize winners gives us a look at his handsome face on cover of this issue. California's fame as a livestock state has been increased by the selections made by Prof. True and his corps of helpers at the university farm. This is proven by the telegram from Chicago which is given on this page. More will be given next week of California's winnings at the International.

FOUR CENTS

Let the producer who has ready somewhat of apology because of the profiteering practices of which he is accused read Frank Swett's "Four Cents Out of Sixty" on page 749. Just a homely story, that is all, but full of facts, or at least of one big fact.

PEACH BLIGHT

Before December 15 spray for peach blight. It will need another spraying next spring, but whether you do or do not spray them, spray now and spray at once. This pest is the same fungus that causes shothole in the apricot, prune, etc. The lime-sulphur 1-10 does the work, also reduces San Jose scale and other pests which may be infesting the tree.

Don't grow pests; grow fruit.

STILL DRY

The northern end of the state has received a limited supply of rain within the past week. It did not reach the Tehachapi in any quantity, however. Fields of grain which had started are now yellow and many acres are completely past redemption. Reseeding will be necessary. Orchards are being irrigated and cover crops will be short and of little value unless it rains soon. As may be noted by the weather report on Page 775 Los Angeles and San Diego have had more than their normal to this date, but practically all of this fell in the month of September and so far as dry farming crops are concerned was of little value.

REMARKABLE WINNINGS

The Californian who has never attended the great International at Chicago and traveled for miles through the aisles of the great exposition buildings until bewildered by the multitude of the finest of pure breds from every state in the Union can hardly realize the honors which California has won as shown by the telegram from Mr. Royce. Of course, we would hardly be human if we did not wish for more and feel that California was justly entitled to at least two or more grand championships. The university farm did at one time bring home what no other institution ever did from an International—two grand championships in one year. Hence, we all have high expectations when Prof. True and Aleck start for the International, and while, as we say, we want more, we must also add "Congratulations to California's breeders."

CALIFORNIA'S WINNINGS AT INTERNATIONAL

The Cultivator's livestock editor is in Chicago attending the great International Livestock Exposition. He will later give the details of the exposition, likewise illustrations. As we go to press a wire comes from him indicating California's place in the livestock world. It is a great honor to win at the International. Here is Mr. Royce's wire indicating some of California's honors, some of which are due to Prof. True's selections and Alex. McDonald's feeding at the University Farm; others to California's breeders.

University Jock 3rd, first senior yearling and champion Angus, champion yearling and reserve grand champion.

University Jock 4th, first senior Angus calf and reserve champion Angus.

California Majestic, first senior Shorthorn Calf.

California Prime Duke, first junior yearling Hereford steer.

California Grizzly, third junior yearling crossbred steer.

California Perfect Lady, ringside choice for grand champion, third senior crossbred calf.

Shropshire lamb, first.

Hampshire lambs, first, second and third in class and first on pen.

Southdown lambs, first, second and fourth; first on pen and champion Southdown.

Grade lambs, first, second and third and first on pen.

Yearling grades, third in class and third on pen.

Duroc senior pigs, seventh and second on pen of three.

Junior Duroc pigs, second and second on pen.

Yearling Polands, fifth in class and fourth on pen; Bassett, fourth and fifth with senior pigs and second on pen. Poland show strong.

California made a great showing and only hairline decision prevented having grand champion steer.—Royce.

SPRAY GUN

Some 25 years ago we had a fairly liberal education and experience in spraying San Jose scale, brown, black, red, yellow and several other shades. It was with one of the latest improved pumps of that time. Of course, it was hand operated, as were all pumps, but it did have a new and large air chamber. It was suggested that a pressure of 100 to 150 pounds be maintained, but the first of these pumps had no indicator or pressure guage so that a husky pumper occasionally had the experience of blowing up the pump. The spray was applied by using long brass rods reinforced with bamboo, on the end of which were small brass "Cyclone" nozzles. The spray or fog area was little larger than a lady's fan, and each twig of a peach or apricot tree was followed in the effort to do perfect work.

The other day we saw a modern day outfit. It was different. Gas was doing the work, instead of five workmen there was one, while instead of the long rod the "spray gun" took its place. The mechanism permitted directing dense fog or a stream of more condensed spray to the top of a 20 or 30 foot tree. It was efficiency—a good example for the lax orchardist who hopes the heat or the cold or the drouth or the wet or something will occur to destroy his pests.

Don't wait. Clean 'em up.

AMERICANIZATION

The country is really waking to the fact that Bolshevism, disloyalty, even anarchy is being preached and worked for in this country as never before, and probably even to a greater extent than in any other country. This awakening is causing in all sections the formation of an organization which has for its mission the creation of a more loyal spirit and increasing the number of true Americans. The Los Angeles Americanization Fund Committee send out a statement from which the following facts are gleaned:

Bolshevism, I. W. W.ism—syndicalism—the doctrine of the red flag—is spreading its poison everywhere in our country. A determined organized effort to overthrow our government is being financed by those forces in Europe which have wrecked Russia, and which were against us in the recent war. Lenine sent ten millions in gold to this country to be used to spread the Bolshevist doctrine here. The I. W. W.'s here are our Bolshevists—the Reds.

The I. W. W.'s claim 7,000,000 in America and 100,000 in California. They have in the neighborhood of 250 magazines and periodicals preaching their doctrines. They are directed and controlled by paid managers.

Records seized in raids on their headquarters reveal plots against our government almost unbelievable. A most dangerous and insidious propaganda is flowing through various channels, aimed at tearing down the very bulwarks of our Americanism and civilization.

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Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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POMONA MFG. CO.
POMONA, CAL.

Citrus Growing In California

A 5/16 of an acre plot of Orange Trees at Corona, fertilized with

NITRATE OF SODA

and acid phosphate at 320 lbs. of each per acre, yielded at the rate of 411 boxes of high quality fruit. A plot alongside, fertilized without Nitrate, gave a rate of yield of only 322 boxes per acre of inferior fruit. This difference of rate of yield of 89 boxes per acre shows an increase in value of produce equivalent to $324.85.

100 lbs. of Nitrate of Soda in this case added a rate of profit to the grower's income of $101.52 per acre.

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You are Invited to Inspect a Real Working Dehydrating Machine.

GET YOUR ORDER IN

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MAKE MORE DOLLARS.

Write for demonstration appointment.

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FOR SALE

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Smudge Pots

Fifty Cents Each

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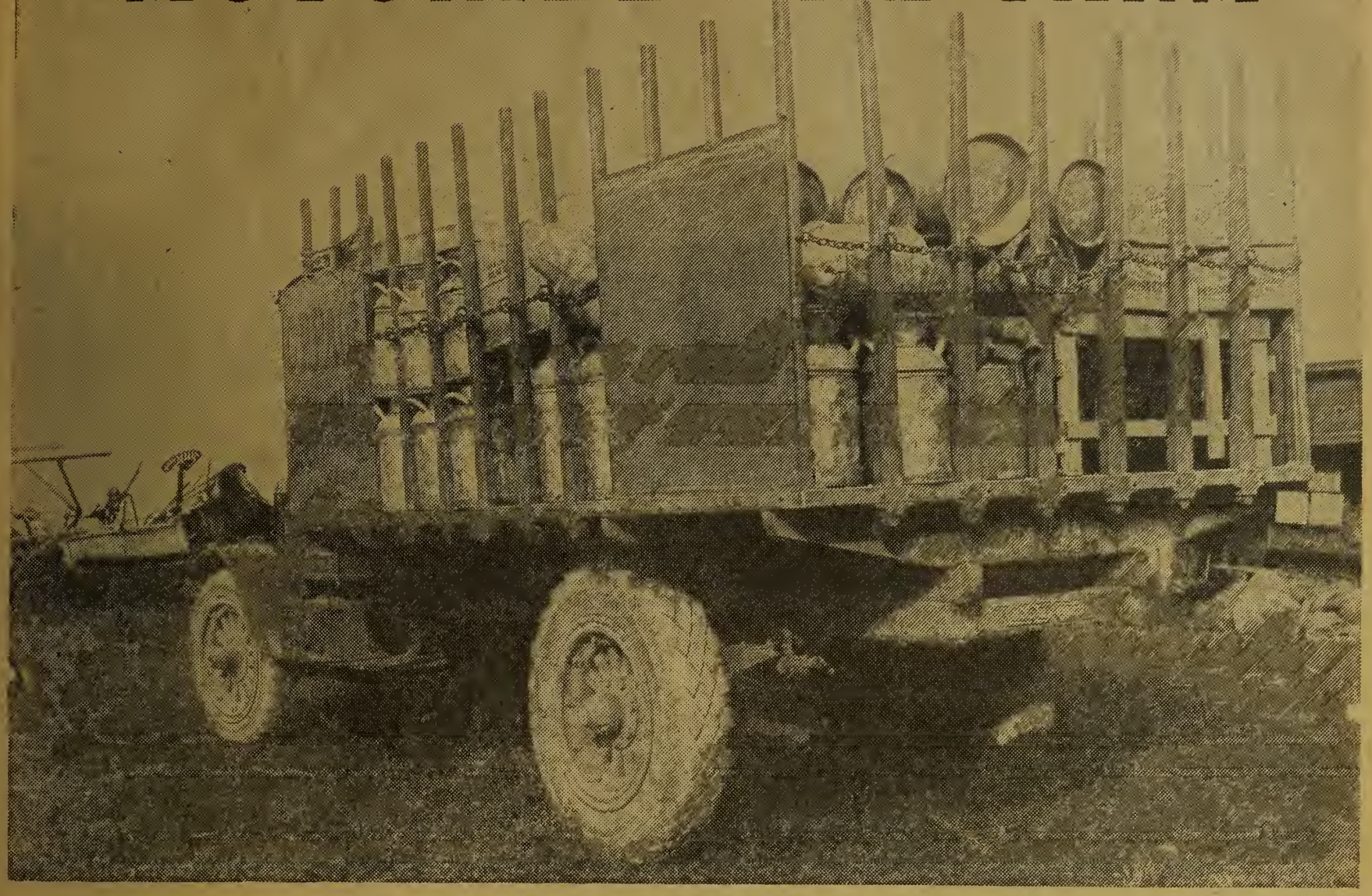
MOTORIZE THE FARM



AFTER doing much of the market hauling of thirty-two farmers around Eden Prairie, Minnesota, with a motor truck on Goodyear Cord Pneumatic Truck Tires, Mr. C. P. Page states: "I would not use solid tires again under any consideration. Hills, mud and storms don't stop the big, tractive Goodyear Cords. Their cushioning is saving truck repairs and depreciation. They also are saving gasoline and oil. I now haul more milk and other loads in less time, find the work far easier, and note that the pneumatics save our roads. Several people have adopted them as a result of my experience with Goodyear Cords."

THE experience described above affords an excellent example of what pneumatic truck tires are accomplishing for farmers. Every limitation hitherto placed on the farm use of motor trucks by solid tires has been removed with the perfected pneumatic tire. For this reason, Goodyear's pioneer work in developing cord pneumatic truck tires has been extremely opportune; it has led to the more extensive use of farm trucks during a serious scarcity of farm labor. Now, farmers are finding it extremely advantageous to employ Goodyear-Cord-equipped trucks with other time-saving motor units and, thus, to motorize their work quite completely. Special information concerning the use of pneumatic-tired trucks on farms may be obtained from The Goodyear Tire & Rubber Company, at Akron, Ohio.

SAVE TRUCKS · LOADS · ROADS
Haul on Pneumatics

GOODYEAR

MADE IN U.S.A.

Pruning at Burbank

By Ernest Braunton

DR. J. C. WHITTEN'S pruning demonstrations in Southern California came to an abrupt close November 22 when he was suddenly recalled to Berkeley. It seems that two of Dr. Whitten's staff in the division of pomology are in the hospital, another has resigned, and the field classes in horticulture began at the university farm at Davis on the 24th. To say this division is badly upset is to describe present conditions very lamely.

Farm Adviser Hodgson of Los Angeles County, however, filled the breach very well, being a larger man, physically, than Dr. Whitten. The Burbank meeting was held at the ranch of L. B. Doan, a mile south of the town. There Mr. Hodgson pruned one tree each of plum, peach and apricot, the plum having been pruned by Dr. Whitten last year. During the demonstration Mr. Hodgson told the assemblage the why and wherefore of pruning, some of which was as follows:

"The principles underlying this system of pruning should obtain no matter what your style of pruning. It has been tested for five years at the university farm at Davis and the results have been highly satisfactory. The old system of pruning was considered good before these principles were understood. In fact it had developed to a higher standard in California than elsewhere and was called the California or vasiform system. People came to California to study our methods.

"We were told that the heading back system was to get stockier, more vigorous trees, but we found out through an extensive series of experiments at Davis that the trees so pruned were the smallest, that by slashing away 'firewood' each year we really reduced the vitality. Again, we took trees of three leaders, cut one leader back two-thirds, one one-third, and the other was left unpruned. The uncut leader in the fall was twice as large as the one cut back two-thirds and the other one was intermediate. On pulling up the trees it was found the roots were developed corresponding to the top, those on the side of the unpruned leader being twice as heavy as those below the heavily pruned leader. Cut out small branches to thin only and cut back most of the others to stubs so they will bear leaves not only to shade the trunk and limbs and bear fruit spurs, but the larger the leaf surface the more plant food is manufactured and no tree is vigorous when having a poor foliage crop.

"The leaves must stimulate vigor to back up the fruit buds which come in July and August and which must then harden and ripen to get ready for next season's supreme effort. If the storage of food is heavy it is thick with sugar and starch and evaporates slowly, therefore is largely consumed by the tree and is present to respond when the need is great. All know that pure water evaporates quickly. Add a little sugar or salt and evaporation is much checked. Fill the same pan with molasses and it will not evaporate during the entire summer. So much for the summer value of rich sap. Clear water freezes easily but add a little sugar or salt and many additional degrees of cold are necessary to freeze it. So the rich sap protects the tree in winter. And a heavy leaf crop is necessary to make and store this rich sap. Some of the evils due to heavy pruning are sunscald, wood rot, reduction of size and vigor, also reduction of fruit crop for first few years as it retards development of fruit spurs, each year's best strength going to feed the long upright shoots which we repeatedly cut away. It is not necessary to thin the fruit crop on young trees properly pruned, for nature is equal to their demands, but if we too much violate nature in beheading the trees, fruits would prove a heavy burden."

FROST CONTROL

Continued from Page 749.

more moisture or are less able to endure drouth during the following summer. The rank new branches and leaves are soft, tender and succulent. This condition continues throughout the summer. They evaporate much water. The rank growing branches and leaves toward the top are able to draw water out of the leaves and fruit on the twigs below whenever the water supply becomes inadequate in the soil. These rank growing parts above rob and shade out growth lower down on the tree.

Where the main limbs are not headed back rank length growth at the top of the tree is not stimulated. Shorter growth of branches is about equally distributed in branches up and down the entire tree. Length growth ceases early. The tree early attains a concentrated sap and stores plant food reserves. These slow growing limbs and leaves become firm in texture and exaporate but little water. There are no rank succulent upper limbs to rob or shade out the parts below. The leaves are not likely to draw water out of the fruit in time of drouth. The concentrated sap gives up its water less readily. Such trees will endure more spring frost or more drouth due to their better ripened or perfected tissue and their more concentrated sap.

Judicious summer pruning may be understandingly practiced. Indiscriminate summer pruning may severely weaken the tree. The removal of mature limbs which have ceased length growth, or of leaves that are healthy and firm, reduces the amount of plant food that may be digested and stored during the remainder of the summer. If the summer pruning is severe enough to induce the production of new, tender twigs and leaves, this draws upon the stored plant food reserves and results in a thinner, weaker sap, just when the tree should be storing instead of using up stored food.

Judicious summer pruning consists of the removal of any surplus water sprouts that are growing where they are not wanted. Any permanent limbs that are continuing length growth too late may be checked by clipping back. Dead, broken or diseased parts should be removed.

So long as trees can secure ample water to supply their leaves it is not desirable to reduce the leaf surface more than to check length growth of late growing limbs. If drouth is severe and trees are evaporating more water than can be supplied, evaporating surface may be reduced by judiciously removing the more tender, succulent parts which are least needed as permanent limbs of the tree. Tender, soft, new leaves evaporate many times more water than older, firmer leaves that formed early in the season. The older, firmer leaves, if healthy, and which take on a dark green color, are more serviceable in the elaboration f plant food reserve. The green, soft, succulent leaves on a tree have the power of drawing water out of the green, growing fruit during a dry time This is because the sap of the leaves is more concentrated (contains more sugar and plant food in solution) than that of green fruit. Once the fruit begins to ripen its juice becomes more concentrated and can draw water from the leaves when both leaves and fruit cannot be adequately supplied.

As a result green fruit often stands still in its development during a dry hot spell in summer. The leaves may show no sign of drouth if they can draw water enough from the green fruit. Any treatment, such as heading back in winter pruning, which favors rank succulent leaf growth, favors withdrawal of water from the fruit during dry, hot days. If, on account of inadequate water supply, the ripening fruit begins to draw water from the leaves and thus increases in size rapidly, the tree is unable to produce and store up adequate stored plant food reserves for winter and is less resistant to cold.

100 Cents on the Dollar

THE tractor that is really a 100-cents-on-the-dollar investment for the farmer is the tractor that can be used practically every day of the year, one that is 100% efficient, both on the belt and the drawbar.

The **International 8-16 kerosene tractor** meets the above specifications. The drawbar has a wide range of adjustment both up and down and sidewise so that the tractor will pull any machine or implement on the farm with equal advantage. The 8-16 pulley is so placed that the tractor can be backed into the belt quickly—so placed also that the belt doesn't rub against any part of the tractor nor drag on the ground. And 8-16 power is just right—neither too heavy nor too light—it *fits* practically any drawbar or belt power task on the average farm.

Aside from its adaptability for all-year-round farm work, the **International 8-16 tractor** is a 100-cents-on-the-dollar investment because of its exceptionally efficient and economical (kerosene) operation; because, too, you can always secure repair and expert service without delay through the 92 branch houses scattered over the United States. Your dealer—wherever he is—has a Harvester branch in easy reach.

If you are interested in a 100-cents-on-the-dollar tractor investment just write your name and address along the margin of this advertisement and mail to the address below so that we can send you full descriptive information of the **International 8-16.**

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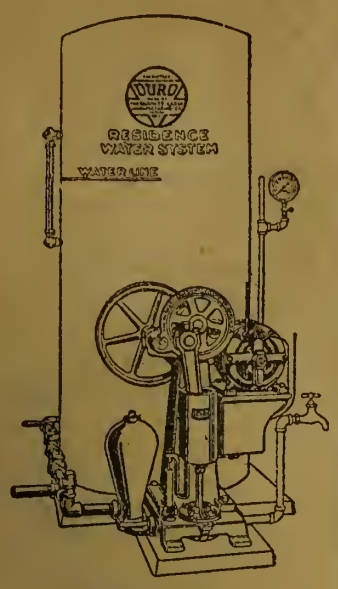

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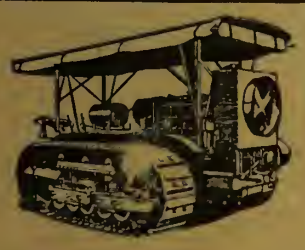

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Thinning the fruit when the trees set an overload is important. A tree may not be able to mature an overload of fruit and at the same time furnish the plant food necessary to develop fruit buds for the following spring. Furthermore, the overloaded tree cannot store up an adequate supply of starch and sugar to render the buds strong and to endure frost or cold weather at blossoming time the following spring.

Spraying to keep down red spider or diseases that injure the leaves is important. Healthy leaves throughout summer and autumn digest and store plant food, giving a concentrated sap which enables the tree to endure cold at the next blooming period. If the leaves are injured and fall early, the tree cannot store up adequate plant food for winter, the sap remains thin and the blossoms subject to injury from cold the following spring.

Steady growth and development is much more favorable than intermittent growth. A soft, succulent, spongy growth in late summer or autumn should be avoided if possible. Such a growth uses up stored plant foods in the tree and prevents further storage before winter. This weakens the tree and favors injury from cold the following spring.

Whitewashing young trees during winter is a means of protection. We now know that the coloring matter in the bark of young trees can absorb heat enough from the sun's rays on clear winter days to raise the temperature of the buds and growing layer 15 to 30 degrees above the temperature of the atmosphere. This high day temperature makes the buds and growing layer of the tree active and tender. As the sun goes down the tree cools to atmospheric temperature in a few minutes. The cells of the plant which have become tender during sunlight may be injured by a sudden drop to the freezing point at night.

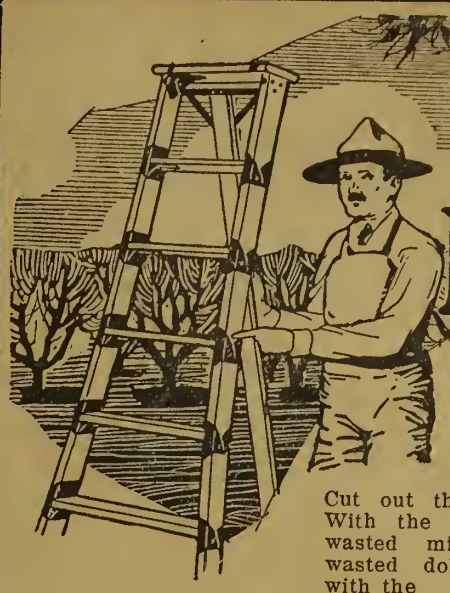
If the young tree is kept sprayed with whitewash during winter the whitewash reflects instead of absorbing the heat rays of the sun; the tree remains at atmospheric temperature or two or three degrees below during the day. The buds and growing layer remain dormant and are not injured by cold nights.

The fluctuating temperatures between day and night break the winter rest period of the tree. Whitewashing sometimes prolongs the actual rest period a month or even more. Fluctuating temperatures between day and night not only make the tree tender, but stored plant food reserves are actually used up and wasted. The tree which is protected by a good coat of whitewash retains a more concentrated sap with lower freezing point. It will stand more cold in spring due to its prolonged dormancy and its greater vigor.

A good whitewash which will stick may be made by using seven pounds unslaked lime, two pounds sulphur, one pound salt. These should be slaked together; the heat of the slaking lime acts on the salt and sulphur to make a wash that will stick. If a little skimmed milk is added to the mixture after it has cooled and when it is being diluted to apply to the trees, it will stick still better.

We now know that sunscald of young trees takes place mostly in winter though its drying effect does not show up until summer. In summer the growing parts of the tree are cooled by the water taken up from the cool soil and evaporated in quantity by the leaves. On a hot summer day of 105 degrees temperature, the temperature of a young tree which is evaporating water from its leaves may be somewhere in the eighties, which is a good summer growing temperature. Whitewashing in winter prevents sunscald of exposed parts.

Recent investigations are throwing some light upon what is taking place inside the tree. An understanding of factors which favor or oppose succulence or maturity of leaves and of wood; dormancy or activity; uniform or fluctuating growth; the storage or using up of plant food reserves; the fluctuation of winter and summer temperatures within the tree and the relation of cultural methods to modification of these factors will enable the thoughtful grower to handle his trees so as to oppose injury from frost and drouth.



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For information as to application, write The Barrett Company Agricultural Department

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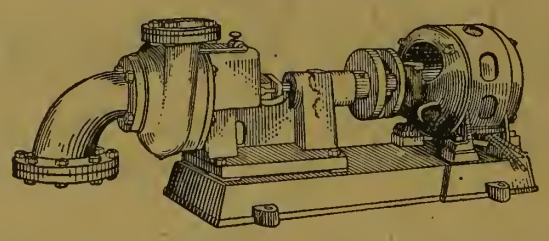

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Skill and experience developed through 20 years have been applied in design and construction.

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If water is to be raised above surface of ground, how high? (Length and size of pipe line).....
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If you have pit, give width..... length.....
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USING GYPSUM

Many years ago the gospel of gypsum was preached so effectively that its use extended into all parts of the United States. This use was not always found as advantageous as some advertising gave reason to believe it should be, this doubtless because the user failed to inform himself as to his soil conditions and the need for gypsum in his particular case. Its use has decreased though the real advantages to be secured from it are still great.

Today gypsum is coming back, for its friends are not advertising it now as a complete fertilizer, or any fertilizer in itself, though it is known to contain sfficient sulphur and calcium to make it of real value to some plants on certain soil.

In the matter of using it on cover crops it is today recommended that where applied to vetch, clover, beans or peas the sulphur aids in the legume growth, and the legume growth turned under supplies nitrogen. A very common method today is to make application of ground rock phosphate and gypsum, this as a substitute for acid phosphate.

But perhaps the best of all uses for gypsum is that of an absorbent in stables or where there is possible waste of ammonia from manure. By using in this way the wonderful absorbing power of the plaster proves beneficial as well as the later application to the land. Again, as a corrector of black alkali conditions it has great advantage. We believe it was Ben Franklin who made the first effort to prove the value of gypsum by applying to certain sections and in certain designs on the field. It is now recommended that it be tried in alfalfa field or on blue grass lawn at the rate of, say, 500 pounds per acre. The best time for applying is probably during the early spring months.

IT SERVES THEM RIGHT

By G. W. Morrison

Many automobile drivers overwork the so-called "self-starter" by continually and unnecessarily using it, sometimes for several minutes. They might as well shout in a loud voice "I don't know anything about an automobile, but I'm going to make this —— engine start if I have to run this 'starter' all day."

Little do they realize that their battery is but a storage compartment holding only six volts of electric current and that the effort necessary to drive the dynamo, which rotates the fly-wheel and crank-shaft, operates the pistons for the suction of gas into the cylinders, and then compresses it, uses up just as much energy as if the engine were cranked by hand.

It would be exhausting to a person cranking by hand, so also is it exhausting to the storage battery. In consequence the six volts of electric current stored in the battery, which alone operates the "starter," rapidly drops to three volts, or less, and this very often is not enough to produce a spark if ignition current is supplied from the battery to fire the gas charge and make the engine "go".

It is all wrong to use the starter in such a way—yet this foolish thing is done every day by ignorant automobile drivers. Because of this nuisance the battery runs down, the plates buckle, and unending trouble, delay and expense follow. One cannot get more out of a battery than is put into it—nor as much.

AMERICAN FEDERATION

Continued from Page 747.

work and unpaid labor of women and children. We insist that these are legitimate factors in cost of food productions and must be so recognized by the commercial interests and general public.

We assert the farmer is entitled to a just profit on cost of production on all products, with these items properly accounted for, with due consideration to the hazardous risks he encounters and with a wage allowance for his own labor and ability commensurate with that received in other occupations.

We express our appreciation of the act of congress in repealing the so-called daylight saving law.

We believe Armistice Day should be made a national and international holiday, and request proper national and international authorities to so act.

We suggest that since Thanksgiving is not an anniversary of the event commemorated and since the date generally observed is so near Armistice Day, that national and state governments legally fix Thanksgiving Day coincident with Armistice Day.

We are unqualifiedly in sympathy with the government's determination to suppress radicalism, and we lend our full support to all efforts to rid this country of Bolshevism and all other anarchistic tendencies.

We especially deplore the outrage committed at Centralia, Washington, and we trust that our government has already taken firm steps to punish the perpetrators of this crime and to prevent any occurrence of like outrage on our flag and our citizens in the future.

The executive committee of the California Tractor and Implement Association has made report to members in effect endorsing a report issued by the demonstration committee appointed some time ago. But it suggests that the work laid out is on too ambitious a scale for a committee and recommends the employing of George Collins to conduct the series of demonstrations. The committee asks that if the plan is endorsed a fund be raised for the purpose of maintaining a San Francisco office. In lieu of that expense, if it is not desired, the committee asks each member to volunteer services as a member of a managing committee. The plan of the executive committees was accepted in the meeting of the association held on November 15. Further details will be worked out at another meeting of the entire membership, to be held at the Palace Hotel, December 27.

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(1919 Crop)

Alfalfa Seeds

Grown on Certified Fields

Unexcelled for Germination, Purity, Color and Productiveness

VARIETIES:

Chilean (Common) Smooth Peruvian
Hairy Peruvian

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It will be to your interest to ask for our prices and samples before placing your order elsewhere

E. F. SANGUINETTI - Yuma, Arizona
"THE HOME OF THE HAIRY PERUVIAN"

FOUR CENTS OUT OF SIXTY

Continued from Page 749.

casions when patrons pay cash and carry home. The grocer is lucky if he nets four per cent profit after all expenses are paid."

"Just one more question," said Jones. "How about the expense of this association? Isn't it just one more expense between producer and consumer? What does this cost and who pays it?"

"It came out of your dime," said Hamilton. "In 1919 the business of 450 growers, producing about half the pears of California, was handled at an average cost, not of 20 per cent, not of ten per cent, nor of five per cent, but the almost microscopic and infinitesimally small charge of two-thirds of one per cent on the growers' whole output. Canners used to have scores of buyers in the field at an expense of $1.50 to $2.50 a ton for the fruit purchased. This needless expense is practically eliminated. One man, the manager of the association, does all the selling at minimum expense. And, furthermore, out of the association charge to growers of 90 cents a ton on the cannery pears there is provision for inspection, shipment, billing, collection and remitting, the grower, and including also adequate financial insurance. This is credit indemnity insurance. Should a cannery fail to pay the association the American Credit Indemnity Company pays, just like fire insurance."

"You astonish me," said Jones. "How do you get by so cheap?"

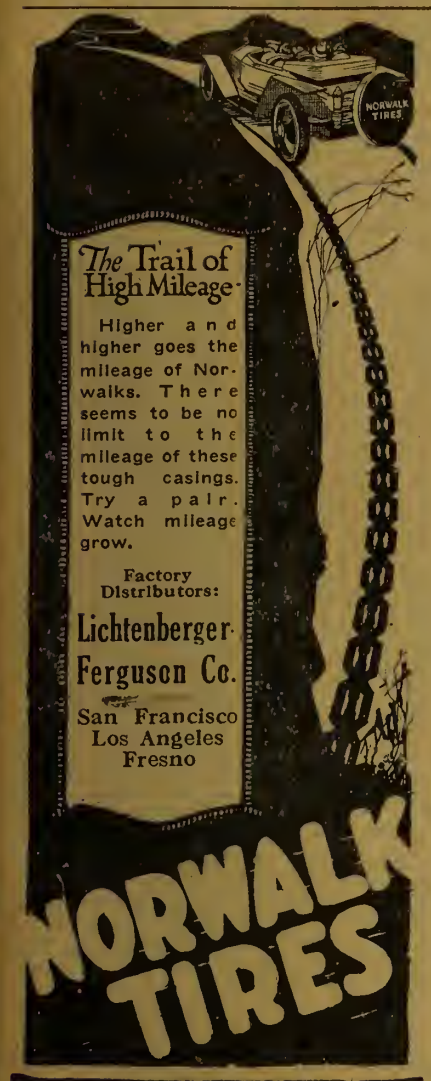
"Because this is modern scientific cooperative marketing. We have had the assistance in organizing of a man who is one of California's most successful merchants, a man who has studied marketing the world over, a man who has done more to encourage food production and to stimulate California agriculture than all others put together—State Market Commissioner Col. Weinstock."

"But don't associations stifle competition?"

"On the contrary they encourage competition of a new kind, constructive, not destructive. Speculation is lessened or eliminated. The grower encouraged, bends every energy in competing with his neighbors for better quality and increased production. New field and orchard lands are cleared and planted. You consumers want more to eat. Better methods mean better crops. Better spraying and cultivating mean better quality. Maximum production means reasonable prices. This association has directors meetings monthly. In winter and spring these meetings are held in the different fruit districts. Growers attend. Last week 69 growers of Santa Rosa met our directors from other sections and a day was spent in planning with the assistance of scientific experts, better cultivation and spraying methods. This means increased production of better fruit for you, Mr. Consumer. In a few years California, instead of 100,000 tons of pears, will produce 300,000 tons. Does that sound good to you? Have we hampered canning and drying by association prices? No. This season the greatest pack of pears on record, over 30,000 tons, was canned. Twice the usual tonnage was dried. Practically none went to waste. The smallest canner can buy his little supply, perhaps only 40 tons, at the same price and of the same quality as the buyer who buys 5,000 tons. Does this encourage him to put up a full pack? I guess yes. One canner, who had ordered 400 tons before we named a price, upon being notified of the price on June 2, came to the office the next day. 'Increase my order to 900 tons; your price is reasonable, and we are going to strain every effort to put up a larger pack than ever before. We marketed this year $1,100,000 of pears without the loss of one cent in bad accounts. Canners have dealt with us squarely and honorably. We have stabilized the Eastern markets for fresh pears by diverting surplus, which formerly used to bring about a regular disastrous slump in August, to driers and canners. We are a group of 450 growers pulling harmoniously together, trying to serve faithfully producer, manufacturer and consumer. We've made a good beginning in our first two years. We can do more and better work in future years. Other growers associations are working along similar lines."

"I'm glad I called," said Jones. "Next time I hear earnest but misguided and ignorant politicians roasting the producer and his marketing associations I'll call his bluff and demand less eloquence but more facts."

And he departed, feeling better.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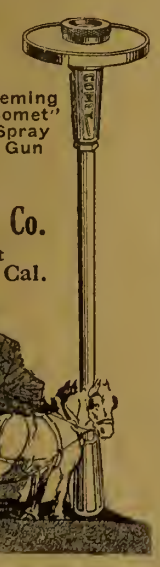
From the "Comet" Spray Gun to the "Victory" 200 Gal. power outfit, Deming Sprayers spell "Simplified Spraying." Own a Deming "Comet" Spray Gun and get the benefit of every time-saving, bother-dodging device possessing practical Spraying convenience.

The new Deming 1920 Catalog, of 40 pages of 25 hand and power Spraying outfits, free on request.



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The "Victory" 150 and 200 Gal. Sizes.

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DEPARTMENT B

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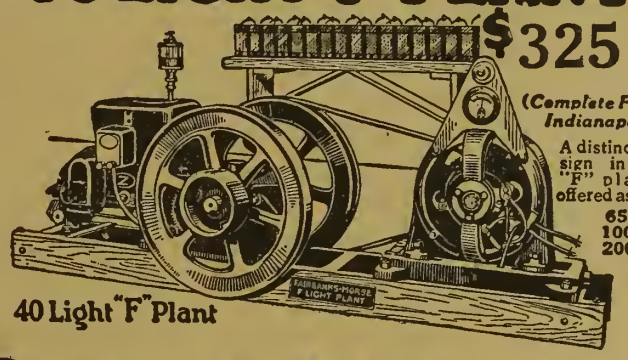

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The best spray you can get for toning up your trees and stimulating your coming crop is Universal Brand Crude Oil Emulsion.

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"It Clears the Land"

"Bill sold me this place cheap—he couldn't make it pay. Labor was scarce and the job of clearing out this old orchard without five men to help looked too big for him.

"He didn't know what a cinch it would be to blast the old trees out with dynamite. Looks like a two years' job by the old methods but no more cutting and stump grubbing for me!

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Better send for this book—you can get it for the asking. It'll help you to improve both your farm and your bank account. Sign the coupon and mail it *today!*

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The Cultivator Costs Only $1.00 Per Year

This Month in the Ornamental Garden

Southern California

By Ernest Braunton

THE "stern December" of other lands does not apply to California for in a normal season the rains have wakened the whole country into life and action and as Christmas approaches both garden and the wild hillside are bountifully clothed with floral beauty. December is the month wherein the autumn planted flowers bloom and seeds, bulbs and plants for spring blossoms are planted.

It is therefore a time of transformation. Just as we are with the year on the closing day—"off with the old, on with the new"—so is it in gardening. As the flowers are picked or fade with age, the plants should be pulled up and burned or composted, the soil enriched and thoroughly worked over and allowed to lie in a rough state for at least a few days so that sun and wind and rain may have a chance to aerate it for soil must breathe in order to stay "live" and be purified. Beds that are not to be planted until spring may also be now prepared and allowed to lie in a rough state until needed for crops.

Bulbs

This is the time for bulb planting and bulb harvesting, for dahlias and others that have run their season's course should be taken up and stored in a dry cool place until needed. Little care need be given, yet if you wish to keep them in splendid condition put them in boxes and cover with fine damp sand. The finer the sand the more slowly will it dry out and the more it excludes the air. As the sand dries the bulbs cure slowly, reserving all their vitality. Allow them to remain in the dry sand, without disturbance, until planting season. If your storage place is dry enough, dahlia bulbs may be held over for fall planting without reduction of vitality.

December is the last month in which you should plant Dutch or Holland bulbs. Later plantings seldom bring as good results. Put in anemone, cyclamen, daffodil, freesia, gladiolus (dwarf), hyacinth, ixia, iris (Spanish), lily, Montbretia, narcissus, ranunculus, and sparaxis. If you wish good spring blooms put these bulbs in at once, in well stirred soil, and if possible put a manure mulch on top. Water through this and do not cultivate.

Seeds

If you would have perfectly glorious sweet peas sow the seeds in the winter season, for peas are a cool weather crop and will not produce good results except the roots are kept cool. It matters little how hot the air if only the soil is cool and moist and in a finely pulverized condition. Growers of fancy sweet peas trench three feet deep in their preparation of the soil.

If you have never tried a bed or garden of native California wild flowers you should have one and sow the seeds at once. They are a magnificent lot, those grown from a 25 cent pacakge of mixed seeds. The writer has grown a patch 50 feet square from an ounce of seeds and had 22 varieties in bloom. If you will do nothing more in this line than sow California poppies in a variety of colors you will still have a flower garden that will be a joy in blossom time. Other seeds to plant now are: Alyssum, calendula, candytuft, calliopsis, forget-me-not, mignonette, nemophila (baby blue eyes), poppies, pansy, salpiglossis, snapdragon, stock, and a host of others. As a rule people are too timid in sowing seeds. Nearly all common annuals will endure a California winter.

Planting

Roses of all garden flowers are the most popular so that everyone will doubtless plant some new ones this season, for new sorts of great merit originate each year. Now is the time to plant them, and get bare rooted plants, for these are better than those in pots, cans, boxes, or sacks. Planted now they will fairly jump into life if the grower had properly dried them off before digging.

Pansies are lots of trouble but then they are such dear little things. Like babies, they repay one for all the care lavished upon them. Pansies need a rich, free soil that is as well mixed and as well pulverized as it can be made. The roots are fine as silk floss and must be kept cool and moist. Therefore a carefully placed fine mulch after planting is the proper soil finish. All hardy plants of whatsoever sorts may be put out in December, and especially is this true of all plants deciduous. If you are short of garden space, take up and store clumps of caladiums, cannas, cyperus, papyrus, chrysanthemums, etc. You will not need the 'mums for some time but do not allow them to get dry.

Northern California

By Albert R. Gould

THIS is the month when all bulbs should be in the ground as the best results are only obtained by allowing them to become well established, and after December it will really be too late. Bulbs like the freesias and narcissus planted much earlier or which have perhaps been left in the ground from previous seasons undisturbed will be showing well above the ground now and the application of a little dried blood or some such fertilizer lightly worked in will not only increase the growth considerably but insure finer flowers, and now is the time to do this; if you put it off longer you are liable to forget, furthermore it will be much more helpful at this stage.

There will be some cleaning up to do among the roses this month. All dead wood must be cut out and weak growths removed, and pruning may also be undertaken. Climbing roses should be tied in to the trellis or arch as the rough winds are very liable to damage the season's growth and this will apply generally to any climbing plant which does not entwine itself or cling. And here we might mention that the best subjects for clinging are English Ivy, Ficus repens and Ampelopsis Veitchii, or Virginia Creeper, and other species of this genera. These last named need little care and are good subjects to plant on that account, but such others as wistarias, jasminum, clematis, solanums, honeysuckle and bignonias need wire or wood trellis to assist in their support. It will be a good plan to heavily mulch the rose trees with decayed leaves or manure. Other choice shrubs may also be so treated, and it will also be advisable to spray roses subject to mildew and rust with sulphur solution.

Some Desirable Trees and Shrubs

Now that the season has arrived for active planning and planting we turn to lists of trees and shrubs offered by our nurserymen, and although these seem endless and the names oftimes beyond our reach, many should be in our gardens, when they would then cease to be strangers. Among the most beautiful of the flowering group we must give first place to the pyrus or crab apples. In early spring these are a picture in full flower and in the fall. There are a number of these, the best being P. baccata, P. coronaria, semi-double, P. floribunda, P. sikkimensis and P. spectabilis, all of tree form and of value planted as avenue trees or single specimens. In this group is the American mountain ash, P. americana, which has beautiful red berries in the fall. Next in consideration comes the prunus family, which

of course includes almonds, peaches, plums and cherries and even the evergreen laurel, but the flowering or ornamental types of the prunus family are valuable indeed and effective if used as avenue trees, as specimens or grouped. The following are all worthy of a place: Prunus cerasifera, the famous Myrobalan plum P. C. pessardei, purple leaved used largely in landscape work; P. Mahaleb, the St. Lucie cherry, and P. M. pendula, its weeping form; P. persica, the peach, of which there are several double and semi-double varieties in rose, white and red. Among the Japanese cherries P. J. H. Veitch and P. Watereri are the best.

Among the most fragrant of our shrubs of the flowering types are the mock oranges, or Philadelphus, and these should be planted in well manured soil. The best varieties are P. coronarius, P. microphyllus, dwarf variety; P. Lemoinei erectus, P. maculatus and P. Virginal. The spiraeas are very popular as flowering shrubs, and there are numerous varieties in cultivation. The best are S. arguta, growing five feet high; S. prunifolia, S. Veitchii, S. Wilsoni, S. Van Houttei, S. japonica and S. Menziesii. Among other useful flowering plants or shrubs are the brooms, ericas, crataegus, tamarix, buddleias, ceanothus, abelia and escallonias, all these are useful and provide a long season of flowers. They may be grouped for effect. Next month we hope to deal with conifers and other useful subjects.

A Climbing Hydrangea

This type of hydrangea, known as H. petiolaris, grows to a height of 20 feet or more and clings like the ivy. It may be used for covering tree stumps. It has white flowers.

Subjects for Spring Flowering

Plant out as soon as possible in well prepared soil the following: pansies, violas, dianthus, forget-me-nots, primroses, double daisy, aubretia, alyssum saxatile, wallflower and violet. All these will provide a wealth of bloom and with the bulbs will make an effective display. For best results use care in preparation of the beds and borders and dig the manure well in before planting. Keep the soil moist and cultivate as often as possible between the plants.

Sweet Peas

Those who were wise and prepared some few months ago by sowing the now popular winter or Christmas flowering sweet peas will have some to cut this month and next. It is now also time to prepare the ground by deep trenching and manuring for the summer flowering types, a selection of which we will make next month.

This Month in the Vegetable Garden

Southern California

By D. F. Reichard

UPON the rains this month depends the amount of irrigating necessary to get our ground in shape for early plantings. All land that is not to be immediately planted should be covered with a generous dressing of barnyard manure. If the soil is of a clay nature the addition of lime, sand, ashes or gypsum will be of great advantage, in fact, necessary for good results. After the fertilizers are applied a good soaking is required and the ground should be turned over to let the manure and roughage decay by allowing it to be covered for a month or so. A week or so before the ground is to be planted wet it and thoroughly work and pulverize it in preparation for receiving the seeds or plants. If the land is not to be planted cultivate or harrow it every few weeks to keep a good mulch at the surface and to kill any weeds that may start.

Plantings of the hardier vegetables may be made during December. Although they will grow rather slowly at first they will be established so that with the first warm days of late January and February they will make quick growth and mature quite a little ahead of stuff planted in early spring. The varieties recommended for this time are Egyptian beets, Oxheart carrots, Winningstadt cabbage, cauliflower, Swiss chard, kale, endive, heading lettuce, radishes, winter spinach, collards, mustard and turnips. The plants of cabbage and cauliflower, roots of asparagus, horseradish and rhubarb do well set out now.

In warm protected locations peas and potatoes should be planted, using early maturing varieties.

Start in hot beds or cold frames early tomatoes, peppers and egg plants.

Prune all deciduous trees, shrubs, berry bushes and vines and spray with Bordeaux mixture or lime-sulphur solution all plants that show any tendency to fungous diseases such as curly leaf or mildew. Burn all trimmings from plants that have been affected with fungi or insects.

A little commercial fertilizer applied to growing crops helps during these cool days. Rapid growth makes for succulent products.

Northern California

By Albert R. Gould

INCREASED production is just as important now as it was some time ago, and while we are unable to crop so extensively during the winter as in the seasons following, yet there is little chance to be idle and we have to plan ahead as well as look back on any mistakes we may have made as by these we may learn something and profit accordingly. The long winter evenings enable us to check up our crop records, our expenditures and study results, and with the aid of the Cultivator and seed catalogs we can get ready for another season. Soil preparation will still be the principal feature.

Onions

If the ground has been well prepared as we advised last month by deep trenching and liberal manuring the main crop of onions may be sown. The following are generally well known and are good keepers: Australian Brown, Ailsa Craig, Prizetaker and Yellow Flat Danvers. Sow the seed in rows 12 to 18 inches apart

Continued on Page 775.

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Has TELESCOPE with magnifying glasses which enable you to see cross on Target quarter of a mile. Pays for itself on the first job of

IRRIGATING, DITCHING, TILE DRAINING, TERRACING, etc.

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WAGNER'S IMPROVED
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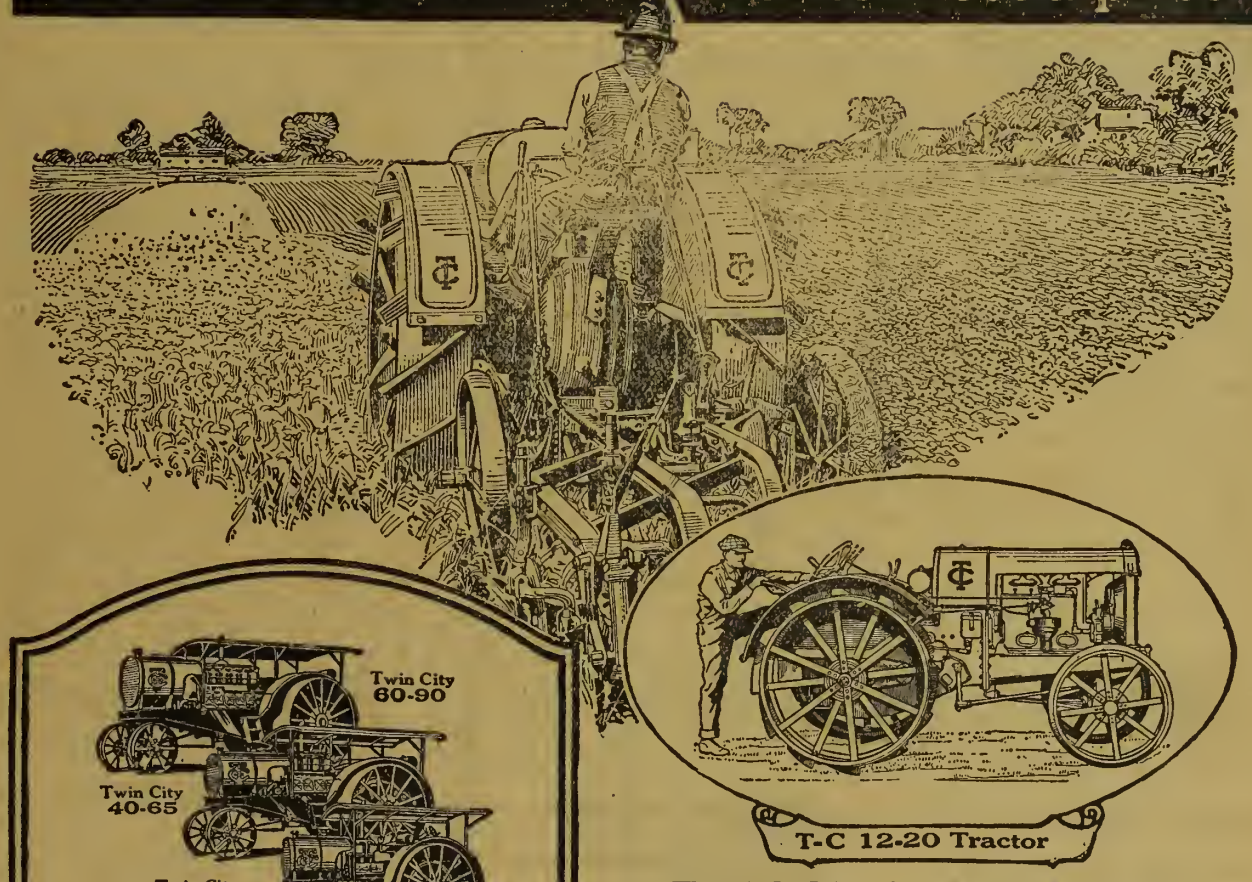

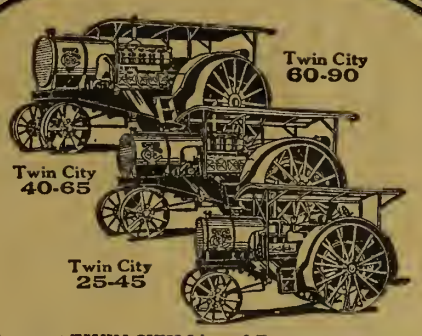

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The New All-Steel TWIN CITY Thresher has behind its 22-inch cylinder 64 square feet of separating surface. Write us for complete details.

T-C 12-20 Tractor

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It gives full instructions on treating cow diseases—should be in every farm library.

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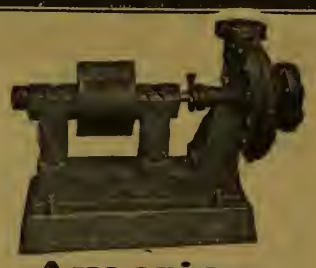

American Centrifugal Pumps

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The Search for Sires

REALLY the greatest problem that the breeder has to solve is the selection of a herd sire for upon the successful solution of this problem depends to a large degree the success or failure of one's breeding operations. A study of the methods of the most successful breeders convinces that their success is closely related to the use of one or more outstanding sires.

Great sires are rather few and because of that fact any breeder, young or old, is justified in giving the matter the closest attention. Few men have the ability to select, when young, a sire that will justify their judgment. Many of the best individuals and many with pedigrees, that on paper seem to be certainties, fail to make good as sires.

Remembering that the test of a sire lies in his ability to work improvement in the herd by raising the standard of the young things from year to year, many men engaged in the business of producing pure bred livestock will do well to discard the idea that a male animal is a sire. True, he has the ability to reproduce, but a real sire must do more.

The beginner or established breeder should be constantly on the lookout for an opportunity to secure a proven sire. Such opportunities do not come often, but occasionally the owner of a successful sire is compelled to dispose of him for the reason that he intends to keep a large number of his daughters in the herd, then if investigation discloses the fact that the sire in question has been producing a quality of stuff superior to what is being produced in the herd of the one needing a sire, the opportunity should be taken advantage of.

But unfortunately there seems to be a marked discrimination against purchasing an animal with a bit of age, regardless of his demonstrated ability. Many times the writer has attended sales where a tried sire was listed and where there were breeders who knew that the kind of stuff he sired was superior to their own productions, yet they would stand by and see such a sire sell for a song. The common excuse offered is that they do not care to take the risk of investing in an animal that is along in years. As a matter of fact one crop of calves or pigs by such a sire would be worth more than several crops by an average sire.

There is another common fallacy followed by many men when in search of a herd sire, and that is the assumption that because an animal happens to be sired by a popular bull or boar and the price quoted is high that he must be good. Some men once having selected the head of their herd on the above basis become blind to his faults and either through ignorance or prejudice refuse to admit that they have made a mistake and they keep on using their "pet" year after year, wondering all the while why they do not attract greater patronage.

Another class of breeders (?) are the men who do not give their sires time to prove their ability. Some of the greatest sires of all breeds have been lost because their owner disposed of them before their merit became known.

Many other herds have suffered because the breeder who happened to be fortunate in owning a sire of merit assumed that as long as he had picked one or two successful sires he could turn the trick any time and because of such confidence sold his known sire before he had located another of equal or superior merit, only to find that the problem was not so easy.

This business of livestock improvement is not an open book, and because of the importance attached to a sire, a sound policy to follow is to maintain a constant search for a sire that will work improvement and, once having succeeded, retain his services until his merit is established and a suitable successor located.

Certainly do not reckon merit on a basis of cost of pedigree, but keep an open mind at all times and judge your own productions by the same standard used to measure the herds and flocks of fellow breeders.—R. P. R.

SOUTHERN CALIFORNIA HOLSTEIN FRIESIAN BREEDERS ASSOCIATION

A meeting of the Holstein breeders of Southern California was held in Los Angeles, November 22, 1919, at which time a permanent organization was established with the following officers: President, George M. Brown, Burr Farms, Los Angeles; vice-president, A. J. Stalder, Rosamaines Ranch, Riverside; treasurer, P. H. Krick, Anaheim; secretary, R. A. Condee, George Junior Republic, Chino. The board of directors consists of the above mentioned officers, and the following: James J. Jeffries, Burbank; W. H. Taylor, Santa Anita Rancho, Santa Anita; C. H. Harriman, Los Angeles County Farm, Hondo.

It was planned to hold a number of all day meetings at the prominent Holstein farms throughout the southern part of the state. The first of these is to be held on December 11, 1919, from 9 a. m. until 5 p. m., at Stalder Bros. Rosamaines Ranch, Riverside. All interested in pure bred Holsteins, and all dairymen interested in increased production for their herds, and their families, are cordially invited to attend this meeting. All attending should bring lunch. The association will have a number of experts to discuss the many important features of modern dairying.

This association is formed purely as an educational feature for Southern California Holstein activities. The board of directors is anxious to see a large number of both Holstein breeders and dairymen throughout Southern California attend these mectings.

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3 BULLS	No. 1 born Mar. 1, 1919. Sire, Our Noble Mayair Ilero.	3 BULLS
No. 2 born Oct. 1, 1919. Sire our Kathie's Eminent.	All from high record cows in Arden herd	No. 3 born 1[illegible] 20, 1918., [illegible] same as No.

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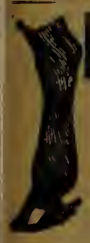
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Some of the finest
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In the West are at
Hollow-Hill Farm
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Only Bull Calves For Sale

Giant Bob Will Sell
The Grand Champion
Poland China
boar of 1919, 45 bred sows and gilts are to be sold in my complete dispersion sale in January. Every animal in sale is big type, personally selected by me from some of the best eastern herds.
Chas. Gatewood, Fresno, Cal.

Fine Calves
Without milk after the fourth week, is now practical. AN-FO Calf Meal in water nourishes calves properly. No scours or pot bellies. Raises Sturdy Calves.
CALF AN-FO BRAND MEAL
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Oakland, Supply

Every Shorthorn Breeder

or prospective breeder — in America would be inspired to witness the display of Shorthorn cattle at the International Show and Sale at Chicago the first week in December. The Shorthorn sale occurs Thursday, December 4, under the auspices of the
American Shorthorn Breeders Association
13 Dexter Park Ave., Chicago, Ill.
Ask for "The Shorthorn in America."

Future meetings are to be held at the James J. Jeffries Farm, Burbank; Santa Anita Rancho, Santa Anita; Burr Farms, Los Angeles, and the Los Angeles County Farm, Hondo.

THE WM. BERNSTEIN SALE OF POLAND CHINAS

Wm. Bernstein held his dispersion sale of Poland China swine in Hanford, Saturday, November 29. For some time Wm. Bernstein had been gathering together a great band of brood sows and gilts with the view of holding in the spring what he believed would be one of the greatest offerings ever made in the state. Circumstances over which he had no control forced him to make his sale at this time, consequently practically everything was sold open.

He has every reason to feel proud of his offering and the liberal support it received.

Thirty-two sows and gilts sold for the high average of $180.30, while the young pigs and gilts sold trom $30 to $90. Eight boars from five to 12 months of age sold for an average of nearly $80. The top of the sale was the March gilt Defender's Maid by Buster Defender, going to W. L. Haag & Son for $345, while two of her litter mates brought $335 and $280, going to M. Bassett and H. D. McCune. W. E. Martin, Visalia, paid $325 for Lady Orphan and A. Buckland and Son, Fresno, paid the same for Sunny Lass.

Poland China breeders from various parts of the state were present and gave the sale liberal support. Among these were R. F. Guerin, Visalia; R. E. Stanton, Reedley; W. C. Bryson, Lemoore; C. W. Gates, Corcoran; E. Y. Foley, Fresno; Z. M. Dickey, Dinuba; Les McCracken, Ripon, and M. Lovelace, Lemoore. Following is detailed report of the sale for animals selling for $100 or more:

1. R. E. Stanton, Reedley, $255.
2. W. C. Bryson, Lemoore, $200.
3. R. F. Guerin, Visalia, $225.
4. W. E. Martin, Visalia. $325.
5. R. G. Hamblin, Kingsburg, $165.
6. C. W. Gates, Corcoran, $285.
7. (Boar) J. L. Lane, Lemoore, $175.
10. E. Y. Foley, Fresno, $145.
11. H. D. McCune, Lemoore, $140.
12. Z. M. Dickey, Dinuba, $115.
13. E. Y. Foley, $100.
14. M. Lovelace, Lemoore, $115.
15. M. Lovelace, $275.
16. E. Y. Foley, $135.
17. C. W. Gates, $170.
18. R. L. Waltz, Hanford, $100.
21. Z. M. Dickey, $225.
22. J. F. Van Cleef, Riverdale, $105.
23. A. Milnes, Riverside, $105.
27. A. Buckland & Son, Fresno, $325.
28. Les McCracken, Ripon, $150.
31. M. Bassett, Hanford, $335.
32. H. D. McCune. $280.
33. W. L. Haag & Son, Hanford, $345.
34. W. C. Bryson, $150.
36. (Boar pig) Haag & Son, $130.
36. W. D. Trewhitt, Hanford, $170.
37. M. Lovelace, $135.
38. F. Johnson, Hardwick, $100.
39. C. W. Gates, $130.
40. W. C. Bryson, $150.
43. J. A. Crawshaw, Hanford, $105.
44. J. H. Vernon, Lemoore, $120.
51. E. Y. Foley, $120.

FOOD VALUE OF MILK

Some years ago Hoards Dairyman computed comparative food values of milk on a basis of 11 cents per quart. There has been little delivered in any of the large cities for some little time at 11 cents, but for comparative purposes that price will answer. Figuring on that basis it is found that from its actual food value veal should be purchased at eight or nine cents per pound, mutton at 20, pork tenderloin 14, fresh ham 24, bologna sausage 18, chicken broilers 5, old fowl 12, salt codfish 5, mackerel 6, clams 5 and oysters 4. Truly milk has some sustaining value as well as a high food value, according to the discoveries of Dr. McCullum.

Peppermint for oil is produced in Michigan and Indiana. The crop of 1919 has the estimate of 300,000 pounds of oil from 10,000 acres and marks another step in the continuous decline from 600,000 pounds from 18,000 acres in 1914. The average yield is about 30 pounds of oil per acre.

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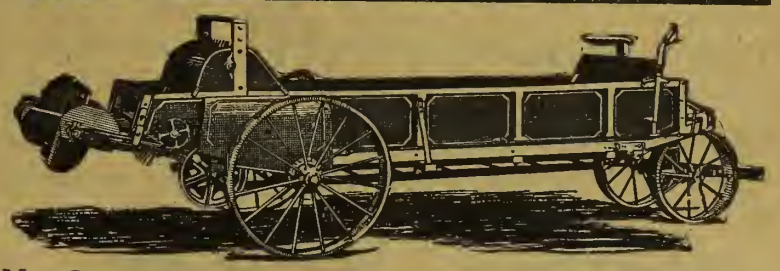
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were all around good winners at both the Los Angeles Livestock Show and the California International Livestock Exposition, San Francisco. I can furnish best of blood and best of individuality from the big Middle West. Write me.
Roy E. Fisher Route 4, Lincoln, Neb.

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GROW MELILOTUS ALBA
on Alkaline or Any Poor Soil
AGGELER & MUSSER SEED CO.
620 South Spring Street LOS ANGELES, CAL.
Write for our Bulletin on Grain

McCUNE'S BIG TYPE POLANDS

have stood the rigid test of time and well deserve the commendation they have received from some of the leading breeders of Poland China swine

SIZE with QUALITY is found in this herd

King's Massive Orange—McCune's Buster, by Giant Buster and a son of Surprise Prospect are herd boars that will leave a lasting impression on the breed in this state.

H. D. McCUNE LEMOORE, CAL.

Just remember I will sell in Hanford, January 24th, 1920, Poland Chinas bred right, grown out right and the right type.

TAKE NOTICE! THE HIGHEST PRICE paid for a car load of fat hogs at the California International Livestock Show came from the

BASSETT

Herd of Advance Type Poland Chinas

Many firsts, seconds, senior champion sow and GRAND CHAMPION SOW were won in the open classes, proving without a single doubt we are breeding the kind the packer wants and the farmer should raise. Animals of all ages, high class young boars, bred sows and gilts for sale at reasonable prices.

M. Bassett & Son Hanford, Cal.

Lendorris Ranch

Good boars will not make a good herd without good sows. A visit to our ranch will prove to you that the matrons mantained have no superiors on the coast. Young, big type, Poland Chinas from good mothers by such boars as Lendorris Liberty Bond, Young Jumbo and Liberator. For sale at reasonable prices.

W. L. Haag & Son Hanford, Cal.

Come and See Them

Our Big Type Poland-Chinas are the real kind of hogs. If you can't come write for what you want. We have them if you want the prolific, quick growing, big type kind.

Poland China Ranch H. B. Peake Mgr. **San Bernardino, Calif.**

Blood Will Tell

in the show ring, in the feed lot or on the butcher's block. The Poland Chinas bred by me fulfill all these requirements. They make money for me and they will for you. My prices for good breeding animals are always reasonable.

Eugene Miner Lodi, Cal.

Come to Paradise

and see my big type Poland Chinas; grandsons and daughters of Caldwell's Big Bob. One of his best sons heads my herd. Also the home of Whiz-Bang. Get my prices and breeding and satisfy yourself that I offer the kind you want.

J. H. Cook Paradise, Cal.

Golden West King

was such a superior type of a big Poland China boar that as a junior boar pig he was made GRAND CHAMPION BOAR at the California International Livestock Show. His litter mate, second to him in class was regarded by the judge as practically his equal. My winnings at the State Fair, Stockton, and at San Francisco, prove my claims for superior Poland Chinas. Eastern judges and breeders pronounce them the equal of any seen at the big eastern shows. I have these kind for sale at reasonable prices.

J. F. LEHMAN LODI, CAL.

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Hickory Cured Hams are Best

THAT'S why we use **Seasoned Hickory Wood** in making **WRIGHT'S CONDENSED SMOKE.** If you want some good old fashioned **Hickory Flavored Hams and Bacon** use **WRIGHT'S HAM PICKLE and WRIGHT'S CONDENSED SMOKE.** The Ham Pickle is a scientifically prepared sugar cure. A dollar jar and 27 pounds of salt prepares a barrel of meat for smoking. A Dollar bottle of **WRIGHT'S SMOKE,** thirty minutes and a small brush will thoroughly smoke your meat and give it a **Delicious Flavor.** The "WRIGHT" Way of curing meat is easier, quicker, cheaper and gives better results. No fooling with fires. No danger of meat spoiling. No drying out or shrinkage.

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Feed Prices and the Dairyman

By F. W. Woll

THE question has been raised how much a dairyman can afford to pay for alfalfa hay and continue in the dairy business. There are many factors that have a bearing on this question, and a full discussion of them would take up considerable space; in fact, it involves the entire subject of dairy economics. A brief mention of the main factors may, however, suffice and will be of interest to many subscribers.

The returns that a dairyman secures from his herd depend more on the kind of cows he has than on any other single factor. He may have cows that will average less than half a pound of butterfat a day or such as produce one or one and one-half pounds, or more, per day for the entire lactation period. Cows do not begin to differ as much in the amount of feed they eat as in their production, since the latter is determined

Lily of Willowmoor

Ayrshire cow hred by J. W. Clise, Redmond, Washington, which produced in 1917 22,596 pounds milk and 955.56 pounds butter fat. Winner at Chicago International.

by the feed eaten over and above maintenance requirements for repair of body tissues and the continued exercise of vital functions. About one-half of the feed eaten by dairy cows goes to provide energy for body maintenance; the other half is used for the elaboration of milk and stands in direct proportion to the amount of the milk secretion. An average dairy cow will eat about 25 to 30 pounds of alfalfa hay per day, depending on the quality of the hay and its water content; 25 pounds is a good average figure, and she will produce on this feed about three-fourths of a pound of butterfat. In other words, it takes approximately 33 pounds of alfalfa hay of average quality to make a pound of butterfat in the case of such cows, and a ton of alfalfa will therefore produce somewhere around 60 pounds of butterfat. Hence, if this is worth 75 cents a pound, a ton of hay will bring an income of $45 as marketed through the cow. Under ordinary California conditions the feed is the largest item in the cost of milk production, amounting to at least 50 per cent on the average. Other items, in the order of their importance, are: labor; depreciation of cows, bulls and equipment; taxes, insurance and interest on investment; veterinary services and medicines, etc. Fifty per cent of $45 is $22.50, so that the contention of some dairymen that they cannot make money on their cows by feeding alfalfa hay worth $20 a ton is not correct even if they keep only cows of a medium production, which no man has any business to do if he can help it, least of all when he has to buy his hay. If he raises his own alfalfa, he receives the difference between the cost of production and the market price on the hay by feeding it on the ranch so that even if he is not making much money on his cows he is ahead the profit made on growing the hay.

But an average production of three-fourths of a pound of butter fat per day per cow, or say 200 pounds for the year, is unsatisfactory under modern conditions of dairying; it can be raised by gradually eliminating the low producing cows in the herd that do not yield any net profit for the feed and care bestowed on them, and by feeding the good cows according to their production, giving each about a pound of grain feed for every five pounds of milk produced, in addition to the hay. Additional grain feeding will cause a direct increase in production of from 12 to 20 per cent in case of good dairy cows fed alfalfa only. It will also cause an increased milk flow during the balance of the lactation period after grain is no longer fed and will put the cows in a good body condition, which is of advantage both as regards the milk production during the following lactation period and the size and thriftiness of the calves dropped.

By eliminating unprofitable cows, by feeding those retained in the herd some grain, and by grading up the herd through the use of a pure bred bull of a family of good producers, the dairy farmer will be able to gradually increase the returns from his herd. If this has been improved so that the cows average a pound of butter fat for each day in the year, they will bring in 75 cents for the amount of hay eaten daily, which will not be far from 30 pounds. With such cows a ton of hay will produce about 67 pounds of butter fat, worth at present prices $50.25; one-half of this, or $25.13, is to be charged to the feed, thus yielding a profit of $5.13 per ton of hay eaten, if this is worth $20 a ton. A dairyman keeping good cows will therefore have no occasion to worry about high feed prices. The latter are accompanied by high prices for milk and butter fat, and if he fails to make money on his cows it is because he has not done all he can to improve the herd. With cow testing associations in operation or being organized in most important dairy sections in the state, it will be an easy matter in the future to find out what the cows actually produce from month to month, and it is the duty of the dairyman, both to himself, his family and his country, to take advantage of the information thus furnished and go on improving the herd, as suggested, thus incidentally reducing the cost of producing the milk.

Along the feeding line, a brief circular recently issued by the college of agriculture on "Feeding Dairy Cows in California" should prove helpful. Copies of this circular will be sent free of charge upon request to Director of Experiment Station, Berkeley, California. As a large edition has been published there are plenty of copies to supply all who write for it.

KINGS COUNTY DAIRY EXCURSION

County Agent Wallace Sullivan of Kings writes regarding the recent farm bureau dairy auto excursion. It covered nearly one day and was attended by 125 dairymen. Thirty-four automobiles were in line. Large posters were fastened to the autos showing facts and figures regarding the dairy industry in Kings County. A feature of this trip was a cow judging contest at the Post-Card Ranch, in which 20 dairymen were engaged. Only three succeeded in placing the first cow. Mr. Filcher, manager of the ranch, then announced their records of production. This brought out very vividly the necessity of cow testing in order to determine the best cow.

Dairies visited included those of A. B. Comfort, Geo. A. Smith and Post-Card Ranch. There was luncheon at the Corcoran High School with addresses made by practical dairymen. There were judging contests, all present being urged to take part in this feature of the program.

BUTTER, CHEESE AND ICE CREAM MAKERS MEET

The California Butter, Cheese and Ice Cream Makers Association held its 1919 convention at the university farm, Davis, on November 20.

The butter makers' competitive judging contest was won by A. R. Wickham of the university farm. Mr. George Dondero of the Petaluma Co-operative Creamery won second honors in this contest.

After the judging contest, T. J. Harris of the San Francisco Dairy Produce Exchange called the butter

makers' attention to certain common defects in butter, his contention being that a large amount of butter lacking in color is received on the market at this time of the year. G. E. Frevert of the United States dairy division also addressed the meeting, calling special atention to the value which can be obtained from educational butter judging contests.

At the business session it was agreed to establish a requirement for membership which would eventually result in developing a better spirit among the men in the plant and their managers.

The following officers were elected: President, Thomas C. Moran, Oakdale; vice-president, J. M. Jensen, Hanford; second vice-president, Wm. Dreyer, Sacramento; secretary-treasurer, J. C. Marquardt, Davis.

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holstein Cattle

December 18-19. A. W. Morris & Sons, Woodland.

Shorthorns

December 11. W. C. Short, Sacramento.

Grades

December 4. New England Farms, Ripon.

Berkshire Swine

December 2. Frank B. Anderson, Sacramento.
February 14. J. Francis O'Connor, Santa Rosa.
February 15. F. J. Sandercock, Sacramento.
February 16. Muddux & Son, Sacramento.
February 18. Western Berkshire Congress, Davis.

Duroc-Jerseys

January 14. State Duroc-Jersey Breeders Association consignment sale, Davis.
January 15. Harvey M. Berglund, Dixon.
January 15. California Duroc Association, Davis.
January 17. Hollingshead & Sons, Orland.
January 28, Diamond Bar Ranch, Spadra, Los Angeles County.
January 29, Winsor Ranch, Bonita, sale in Los Angeles.
January 30, Ireland Ranch, Owensmouth, Los Angeles County
February 4. Fresno County Duroc-Jersey Breeders Association, Fresno.

Poland Chinas

January 10. Fred Gatewood, Fresno.
February 10. F. D. Burr, Orland.
January 17. Bassett, Ross and Crawshaw, Hanford.
January 24. H. D. McCune, Hanford.
January (date later). Chas. Gatewood, Fresno.
January 27. Geo. V. Beckman and Sons, Lodi.
January 31. Hale I. Marsh, Modesto.
February 3. Les McCracken, Ripon.
February 6. Tulare Poland China Breeders Association, Tulare.
February 12. San Joaquin Poland China Breeders Association, Lodi.
January 14. Glenn County Poland China Breeders, Orland.
February 21. Merced County Poland China Breeders Association, Merced.
February 21. McSwain, Merced.
February 28. Kings County Poland China Breedrs Association, Hanford.
March 13. Haag & Bernstein, Hanford.

J. Francis O'Connor, owner of Castleview Ranch, Santa Rosa, has recently purchased from B. M. Nixon, Yountsville, two Guernsey heifers and a young bull. It will be remembered that at the meeting and show of the Western Berkshire Congress held in Davis last February Mr. O'Connor won the Guernsey heifer offered by Mr. Nixon as a prize for the best fat barrow. This heifer has recently dropped a fine heifer calf which will be retained in the herd of Guernseys Mr. O'Connor is gradually building. Just at present Castleview Ranch is busy preparing for its forthcoming Berkshire sale, which will be held in Santa Rosa February 14. The sale will comprise some 25 or 30 bred sows and gilts which are now being bred to the herd boars, Mayfield Rookwood, Castleview Champion, a son of that renowned sire, Lustre's Dominator, and the new boar Achiever. Mr. O'Connor is reserving two fall litters by this boar which will be grown out for the shows next year. He states that he has never had such size for age as in the pigs by Achiever.

F. M. Johnson, Napa, has gathered together what he believes is a herd of Duroc-Jerseys that will rank with any to be found in the West. He personally selected from some of the leading herds of the Central West 20 sows and 25 gilts representing the blood of such noted sires as Pathfinder, Sensation and Great Wonder. At the same time he secured as herd boars a son of Great Sensation, Pathfinder and the boar King Orion Jr. that was made grand champion at the late California International Livestock Show. These sows and most of the gilts will be mated with these boars for spring litters. It is Mr. Johnson's intention to devote the greater part of his time in the future to breeding Duroc-Jersey swine.

In the forthcoming sale of Harvey M. Berglund that will be held in Dixon on January 15 he will offer 35 bred sows and gilts that will represent some of the best blood lines to be found in the breed. These will be bred to his two herd sires, California Orion King and Chief Defender. This will he Mr. Berglund's first offering at public sale, and he has devoted considerable of his time to selecting and developing the animals he will offer.

Les McCracken, Ripon, has recently purchased from J. H. Cook, Paradise, a number of junior yearling Poland China sows and spring gilts. Mr. McCracken has announced a sale at his farm for Fehruary 3, at which time he will offer 50 to 60 bred sows and gilts, most of which will be bred to his great boar Kings Big Bone Leader. Mr. McCracken has been a buyer at most of the recent sales, at which time he selected only such animals as he deemed worthy to represent his herd. He states that only the very tops of his entire herd will go into this sale.

Geo. V. Beckman and sons announce that on January 27 they will hold in Lodi a public sale of bred Poland China sows and gilts. These will be bred to their two boars, Matchless Big Bob and Lakeside Defender. Mr. Beckman states that every an-

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There is only one GENUINE O. M. FRANKLIN Blackleg Aggressin (commonly called Vaccine).

Beware of imitations. You cannot afford to have anyone experiment on your animals.

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The California Cultivator Costs Only $1 Yearly

Will the livestock producer benefit by the proposed Kenyon and Kendrick bills?

Practical men in the industry at a hearing in Washington, say NO

Down in Washington, as you know, they are considering a plan of licensing the packing industry and putting it under the direction of a government official—

A political appointee with the power to experiment as he chooses with this vital business.

* * *

How will your brother stockmen and feeders like that?

Recently a number of them went to Washington to give their opinions. What follows is a fair sample of their testimony:

Robert J. Kleberg, Livestock Producer, Kingsville, Texas, testified that—

"I contend and believe that the producer of livestock who conducts his business properly has nothing whatever to fear from the packers. He needs the packers to prepare his product for the market and to distribute it. Without the aid of the packers, the production of livestock could not exist as an industry. . . . I do not believe that this licensing system and the taking of the stock yards away from the packers and the taking of the refrigerator cars away from them, the ownership away from these men and the management away from them is going to help."

E. M. Ammons, Cattle Grower, Parshall, Colorado, said that—

"I am opposed to these bills. . . The Western Stock Show Association, including all lines of industry there, went on record unanimously and passed a resolution prepared by two producers and one banker not connected with the yards, *against* the principle of licensing this business or establishing or permitting the business to be controlled by these bureaus, giving the power to make rules and regulations having the effect of law."

Dr. J. M. Wilson, General Manager Platte Valley Sheep Co., McKinley, Wyoming, stated that—

"The livestock business and its allied interests are so complicated that unless you get a man who is well informed in business it is very liable to do more damage than good. . . . I see nothing but confusion and uncertainty ahead if the present methods are disrupted and the stock yards put under Federal Control and into the hands of an inexperienced manager."

I. C. Thurmond, Cattleman and Banker, of Oklahoma City, Oklahoma, testified that—

"The people of our state are absolutely—after the experience that we have had with Mr. Burleson and the wires and the railroad control—they are absolutely against it (Federal control of the packing industry). While there might be a few socialists in favor of it, I believe that most of the socialists have gone back on it. All of the people in the state are against governmental control of the railroads or legislation in any way."

Scores of similar statements from the testimony of producers, farmers and feeders all over the country could be quoted if space would permit.

* * *

Do you want the packing industry under an inexperienced political appointee? The interests of the producer and the packer are mutual. If radical legislation should upset and disorganize this high efficiency of the packing industry, the producer would be hit as hard as the packer.

There is no question but that the cost of conducting the packing business will be materially increased by such legislation. The packer's profit—a fraction of a cent a pound from all sources—could not take care of such increases, which would necessarily be reflected in lower prices to producers or higher prices to retailers.

Swift & Company will be glad to mail a summary of the testimony of the livestock producers at the hearing in Washington. Write for a copy. Address Swift & Company, Union Stock Yards, Chicago

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16

It Excels in Orchard Work

ORCHARD work demonstrates the unusual adaptability of the Bates Steel Mule.

Fact is, that California fruit growers pronounce it the ideal tractor for orchard cultivation.

Its design is low and narrow, allowing the tillage of the soil close up to the trees without a chance of injury to the low hung branches, and the short turning radius of only 16 feet enables a thorough cultivation of the ground.

The Bates Steel Mule with its Crawler type of traction will not pack the ground as its ground pressure is but 3½ pounds to the square inch.

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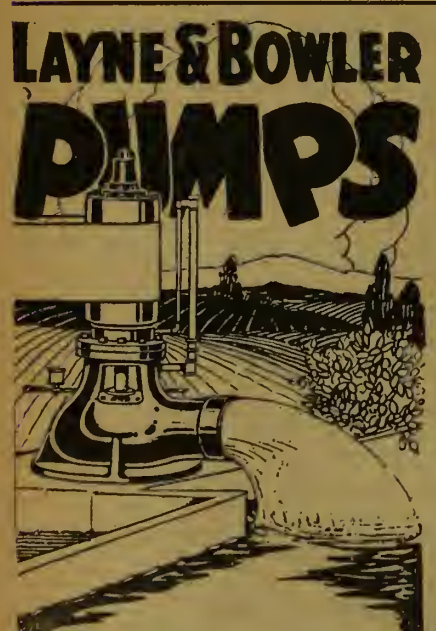

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Write for the book today. Read how Kirstin scientific leverage enables ONE MAN ALONE to pull big, little, green, rotten, low cut, tap rooted stumps—also trees, hedges or brush. No horses or extra help needed. No digging, chopping or other expense. The Kirstin is lowest in first cost—lowest in operating cost. Soon pays its cost in Bigger Crops, and Increased Land Value. It adds thousands of dollars to profits each year. Write for the New FREE Book Now!

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The famous Kirstin is made of finest steel. Guaranteed 3 years against breakage—flaw-or-no-flaw. It weighs less—Cost less. Yet has greater speed, power, strength, and lasts longer. A few pounds on handle exerts tons on stump. Single, double, triple power. Several speeds. Low speed loosens stump. High yanks it out quick. Patented quick take-up for slack cable. Easily moved around field. A WONDERFUL SUCCESS.

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imal in the sale will be worthy to represent the breed.

Eldorado Winifred, a registered Holstein heifer owned by Alex Whaley, Tulare, recently completed official records of 30.21 pounds butter from 637.6 pounds milk in seven days, 119.40 pounds butter from 2,645.7 pounds milk in 30 days, as a junior four year old. She made over 25 pounds butter in seven days as a senior two year old and is out of the 32 pound cow Winifred Hotaling 3d and sired by Sir Holland Gamp. She is one of the great individuals of the breed in California. Another good record was lately made in Mr. Whaley's herd by Yama Princess Alcartra Lass, that made 27.01 pounds butter from 601.3 pounds milk in seven days.

F. E. Crowell of Alpaugh will add another pedigreed hog herd to the growing number in Tulare County and will introduce the Berkshire breed in that section. At the California International he bought a 21 months old boar of the famous Epochal strain for a herd leader from Dr. O'Connor of the Castleview ranch of Santa Rosa.

A consignment sale of 60 head of bred gilts will be held at the sales pavilion in Tulare, February 18, by the Tulare County Duroc-Jersey Breeders Association, at which 60 head of bred and open gilts will be offered at auction. All of the bred gilts to be entered will have been bred to prize winning boars in the state.

C. T. Thompson, breeder of high class Durocs at Bishop, is concluding purchases of four crack brood sows from Eastern herds. Two of these are from the noted McKee Bros. herd at Versailles, Kentucky. A third is a daughter of Jackson's Orion King, while the fourth is by Mammoth Sensation. The home herd of brood sows at Bishop consists largely of a select string of Defender sows, the get of the big grand champion boar Thompson's Pilot Defender. Mr. Thompson reports a number of good sales since his return from the Los Angeles Livestock Show.

Ralph W. Mitchell, junior member of the firm of C. K. Mitchell & Son, breeders of Durocs at San Diego, has accepted the management of the W. Moore Green Canyon Ranch herd of Durocs at Fallbrook.

Hugh C. Shinn of Tulare writes: "I recently sold a fine boar pig Fortuna Bob by Bridges Bob Wonder to W. H. Rough. Breeders who have seen this pig have pronounced him a great prospect and I think more will be heard of him later. Also sold a couple of bred gilts to the Boys Pig Club at Bakersfield and a boar pig out of my grand champion sow Bob's Giantess to James Herod at Bakersfield and a boar pig by The Californian to F. E. Fay of Tipton."

THURSDAY, DECEMBER 11

Owing to error in copy the first advertisement of Ord L. Leachman for the great Shorthorn sale at Sacramento for Thursday, December 11, was printed Tuesday, December 11. Remember, the day of the week for the sale is Thursday, while the date December 11 is correct. The sale is on state fair grounds at Sacramento and 50 utility Shorthorns from the W. C. Short herd of Reno, Nevada, will be offered. This is the first sale in this state from this herd, one of the oldest in the West.

INTERESTING APPROPRIATIONS

Provisions of the last federal agricultural appropriation bill that are of interest to Californians are: One of $20,000 for investigating new grape industries and methods of utilizing grapes heretofore used for making wine; one of $15,000 for stimulating the improvement of potato seed stocks; and one of $20,000 for nut improvement work, especially upon pecans, almonds, Persian walnuts, black walnuts, hickory nuts, etc. A general appropriation of $50,000 was made for stimulating seed production, and part of it will be spent in a survey of California vegetable and flower seeds.

The Famous **TAGUS RANCH** Tulare Cal.

MERRITT-BOWERS COMPANY

2-DAY SALE Tuesday Wednesday DECEMBER 16th 17th

Offers an Opportunity No Stockman or Farmer Can Afford to Miss

The Shorthorns

101 in number, are the largest lot of animals of superior breeding ever offered in a single Shorthorn sale in California. The 58 beef cows and heifers, most of them bred and many selling with calf at side, are a fine lot of matrons by Scotch and Scotch topped bulls. Many are by Knight Avon 2nd, the great Curtiss bred bull by the Carpenter & Ross bull Comet by Avondale and he by Whitehall Sultan, which is quite enough to say of a Shorthorn. Some of the cows are in calf to Knight Avon 2nd, and others by some of his outstanding sons.

Knight Avon's sons of breeding age are numerous in the offering and frequently in the catalog will be found sons and daughters of Coronado, by Golden Goods, the last of the great sires combining the direct blood of the St. Louis World's Fair Champions, Young Abbotsburn and Choice Goods. A worthy son of Coronado transmitted more of this blood through the herd and is bred to daughters of Arizona Archer, by Victorious Archer by Golden Lord, a member of the strikingly handsome Golden Drops section of the Linwood herd. Knight Avon 2nd was used quite extensively on the daughters of Coronado.

The 25 bulls in the offering are good rugged sires, bred and raised in the open and ready for the range or breeder's lot.

The 13 MILKING SHORTHORNS are a shapely lot of well developed dual purpose cows, and for the most part are bred along lines that will give the greatest production of valuable products for which the Shorthorn is noted—meat and milk. Glensides Sequel of the famous Glensides breeding has seen service in the herd and is the sire of the half dozen fine vigorous young bulls that should prove an attraction where milk-strain Shorthorns are in demand.

The Shorthorn offering, presented in good rugged range condition, without the usual sale ring preparation, will give the buyer more for his dollar than had the herd been pampered and fitted for the auction.

The good regular breeders of such excellent blood lines and tuberculin tested should make the most inviting Shorthorn offering of the year and the large number selling is bound to have the bargain spots.

The Shorthorns will go through the ring commencing 9:30 o'clock Wednesday, December 17th.

The Herefords

The 30 two-year-old Hereford bulls are as nice a lot as was ever offered in a bull sale of either registered or unregistered purebreds. They are the tops of a large purebred herd that has been permitted to run on the range without the keeping up of individual breeding records, so they will sell unregistered, ready for the range. The ruggedness, size and vigor of the lot commends them to the buyers who want a better crop of calves by bulls that have been bred right and raised under conditions which will permit their being turned out on the range to prove their worth. They sell Wednesday, December 17th.

The Work Horses

No ranch can boast of a better lot of good work horses than this one, and the 30 head that are offered are ready to get into the collar for any kind of work. They sell Tuesday, December 16th.

The Mules

The 25 mules are fine big good pullers, heavy in demand throughout the land today, and buyers will find the kind to their liking in this bunch. They sell Tuesday, December 16th.

The Unbroken Horses

The 25 unbroken horses are for the greater part saddle stock, being a nice trim lot of young horses not to be overlooked. They also sell Tuesday, December 16th.

The Draft Horses

The horse offering has never been surpassed for a finer lot of registered and unregistered stock than has been put up to the highest bidders at this sale.

Percherons

Superior, 97190, the big steel gray 7-year-old stallion by Restaurant, an imported stud, and out of Black Bess, is the kind badly needed in many communities of the country today.

Woodland, 141084, the gray 3-year-old by Nero, 1211001, and out of Comet, 74004, is one of the promising young stallions of the Pacific Coast.

Inquiet, 69564 (79239), the big black imported stallion by Aiglon (64052) and out of Castille (61344) is one of the kind seldom, if ever, found at public sales.

Patre of Palcines, 111450, a gray 5-year-old stallion by Fernand, 72763 (65262), and out of Pink Timber, 46040, is a real horse through and through.

A gray 2-year-old stallion rounds out the Percheron offering, the likes of which has rarely ever been sent through the sale ring.

Shires

General Sherman, 18042, a black 4-year-old stallion by Rolleston Wonder, 7931 (22730), and out of March Queenie, 10517 (58913), both imported stock, could stand anywhere in the country.

March Coronation, (12959), an imported 7-year-old stallion, is a beauty, size and quality unexcelled.

Goodacre Gem, 15949, a 6-year-old bay mare by Nateby Statesman, 8510 (23539), and out of Horbling Gem, 10519 (58916), is a fine brood animal of the best of imported mating.

Wrydelanes Model, 105454 (58883), a brown mare by Warden Royal Harold (16300) by Harold (3703) and out of Norbury Sylph (48883) was imported in 1909 as a filly and comes from the best Shire blood in England.

Belgians

Dewey, a roan 2-year-old stallion by Cesar d'Olsene, 3924 (51518), and out of Diana, 1426 (67045), combines the blood of two of the greatest imported horses ever brought West and his big muscular body and heavy frame would be difficult to equal.

A nice big Belgian stallion colt also goes into the ring for what buyers consider him worth.

Margot de Waere, 66859, a black imported mare by Martin de Cappelle (41336) and out of Marie de Waere, is one of the choice mare offerings.

Mina (1370) a 2000-pound imported roan mare, is of rare quality and substance.

A roan imported mare of 2000 pounds on which the owners cannot secure papers would not be up for sale under any other circumstances.

German Coach Horse

Raven, 5945, a 7-year-old stallion by Latus, 5289, out of Dura, 312, is a horse worthy of his breed.

These sell Tuesday, December 16th.

The Wagons and Harness

The 25 big wagons are in good-as-new condition and with the 20 sets of first-class harness will make a feature of the sale well worth figuring on even if interested in nothing else. They sell Tuesday morning, December 16th, and will go fast.

The Jacks

Five of the biggest boned kind of Jacks that get those big useful mules are to be sold under the hammer on Tuesday, December 16th, making an attraction of the sale that is of unequalled offering anywhere in the country.

THE IMPLEMENTS

Tagus Ranch is noted for its modern equipment and the manner in which it maintains its farm and field machinery is an example for other ranches of the country. Much of the great 6000-acre ranch is being leased, so there is offered an assortment of implements too numerous to mention. Plows of all descriptions, subsoilers, grain and alfalfa drills, and hundreds of useful and expensive tools that have seen but slight service, will go to the highest bidder.

THE IMPLEMENTS WILL START THE GREAT 2-DAY SALE, COMMENCING 9:30 O'CLOCK, TUESDAY MORNING, DECEMBER 16, 1919.

Implements, Wagons, Harness, Horses, Jacks and Mules Sell

Tuesday, Dec. 16

100 Shorthorns 100

30 Herefords 30

Sell Wednesday, Dec. 17

The Tagus Ranch is one of the Great Farms of the Country. Its stock and equipment are in keeping with its good reputation. Come for both days. You will find what you want and get it at your own price. The ranch is on the highway 5 miles North of Tulare.

For Catalog and further information, apply

Merritt-Bowers Company, Tagus Ranch, Tulare, Cal.

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Next Thursday, December, 11th

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SHORTHORN

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for Breeders, Range Men and Farmers to secure at their own prices 50 head of Registered, Tuberculin Tested and Guaranteed Breeders.

SHORTHORNS

from the herd of

W. C. SHORT

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A splendid lot of young bulls and heifers ranging from 10 to 24 months of age from one of the oldest established herds in the west, breeding for the needs of the Western breeder, stockman and farmer.

TO OVERLOOK THIS SALE WILL BE MISSING AN OFFERING THAT IS SELDOM PRESENTED ON THE PACIFIC COAST.

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Get It. Relief. Gombault's Caustic Balsam will give you immediate A Marvelous Human Flesh Healer and a never failing remedy for every known pain that can be relieved or cured by external applications. Thousands testify to the wonderful healing and curing powers of this great French Remedy. A Liniment that will soothe, heal and cure your every day pains, wounds and bruises.

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It Helps Nature to Heal and Cure. Penetrates, acts quickly, yet is perfectly harmless. Kills all Germs and prevents Blood Poison. Nothing so good known as an application for Sores, Wounds, Felons, Exterior Cancers, Burns, Carbuncles and Swellings.

"I had a bad hand with four running sores on it. The more I doctored the worse it got. I used Caustic Balsam and never needed a doctor after that." —Ed. Rosenburg, St. Ansgat, Ia.

Mrs. James McKenzie, Edina, Mo., says: "Just ten applications of Caustic Balsam relieved me of goitre. My husband also cured eczema with it, and we use it for corns, bunions, colds, sore throat and pain in the chest."

A Safe, Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Rheumatism and Stiff Joints. Whenever and wherever a Liniment is needed Caustic Balsam has no Equal.

Dr. Higley, Whitewater, Wis., writes: "I have been using Caustic Balsam for ten years for different ailments. It has never failed me yet."

A liniment that not only heals and cures Human Flesh, but for years the accepted Standard veterinary remedy of the world.

Price, $1.75 per bottle at all Druggists or sent by us express prepaid. Write for Free Booklet and read what others say.

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PURE HAWAIIAN CANE
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By actual test it will increase pork production half a pound daily over a barley and tankage feed yet it sells for less than half the price.

By actual test it will increase milk production 15 per cent.

Seventy-five per cent of the Blue Ribbon Winners at the Livestock Show were owned by people who are feeding molasses.

If you want increased production at lower costs feed molasses.

Write us at once for prices and interesting booklet telling how to reduce feeding costs.

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Hauser's Digester Tankage
Gives Greatest Value for Least Money
It Makes Them Fat
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Is a Calf Worth 23 Cents?

For 23 cents you can insure your calves against death from Blackleg by having them vaccinated with PURITY BLACKLEG AGGRESSIN. (The Kansas Germ Free Blackleg Vaccine.) One treatment immunizes for life and there is no danger in introducing Blackleg into healthy herds of cattle. We also manufacture and sell PURITY ANTI-HOG CHOLERA SERUM, PURITY MIXED VACCINE for swine, and PURITY HEMORRAGHIC SEPTICEMIA VACCINES for cattle and sheep. Stop your losses and increase your profits—it's good business. For service that counts, and does not end by selling, write, wire or phone

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A BUSINESS AUCTIONEER

When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.

GEORGE W. BELL **Tulare, California**

STRAY THOUGHTS OF A COWMAN

By A. L. Spellmeyer

Our bulk of killers are merely branches of those Eastern firms who pay this extra four to six cents for quality in the Middle West. Why can't they do it here and encourage home production? Home industry is essential in cattle production and feeding.

California, the state of progress, is getting to be behind the times in the cow business. It is true it now has brand inspection, which Arizona, Texas and other states have had for many years. Arizona now has a state fencing law, and with the five year forest leases, all it needs is terra money and in a very few years Arizona will run more cattle and have better cattle than California. There are almost as many registered Hereford cows in Arizona as in California, which is a little item some of our people don't know.

All the Mexican cut-backs and trash from the border have been foisted upon these California ranchers as Arizona cattle. There are good cattle in Arizona and hundreds of thousands of them, but our people don't get to see many of them as they won't pay the price. The best cattle and the best lambs go usually North and East where there are markets and where an extra price for quality is paid.

There will be no stockyards in California unless packers support them and some of them won't do it unless Uncle Sam gets into the game. A stockyards not backed by packers or Uncle Sam would merely fizzle out and be something nice for a gang of land speculators or stock promoters. A stockyards in Los Angeles and San Francisco would be a great blessing for producers and bring in much money, but it is as yet merely a hope which we cannot believe will materialize.

As meat comprises about one-third of the cost of eating and a part of living cost, we should have our school children study these primary economic questions and help decide the meat question for the future generations as it doesn't seem as if any action was being taken by our government which will bring any results during our present lifetime.

The finish market to be put to meat around these parts we hear is nine cents for grass fat steers and eight for grass fat cows. It will sure finish some of the cattle feeders who have loaded up to furnish much needed food for the people of this and other countries at the behest of the food administration and other official sources. They will be public benefactors because they are certain at present prices to drop all their profits for this year and most of some other years.

VALUE OF A PURE BRED SIRE

In reply to a query for definite figures as to the value of a pure bred sire, D. S. Bullock, Wisconsin Livestock Breeders Association, writes as follows in the Breeders Gazette:

"Through the Wisconsin cow testing associations it has been possible to collect a large amount of material showing the value of pure bred sires over grades and scrubs in dairy herds. The herds in the different associations were classified as to the kind of sire they were using. One association reports that the average production of herds using pure bred sires is 49 pounds per cow per year greater than that of herds using grades and scrubs. This is the poorest showing made by the pure bred sires in any association in Wisconsin. The Anston Cow Testing Association reports that cows in their association from herds headed by pure bred sires average 230 pounds of butter fat per cow. Herds in the same association using grade and scrub bulls average only 145 pounds butter fat per year. In another association which has been in operation for several years the milk production per cow in those herds using pure bred bulls was 6,350 pounds, while in herds using grades and scrubs 5,009 pounds was the average. The difference in butter fat per

SANTA ANITA RANCHO

Anoakia Breeding Farm

Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five gaited saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin
Santa Anita Cal.
W. H. Taylor, Supt.

Get a Holstein Bull Now

It doesn't cost much to make a start, but every year it will cost more. Some of the most successful and prominent Holstein men started with only a few pure bred animals in connection with a number of good grades, gradually weeding out the grades and replacing them with pure breds.

Grade up your herd with a pure bred Holstein sire. Then when you're satisfied that you're on the right track, you'll feel like getting a few cows. Any good Holstein does the work of two ordinary cows. If interested in

HOLSTEIN CATTLE
send for our booklets
The Holstein-Friesian Association of America, Box 120, Brattleboro, Vt.

Quality Holsteins

Our herd is headed by a grandson of the world's greatest dairy cow, Tilly Alcartra,

Sir Aaggie Korndyke Alcartra

whose dam and sire's dam average:
Butter, one year..... 1096.58
Milk, one year.....27316.60
Females and bulls from A. R. O. dams for sale
All animals guaranteed
Leeman & Kilgore, Ripon, Calif.

Bunting's Mission Herefords Are Profitable

They will increase cattle profits by adding pounds of beef to every steer sold. For the best of breeding and individuality visit my herd and see the kind that win at the best shows. Prices reasonable. You'll be welcome.

JOHN A. BUNTING
Mission San Jose Calif.

DIAMOND G HEREFORDS

are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 2d, one of the best bulls in the West. Correspondence invited and visitors welcome.

H. H. Gable **Esparto, Calif.**

Brighton Farm Herds

Registered Shorthorns
and
Berkshires---Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

Beef Cattle Specialist

For 30 years I have been devoting my entire time to pure bred beef cattle. I know the kind of cattle California needs and where and how to buy. I make regular trips to the great producing centers and will buy on order. Best of references. Satisfaction assured. Correspondence invited. R. M. DUNLAP, Hotel Land
Sacramento, Cal.

cow in herds using grade and scrub bulls and those using pure breds was 80 pounds. In the cow testing association work Wisconsin has what is known as a Register of Production, and any cow in the association producing 365 pounds or more of fat per year can be enrolled in this. During the first year 281 cows were entered and of these 264 were sired by pure bred bulls. The other 17 were entered as natives; the reason for their being so entered was that nothing was known of their ancestry. As far as our records go no cow sired by a grade or scrub bull has qualified for this Register of Production. Nothing could be more conclusive than these figures as to the value of pure bred sires in dairy herds."

LIVESTOCK CARRYING CAPACITY

The livestock carrying capacity of the various counties of Arizona has been worked out by Dr. R. H. Williams of the agricultural college. These figures show a variation from ranges which will require 319 acres to support a cow for a year to counties with ranges where 15 acres will support a cow for a year. The figures for all counties follow:

	Acres per Cow
Santa Cruz	15.0
Cochise	18.8
Greenlee	19.8
Graham	20.5
Gila	22.6
Yavapai	22.8
Apache	29.0
Pinal	32.3
Pima	33.5
Coconino	40.7
Maricopa	46.2
Navajo	47.2
Mohave	57.2
Yuma	319.0

Veterinary

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Scabby Skin

Please give a remedy for scab on a horse's legs. Is it due to a parasite or is it in the blood?—Subscriber, Escondido.

The trouble may be all in the skin or part of it may be due to inactive kidneys. Give a tablespoon of nitrate of potash in the feed morning and evening for a week. Also get your druggist to dissolve an ounce of chloride of zinc in a gallon of water. Warm the solution and use enough to wet the scabby parts once a day.

Ulcer on Sheep

We have a sheep that was bitten on the back by a dog about a year ago. It would not heal as she kept biting it until we covered it with a cloth; then it formed a scab, but when the scab comes off it is still mattery. What can we do for it?—Subscriber, Tulare.

Get of your druggist some bichloride of mercury tablets, the kind used for dressing wounds. Put one in a pint of warm water and use that solution to wash the ulcer once a day. If it will not dry up then dust on a little powdered burnt alum.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Does Seller Pay Taxes?

I sold my ranch but reserved crops. The deed was delivered before the crop was ripe. I made the first payment of taxes. Am I legally or morally compelled to pay the second installment?—Subscriber, Indio.

As to the question of moral compulsion, it lies not within the scope of this medium unless injunction to render unto Caesar that which is Caesar's should apply. If the deed contained the word "grant," as it probably did, two covenants are thereby implied unless restrained by express terms contained in the conveyance. These two covenants are: (1) That previous to the time of the execution the grantor has not conveyed the same estate or any right, title or interest therein to any person other than the covenantee. (2) That such estate is at the time of the execution of such conveyance free from encumbrances, done, made or suffered between the grantor or any person claiming under him; such covenants may be sued upon in the same manner as if they had been expressly inserted in the conveyance. Taxes are assessed upon the first Monday in March of each year, although they are not payable until afterwards; they become a lien upon the property such that unless restrained by express terms the above covenants apply. You may therefore be legally compelled to pay the second installment. It is probably the case that the deed was drawn by some inexperienced party, but that would not help you.

$30 Holsteins $30

Five weeks old 15-16 pure bred from Waukesha County, the world's greatest cow county. $30.00 crated. Write us for anything in cattle.

DR. J. A. ROBERTS STOCK FARMS
Oconomowoc, Wis.
Western Branch: Hollywood, California

The Highest Priced SIRE and SON

KING KORNDYKE PONTIAC 20th

and HIS SON

KARLRAY PONTIAC TOLA

King Korndyke Pontiac 20th, our junior herd sire, at $6500, is the highest priced Holstein bull ever sold at public sale in California.
Karlray Pontiac Tola, a three months old son of King Korndyke Pontiac 20th, and the great heifer K. P. Tola Joe, has been sold by Gotshall and Magruder, Ripon, to A. B. Spooner, San Luis Obispo, at a price never exceeded in California for a bull calf at private sale.
In these instances price is a true measure of quality.
Why not put a son of this sire at the head of your herd?
OUR ENTIRE HERD IS TUBERCULIN TESTED

Tulare Holstein Farm

W. J. HIGDON, Owner TULARE, CALIF. H. L. REDD, Herdsman

THE WORLD'S GREATEST YEARLY RECORD BREEDING

In the 1000 lb. Sale

State Fair Grounds, Sacramento, Cal.

Thursday, December 18, 1919

70 Young Registered Holstein Cows and Bulls 70

To Be Sold by A. W. Morris & Sons Corporation (Woodland, Cal.)

This great breeding firm is compelled to make an immediate and substantial reduction in the size of their herd owing to the disastrous fire which destroyed their cow barn, alfalfa hay, mill feed and four silos early in November, and buyers will have an opportunity to secure registered Holsteins that would not be offered for sale under less urgent circumstances.

IN THE SALE

A 30 lb. cow that made over 25,000 lbs. milk and 1,081 lbs. butter in one year, bred to King Morco Alcartra, son of Tilly Alcartra.

A 29 lb. daughter of Korndyke Queen De Kol's Prince, bred to King Morco Alcartra. She is the dam of Miss Gelsche Walker Korndyke, former state record two year old.

A 28 lb. 4 year old daughter of a 33 lb. cow that made over 1000 lbs. butter in one year. This cow herself recently completed a record of over 22,000 lbs. milk and 908 lbs. butter in one year.

A 27 lb. granddaughter of Colantha Johanna Lad bred to King Aaggie Mead, full brother to Aaggie Acme of Riverside 2nd, the world's yearly official record cow.

A 26 lb. daughter of a 30 lb. cow that made over 1000 lbs. butter in one year, her dam also a 1000 lb. cow. Bred to Sir Aaggie De Kol Mead, son of the world's record heifer Miss Valley Mead De Kol Walker.

A daughter of King Meade of Riverside that made over 750 lbs. butter in one year as a two year old. She is fresh.

A daughter of King of the Pontiacs that made over 700 lbs. butter in one year as a two year old. Bred to Sir Aaggie De Kol Mead.

A daughter of the great Aaggie Acme of Riverside. Bred to Sir Aaggie De Kol Mead.

A 20 lb. three year old daughter of Prince Gelsche Walker out of a 28 lb. four year old.

A 21 lb. three year old granddaughter of Aralia De Kol bred to King Aaggie Mead.

A 22 lb., three year old granddaughter of Aralia De Kol out of a daughter of Riverside Sadie De Kol Burke. Bred to King Aaggie Mead.

A 21 lb. three year old grandaughter of Colantha Johanna Lad. Bred to King Morco Alcartra.

A daughter of Prince Gelsche Walker out of a 1000 lb. dam that has a 30 pound 1000 pound daughter.

A granddaughter of Pontiac Korndyke bred to King Aaggie Mead.

A granddaughter of Aralia De Kol out of a 26 lb. three year old daughter of a 30 lb. three year old.

A daughter of Segis Pontiac De Kol Burke out of a 31 lb. dam. Bred to King Aaggie Mead.

A granddaughter of King of the Pontiacs, with 850 lbs. butter in one year as a 3 year old. Bred to King Morco Alcartra.

A first calf daughter of a cow that made over 27,000 lbs. milk and 1093 lbs. butter in one year.

A 22 lb. daughter of Albina Butter Boy, sire of the 40 lb. cow Albina Josie. Bred to Sir Aaggie De Kol Mead.

A daughter of Changeling Butter Boy out of a 26 lb. daughter of Tidy Abbekerk Prince. Bred to Sir Aaggie De Kol Mead.

A granddaughter of Aralia De Kol out of a 900 lb. half sister to Tilly Alcartra. Bred to Sir Aaggie De Kol Mead.

A daughter of Prince Gelsche Walker with a record of 701 lbs. butter in 305 days as a 3 year old. Now fresh.

A three quarter sister to the world's record heifer Miss Valley Mead De Kol Walker. Bred to Sir Aaggie De Kol Mead.

A daughter of Segis Pontiac De Kol Burke out of a 26 lb. daughter of King Meade of Riverside that made 644 lbs. butter in one year as a 2 year old. Bred to King Morco Alcartra.

Two daughters of a cow that made over 21,000 lbs. milk and over 925 lbs. butter in one year.

A daughter of Segis Pontiac De Kol Burke out of a dam that made over 19,000 lbs. milk and over 870 lbs. butter in one year.

Every female in this offering has a 1000 lb. yearly butter record, is out of a 1000 lb. dam, is by a 1000 lb. sire, or is bred to a 1000 lb. bull.

No sale of registered Holsteins ever held before has closely approached this one in respect to 1000 lb. yearly record breeding, and the opportunity is therefore unprecedented for the purchase of animals with yearly record backing that is being demanded more and more by discriminating buyers.

Every female in the sale is of milking age, and is either fresh or bred to a 1000 lb., a 1100 lb., or a 1300 lb. bull.

The females in this sale are bred to three of the most richly bred yearly record bulls of the breed: SIR AAGGIE DE KOL MEAD, son of the 1100 lb. junior 3 year old, Miss Valley Mead De Kol Walker; KING MORCO ALCARTRA, son of the greatest dairy cow in the world, Tilly Alcartra; KING AAGGIE MEAD, full brother to Aaggie Acme of Riverside 2nd, who holds the world's strictly official yearly butter record.

Every bull of service age in the Morris herd, except of course the herd bulls, is in this sale.

There are only ten young bulls of service age in the Morris herd, so closely have private sales kept the surplus down, and every one will be in this sale. It will then be well for every breeder and dairyman who wants one of the yearly record bulls from this herd, this year, to be on hand sale day.

Every animal in the sale is positively guaranteed to be a breeder; no animal is tuberculin tested.

Catalog free on request. Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager,
Sacramento, California.
Auctioneer: COL. BEN A. RHOADES, LOS ANGELES

A Gift—
not only for this Xmas
but for countless years
to come

THE
Manualo

The Player-Piano that is All but Human
The Instrument You Were Born to Play

EVERYBODY in your family will enjoy this instrument every day for years and years because you actually play it in the same sense that a good performer plays by hand. The Manualo responds to your musical feeling as expressed through the pedals, the same as it responds to one who plays on the keys. It gives you just the effect you instinctively desire—the delightful sensation of *playing* the piano. You have only to try the Manualo to realize its distinctive charm.

Send your name to nearest address for "Songs of Long Ago"—words and music of twenty-six favorites—and let us tell you how you can try this marvelous player-piano without obligation.

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A Name that Stands for Real Worth in
PIANOS AND PLAYER PIANOS

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Household Department

THE MOTHER HEART

By Howard C. Kegley In Youth's Companion

Worn by long hours of toil and child-care,
She lay, asleep. Her trouble-furrowed brow
At last was calm. No trace of woe was there;
From restlessness she's freed herself, somehow.
The intonation made by shunted cars
At Elevated switches, shook the walls.
The ribald songs of men at rowdy bars
Were echoed and reechoed through the halls.
The noisy clang of the police patrol,
The hoarse horn hoots of spectral harbor boats,
Did not disturb the peace that held her soul.
Deaf-eared was she to all discordant notes.

The shrill voice of the midnight paper boy,
The church clock, striking twelve, in vibrant dome,
Met failure if their wish was to annoy
The strength-spent sleeper, in her humble home.
Quite undisturbed she slumbered on and on;
The night grew cold, the noises did not die;
Amid the clangor of approaching dawn
An infant breathed a faint but troubled sigh.
Whereat the woman rose and softly crept
Across the room. There, in the gloom, unseen,
She lingered where her dimpled baby slept,
To know just what that little sigh could mean!

THE FIRE, THE HORSE AND THE OYSTERS

An amusing story is told of Benjamin Franklin. He had been journeying all day on horseback, and was half dead with cold and fatigue, for it was in the depth of winter, the wind was bitingly cold and the snow was falling. When the shades of the evening began to fall he realized that it would be impossible for him to reach his destination, for it was still many miles away. The wind had turned to a hurricane, and snow was blinding him, and in the fast-coming darkness he was liable to perish in a snowdrift. He therefore began to look out for a shelter for himself and his steed, and great was his joy when he came upon a humble little wayside inn. However poor its accommodation might be, he felt he could warm his stiffened and almost frozen limbs, so he hastily dismounted, gave his horse in charge of the stable boy, with many injunctions as to taking good care of it, and hurried into the living room of the little inn, which did duty as parlor, dining room, and kitchen. In its great open chimney was the only fire in the house, and Franklin's disappointment was intense when he found that the landlord and all the guests previously arrived had seated themselves around it so closely that there was not an inch of space for him to squeeze through to get to it.

In vain he spoke of the bitter cold and storm he had been beating his way through; in vain he told of his intense fatigue and chafed his benumbed hands; the selfish occupants of the seats only hugged the fire all the closer, as if afraid of being asked to give up some of its warmth to this new arrival. As usual, Franklin kept his temper, and when, after a little while, the stable boy came in, he turned to him quite eagerly, saying:

"Did you give my horse a good rubdown, as I told you to?"

"Yes, sir, he's good and dry now."

"And did you give him that warm mash I ordered for him?"

"Sure, sir, and you bet he's enjoying it, too."

"And did I remember to tell you to give him his oysters? We mustn't forget to give him his oysters this cold day."

"Oysters! Why, bless your heart, sir, no hoss ever eats oysters?"

"You think not? Well, just try mine. Take him a dozen on a plate and you'll see what will happen," answered Franklin.

The astonished hostler went out with the plateful, as ordered, and a few minutes later every one else had rushed after him to see the wonderful horse that ate oysters, leaving Franklin the sole occupant of the room. With a quiet smile he seized one of the chairs, settled himself in the very best place before the fire, and comfortably warmed himself.

A few minutes later they all returned with the stable boy, who exclaimed indignantly:

"Didn't I tell yer so, hosses never eats oysters! And your hoss wouldn't so much as look at these yer!"

"Wouldn't he? The silly fellow," answered Franklin complacently, as he warmed his hands before the blaze. "Well, then, just give them to me here. I'll eat them for him."

BABY DON'TS

By Helena L. Knechtel, Del Mar

We look through numerous papers but we read the Cultivator. "'Nuf said." As to babies, who hasn't some advice to give? Some of my advice is:

Listen to all the advice offered and then try to forget much of it.

Have a regular time for baby's bath and give it at that time, not whenever it is convenient.

Keep your baby outdoors in the sunshine daily as much as you can. Do not let the sun shine directly into its eyes and face.

Everything it sees is new and strange. The eyes and ears are constantly sending new sensations to the brain. Do not overtax the baby's brain by trying to amuse it too much. How would you like some great big giant to "boo and bah" at you every time you got settled down comfortably?

If your baby can't do all the "stunts" you see other babies do, don't make it a bunch of nerves teaching them; you are trying to raise a strong, healthy child, not training a monkey.

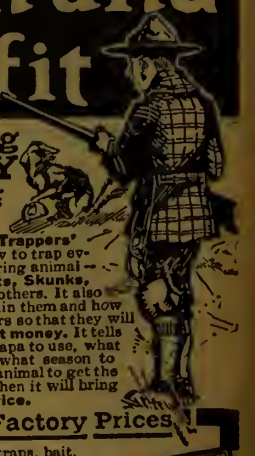
PUNISHMENT

By Minnie Embree Parker

The idea seems to be gaining ground that children should be ruled by love. So they should, but true love will remove undesirable traits of character even though it causes pain. What would we think of a mother who would not allow the physician to set a child's broken bone because of the suffering it would bring? The whole principle of government, from the highest to the lowest, is based upon laws to be obeyed, and if they are not obeyed inevitably punishment comes. How long would our national government exist if there were no punishment to the law breaker?

The old regime that was in vogue when father was a boy and his father

TRAP for Fun and Profit



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Stephens sells traps, bait, smokers, knives and other trappers' supplies at rock bottom prices. Write today for Big, New, Illustrated Trappers' Guide containing Game Laws; Trappers' Supply Catalog, Fur Price List, Shipping Tags—ALL FREE.

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interviewed him in the woodshed occasionally, made sturdier men and better citizens than the weakly, "lovey dovey" style of today. And the child will have more respect and love for the parent who is strong in will and character than for the one who weakly allows a strong willed child to have his own way.

We must not make the mistake of allowing feeling to rule. The needed punishment must not be omitted because we cannot bear to cause pain, and it must be administered thoroughly in spite of the remonstrance of the subject, for we cannot allow wrong traits of character to remain any more than we would allow the child to go with a dirty face because he cries when it is washed. On the other hand punishment must never be administered in anger. We must get rid of the idea held by the mother to whom her boy's teacher sent a note concerning his misconduct, asking her to punish him. She sent back this word, "You whip him yourself; I'm not mad at him." If the parent keeps in mind always that it is for the child's good that he should yield to authority and that he must be taught that lesson even at the expense of present suffering in order to avoid the greater suffering of the future, any necessary punishment can be administered in love and the child will know that it is just and will respect the parent for it.

If the lesson of yielding to authority has been taught from earliest infancy I believe that the whip can be largely laid aside as the child grows older. Physical pain is the only thing that a baby can understand, but if a child has been properly taught from the first day of his life, as he gains in intellect anything that will help him to reason from cause to effect and see that a wrong course of action will result disastrously will be sufficient. Be always firm and kind. Do not allow something one day that you punish for the next. And be sure that the child understands what is disallowed. Make the penalty naturally follow the transgression; if privileges are abused, deprive him of them. When a child is old enough to know that his hand will be burned if he puts it into the fire, he can learn that if he runs away he will be deprived of his liberty and that it will be just as sure to bring that result as that the fire will burn the hand. As a general rule, especially with older children, do not punish before company, but be sure that the necessary correction is not forgotten when the visitor has gone; and never at any time fail to fulfill a promise of punishment or of reward.

One writer has said: "It is the nicest work ever assumed by men and women to deal with youthful minds." It requires wisdom and tact and much love and firmness, but it is a paying proposition as many parents can testify. The reward of having well behaved, lovable boys and girls preparing to shoulder the burdens of life is sufficient to repay the faithful labor of years.

FALLBROOK SUBSCRIBER SENDS HINTS

By Mrs. D. Douglass, Fallbrook

The Useful Flour Sack

Looking over a few old Cultivators I see a good article in January 25 issue on using flour and sugar sacks. I have used sacks in all these ways except for sheets and napkins, even the 50 pound sacks. Where we have so many I have made underclothes and nightgowns. I have two tablecloths made from four sugar sacks that I have used for two years every day week about. I have seen a dressing sacque made from two sugar sacks dyed a pale blue with white insertion trimming. It was very pretty. My neighbors have dyed flour sacks, 50 pound, and covered comforts. I made an apron with one 100 pound sack for the lower part, rounded the two lower corners, put it on a band and took a smaller sack and made a bib, and I am very proud of it. It makes a fine cooking apron.

Cook Green Tomatoes

Now that we have so many green tomatoes on hand maybe you would like to try a new dish I have just tried and like very much.

Put two small onions and two green pimentoes cut up small in a saucepan to stew. Peel five green tomatoes, chop up small and add salt, pepper and butter to taste. Nice for a change.

TWO HOME MADE REMEDIES

By Mrs. C. E. Thome, Tulare

Honey-Horehound Candy

Now is the time for coughs, colds, bronchial troubles and threatened pneumonia. I send some home made remedies which I have found very helpful in our own family.

For that dry, hacking, tight cough: One cup sugar, one cup extracted honey, one cup strong horehound tea. Boil about 30 minutes. Pour out on buttered platter. With a knife fold in the edges till it can be worked with hands, then pull like molasses candy. Work it as long as you can for honey candy is inclined to be sticky. At last pull out in a long smooth rope, lay on a moulding board and with shears cut in lengths just right for a mouthful. Dust with sugar and cornstarch.

Coal Oil Liniment

Here is a liniment given to me by a pioneer woman now dead. We simply could not get along winter nor summer without it.

Mrs. Kellogg's coal oil liniment for colds, pneumonia, sore throat, cuts and bruises: Equal quantities lard, cottolene, or olive oil (I use Wesson oil), turpentine, coal oil; one teaspoon spirits camphor to an ounce of the mixture.

For colds rub chest and back after setting bottle in warm water. For threatened pneumonia apply hot and cover with hot flannels several times a day. It can't be beat for sore throat. Take a piece of cotton cloth about three inches wide and long enough to go a little more than round the neck. Now soak a place in the middle of the cloth, put the wet place on throat. Now take a dry cloth, five or six thicknesses old outting is best, put over the other cloth and fasten with a couple of safety pins. Go to bed and when you get up in the morning take cloths off and repeat next night.

HOW TO MAKE GRAPEJUICE AT HOME

A little late for this season's use is a bulletin under above title, just issued by the United States department of agriculture. It gives methods of making at home presses, filters, etc., with plain drawings illustrating each step in the process. Extraction of juice by the cold press and hot press method both are given.

Embodying the results of this season's experiments it will be found most valuable to have on hand for next year's work. It will be well to send for it at once before the supply is exhausted. It is mailed free to any address in the United States upon request to Division of Publications, United States Department of Agriculture, Washington, D. C.

Here is an outline of steps to be followed, which perhaps will be sufficient for an experienced housekeeper:

Select best available variety.

Coleman Quick-Lites
are best, because they

—Give 300 candle power pure white light. More light than 30 oil lamps or lanterns.

—Make and burn their own gas from common motor gasoline.

—Light with a match and require no special torch.

—Have no wicks to trim nor globes to wash — no soot, no smoke, no odor.

—Will burn in any position, can't spill—no danger if tipped over.

—Burn without glare and flicker—no eye strain.

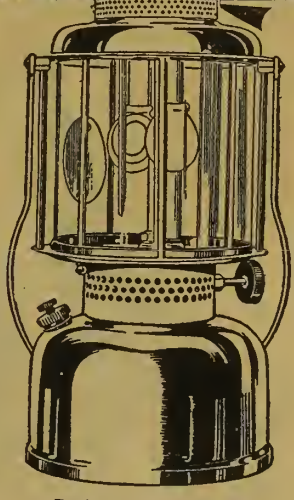
—Will last for years—Built of heavily nickeled brass—many still in use after ten years of service.

—Cost only a fraction over a cent a night to operate.

Style CQ 329, Price $9.50

Just the Thing for Christmas!

Make this Christmas one of greater happiness for every member of the family. How? Simply include a Coleman Quick-Lite among the gifts you bring home on Christmas eve. It will be hard to find any gift which will bring greater joy to the home circle during the festive season or be more appreciated every evening throughout the year. Can you picture your own living room brilliantly lighted by the pure, white radiance of the Quick-Lite Lamp? How marvelous it is, and how cheerfully it floods every corner with the Christmas spirit! So eye-restful, so convenient—without one of the imperfections of electricity, gas or oil.



Style LQ 327, $8.50

Coleman Quick-Lite
Lamps and Lanterns

Every home needs the Quick-Lite Lamp for reading, sewing and general night work indoors, and every home needs a Quick-Lite Lantern for feeding, milking, repairing and every kind of night work out of doors. The Quick-Lite Lamp is handsomely designed, so that it is an ornament in any home. Equipped with Universal Shade Holder. The Quick-Lite Lantern is durably built for long, hard service. Mica globe stands rough handling. Can't blow out in the wildest storm. Most convenient light known for farm use.

Buy it now, so you'll be sure to have it for the "big surprise" of Christmas day. See the demonstrations of Quick-Lites at your dealer's now. You can't be too early this year, for the demand will be very heavy.

15,000 dealers everywhere sell Quick-Lite Lamps. Lanterns and Lighting Plants. If yours can't supply you write nearest house.

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UNDERWEAR

Guarantee—*We guarantee Hanes Underwear absolutely—every thread, stitch and button. We guarantee to return your money or give you a new garment if any seam breaks.*

Biggest winter underwear value ever sold at the price!

Hanes winter weight Union Suits and Shirts and Drawers for men exceed in return-value to you—*comfort, warmth, wear* and *satisfaction*—the most enthusiastic statement we could make personally or in our advertisements.

Get your hands on Hanes Shirts and Drawers (illustrated in the diagram above). Go over every detail of workmanship—the *guaranteed* unbreakable seams; *guaranteed* buttonholes that last the life of the garment; *guaranteed* elastic knit collarette that can't gap; *guaranteed* shape-holding elastic shoulders; *guaranteed* staunch, snug-fitting 3-button sateen waist-band; *guaranteed* elastic knit wrists; pearl buttons sewed on to stay; reinforcements at every strain point. And, the *Hanes closed crotch stays closed!*

Choice of Hanes Union Suits and Shirts and Drawers is a matter of personal preference. Either will delight you.

Hanes Union Suits for Boys If you're keen to keep the little fellows warm and snug this winter, put them into Hanes Union Suits—the very finest underwear for boys we ever saw near the price. They stand the roughest wear and the hardest wash and give the greatest warmth and comfort. They are practically the same as the men's union suits—all the desired features—with added fleeciness. Don't delay your buying. If your dealer can't supply you write us at once.

P. H. HANES KNITTING CO., Winston-Salem, N. C.
New York Office, 366 Broadway

WARNING TO THE TRADE—Any garment offered as "Hanes" is a substitute unless it bears the Hanes label.

Drives the chills from the morning shave

Portable comfort—instant heat at the touch of a match. No dust or dirt. No smoke or odor. Oil consumed only when needed.

Pearl Oil is refined and re-refined; pure and clean burning. Sold in bulk and in five-gallon cans. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.

STANDARD OIL COMPANY
CALIFORNIA

Gather fruit that is fully ripe, sound and clean.

Crush fruit.

Cold Press Method: Press juice from grapes without heating. Allow to stand from four to six hours for settling.

Hot Press Method: If you have not a fruit press place crushed grapes in enameled vessels. Heat with constant stirring to 175 degrees Fahrenheit, using a thermometer for testing. Hang fruit up in a drain bag. Press to liberate the hot juice. Allow the juice to stand and settle until cold (6 to 12 hours).

Strain through clean doubled cheese cloth without disturbing sediment.

Sweeten, acidify, or blend, if necessary.

Filter through flannel jelly bag.

Fill fruit jars to neck and cover with glass tops.

Place in a pasteurizer having a false bottom, with tops of jars two inches above water level.

Heat in closed pasteurizer to 185 degrees Fahrenheit, testing temperature in jars with thermometer.

Seal jars and remove from pasteurizer.

Store in cool, dark, dry closet until juice is cleared by the crystallization and precipitation of argol (4 to 12 months).

Transfer to bottles, filtering to free juice from sediment.

Cap bottles.

Pasteurize bottles by submersion method at 180 degrees Fahrenheit.

Remove bottles, placing on sides, and allow to cool.

Dip tops corked bottles in a melted mixture consisting of equal parts of rosin and beeswax.

Store bottles (on sides) in a dark, dry, cool room.

Label bottles with the name of product, variety of fruit, net quantity of contents, and name and address of maker.

BALANCED MEATLESS MEALS WITH LIMA BEANS

A series of 12 meatless menus with recipes has been issued by the California Lima Bean Growers Association, Oxnard. Manager Churchill of the association writes:

"The menus and recipes were compiled and tested by the School of Domestic Arts and Science, Chicago. They are authentic and you will find them to be practical, workable, delicious and economical. Of course few people would want to do without meat entirely because meat is good food and its flavors are attractive. But meat is your largest food expense if you buy as the average woman does. The main food element in meat is protein. The same protein in lima beans costs from one-third to one-half as much. The flavors that you will find in these lima bean dishes are delightfully satisfying, in fact they will be an attractive change from meat flavors. Remember that the menus provide perfectly balanced meals. The fat that meat would supply is furnished in other foods included in the menus, as well as valuable mineral salts and carbohydrates."

These, we believe, will be mailed free on request to any reader of the Cultivator.

The Cultivator reprints here four of the menus and other receipes:

* * *

Cream of Lima Bean Soup—Croutons, Celery, Apple Tapioca Pudding.

Lima Bean Soup

One cup dried lima beans, six cups cold water, one onion, one slice carrot, one cup milk, two tablespoons fat, two tablespoons flour, salt, pepper.

Soak beans over night. Drain, add water, cook until soft and rub through a sieve. Cook onion and carrot in fat, remove vegetables, add flour, seasoning and bean puree. Add milk, strain and reheat. Serves about five.

* * *

Lima Bean Chowder, Wafers, Olives, Celery, Baked Apples.

Lima Bean Chowder

One cup dried baby lima beans, one small onion, one-half can tomatoes, one-eighth teaspoon soda, salt, one-quarter teaspoon pepper, two tablespoons butter, one tablespoon flour, one and one-half cups milk.

Cut onion very fine and brown in one tablespoon butter. Put beans in kettle. Add seasonings. Cover with

The Day After Christmas

One gift stands out above all the others—the one that you can use at once for good, hard, rollicking play.

The Auto-Wheel

You can jump right on it on Christmas morning, and you'll *know* it's Christmas. And then the next day, and the next, and on through your boyhood, your Auto-Wheel is your most dependable friend. Always ready for fun or work. Somehow, it coasts faster than the others, and it's easier to pull with a load.

It has real roller bearings, and the steel tires and axles make it strong and long-wearing.

There Are Two Types

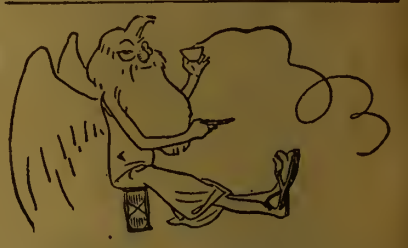
Auto-Wheel Coaster
—the old reliable—a marvel for coasting and general use.

Auto-Wheel Roadster
—two wagons in one. Open up the sides and you have a box-wagon. Fold them toward the center and there is the snappiest roadster you ever saw. And it takes but a moment to make the change. Put the Auto Wheel on your Christmas list The other fellows want it, too. And when you all gather for the first coast—form your Auto-Wheel Coaster Club. We'll send you a cap for each member, and a special cap for the Captain, as soon as your club is organized.

FELT PENNANT FREE—Send us the names of 3 local dealers, telling which one handles the Auto-Wheel. We'll send you a handsome Felt Pennant and Auto-Wheel Booklet, showing these wagons in detail.

Write us at once, so you can show the folks what your Christmas present ought to be.

The Buffalo Sled Co.
173 Schenck St.
N. Tonawanda, N. Y.
In Canada: Preston, Ont.



How long does a pound of tea last?

Depends on the tea.

Fine tea has more cups of real tea-flavor to the pound than common tea.

On the other hand, you drink more: it is so good.

Think this over; and try Schilling Tea, the fine practical economical tea of this country—your money back (at your grocer's) if you want it.

There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

STRAWBERRY PLANTS
Best Varieties, Best Plants
Best Prices and Best Service.
Big orders a specialty; small orders appreciated.
Write V. R. ALLEN, Seaford, Sussex Co. Del.

We all like the man who "sticks through thick and thin."

The Cultivator Patterns

BE SURE TO SEND SIZE

3038-3040. A Stylish Costume. Waist 3038 cut in 6 sizes, 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3040 cut in 6 sizes, 22, 24, 26, 28, 30 and 32 inches waist measure. The entire dress will require 8 yards of 42 inch material for a medium size. The skirt measures about 1 2-3 yards at the foot. TWO separate patterns 10 cents for each pattern.

2679. Girls' Dress. Cut in 4 sizes: 2, 4, 6 and 8 years. Size 4 will require 2⅜ yards of 36-inch material. Price 10 cents.

3049. Ladies Cover All Apron. Cut in 4 sizes: Small, 32-34; Medium, 36-39; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size Medium requires 4⅝ yards of 36 inch material. Price 10 cents.

3043. Girl's School Dress. Cut in 4 sizes: 8, 10, 12 and 14 years. Size 10 requires 3¾ yards of 44-inch material. Price, 10 cents.

3033. "Tunic" Dress. Cut in 3 sizes: 16, 18 and 20 years. Size 18 requires 5⅝ yards of 44-inch material. Width of skirt at lower edge is 1¾ yards. Price, 10 cents.

3061. Doll's Set. Cut in 5 sizes for Dolls: 16, 18, 20, 22 and 24 inches in heighth. Size 18 will require ⅝ yard of 36 inch material for the dress, ⅝ yard of 40 inch material for the cape, and ½ yard of 20 inch material for the bonnet. Price, 10 cents.

3035. Girl's School Dress. Cut in 3 sizes: 12, 14 and 16 years. Size 14 will require 5⅛ yards of 27-inch material. Price, 10 cents.

3032. Ladies' House Dress. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5⅝ yards of 36-inch material. Width of dress at lower edge is about 2 yards. Price, 10 cents.

CATALOGUE NOTICE

Send 10 cents in silver or stamps for our Up-to-Date FALL AND WINTER 1919-1920 CATALOGUE, containing 550 designs of Ladies' Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 80 of the various, simple stitches) all valuable hints to the home dressmaker.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest Chicago styles, all pattern orders are filled in Chicago. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT

California Cultivator
Los Angeles.

water and simmer until tender. Make white sauce of one tablespoon butter flour and milk. Add to chowder and cook until slightly thickened. Heat tomatoes, strain and add soda. Add to chowder just before serving. Serves about five.

* * *

Baked Lima Beans, Cucumber and Radish Salad, Brown Betty, Sterling Sauce.

Baked Lima Beans

Place a layer of boiled lima beans in a baking dish, add a little green pepper, salt and sprinkle the layer with dry bread crumbs. Add another layer of beans and seasonings. Cover the top with buttered crumbs, and bake in a moderate oven about 20 minutes.

* * *

Lima Bean Croquettes, Spinach, Fruit Salad, Wafers.

Lima Bean Croquettes

One cup baby lima beans, cold water to cover, one-half cup rolled dried bread crumbs, three tablespoons milk, one-half teaspoon salt, pepper one teaspoon sage, onion juice, one egg.

Soak beans over night in cold water. Drain and cook in boiling water until soft, then force through a puree strainer. Add crumbs, milk, seasonings, and egg, beaten slightly. Shape in the form of croquettes; dip in egg and crumbs and fry in deep fat. Serves about five.

* * *

Lima Bean Souffle

Two cups cooked lima beans, two tablespoons butter, one teaspoon salt one-eighth teaspoon pepper, one-third cup milk, two eggs.

Put beans through a sieve, add seasonings, butter and milk. When thoroughly blended add well beaten egg yolks. Fold in stiffly beaten whites Turn into buttered baking dish, set dish in water and bake slowly until firm. Serves about five.

Succotash

One cup cooked lima beans, one cup cooked corn.

Mix lima beans and corn; season with butter and salt and heat before serving.

Lima Bean Puree

One cup lima beans soaked over night in cold water and cooked until tender. Put through sieve and add seasonings and butter. Beat well and serve very hot. Serves about five.

Lima Bean Fritters

Two cups cooked baby lima beans, one cup flour, one teaspoon baking powder, one and one-half teaspoon salt, one-quarter teaspoon paprika, two eggs.

Chop beans, add dry ingredients mixed and sifted, then add well beaten yolks and fold in stiffly beaten whites Cook on griddle or frying pan. Serves about five.

Lima Bean Salad

Mix equal quantities of baby lima beans and celery cut in one-quarter inch pieces. Marinate with French dressing, garnish with sections or slices of tomatoes, and serve on lettuce with mayonnaise or cooked dressing.

Scalloped Lima Beans

Put a layer of boiled lima beans into a buttered baking dish, sprinkle with salt and pepper. Repeat, then add enough white sauce to cover. Add buttered bread crumbs over the top and bake in a moderate over 20 minutes.

THIS WEEK'S PATTERNS

Another Christmas help is offered in Pattern 3061, a dress, cape and cap for Dolly, all for ten cents. The little girl's dress opposite would also make some little girl and her mother very happy on Christmas day.

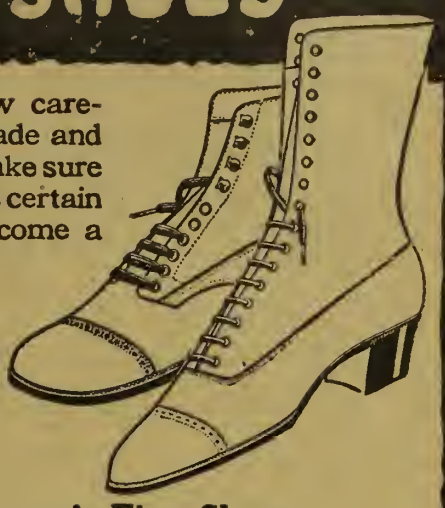
The dress in upper left corner is soft and graceful looking, as if it might have been designed for a home Christmas celebration. In silk or wool with touches of embroidery, it would be lovely. Also any home dressmaker will see the make-over possibilities in such a pattern and the one opposite.

The wide round collar and cuffs form a very dainty feature of the girl's dress 3035. An apron dress that buttons in front will appeal to many housekeepers in Pattern 3049.

Mayer

MILWAUKEE Mayer CUSTOM MADE HONORBILT

HONORBILT SHOES



IF you only knew how carefully every shoe is made and what steps we take to make sure of unvarying quality, it is certain you would promptly become a wearer and booster for Mayer Honorbilt Shoes. Right now it is essential that your shoe dollars should buy the utmost in value. You can always depend on *Honorbilt* values.

Men's and Women's Fine Shoes

Honorbilt Fine Shoes for men and women can be had in all the very latest styles. Neat and graceful, correct in detail, perfect fitting and comfortable. And the wearing quality never fails. Honorbilt Shoes are built to last.

Work Shoes

Honorbilt Work Shoe leather is double tanned to resist the alkali in the soil, as well as barnyard juices. They are soft and easy on the feet, yet long wearing and will not get hard when wet. Honorbilt Work Shoes will give double the wear of ordinary shoes.

Children's Shoes

You can't blame the children if they scuff out some shoes in a hurry. But that doesn't happen to shoes that bear the Mayer *Honorbilt* trade-mark. They are made of honest leathers and are sound and solid—School Shoes and Fine Shoes—built for comfort for growing feet. *They wear like iron.*

Buy Honorbilt Shoes for your whole family. Leading dealers sell them. Look for the trade-mark on the soles.

F. Mayer Boot & Shoe Co.
Milwaukee, Wis.

SURFACE IRRIGATION

10 FOOT 6 INCHES LONG — DOUBLE LOCK SEAM — ONE PIECE BODY

CORRUGATED AND PLAIN TANKS

MANUFACTURERS OF
Well Casing, Tanks, Riveted Water Pipe and Supplies
AMERICAN STEEL PIPE & TANK CO.
P. E. Building, Los Angeles, Cal. Branch at Fresno

SANDERS DISC PLOWS

Used everywhere—all styles for orchard and field—one to eight discs, 24, 26 or 28 inches in diameter. Horse drawn or tractor pattern—power lift if wanted. Write for complete information, or call and see these plows when in the City.

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112-18 SO. LOS ANGELES ST.
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Liner rates: Single insertion 3c per word; 35c per issue minimum charge.

FARM LANDS FOR SALE

136 Aere Combination Ranch For Sale—Will consider five to ten thousand dollars on exchange—Improved, well located, —town or country property. Ill health reason for selling and if anything taken in trade must be something not involving constant hard work. Price for the 136 acres, twenty-five thousand dollars,—which will include personal property as follows: Thirty to forty tons oat and barley hay; ton and half kaffir corn; good heavy work horse, harness, wagons, general farm tools, chickens, and considerable household furniture. If straight sale —no trade—will accept half cash and reasonable terms on balance; any property taken in trade must be free from incumbrance. Would sell on contract,—seven thousand dollars down and furnish deed when half purchase price paid up. Would consider selling ninety acres separately, the selling price depending upon which ninety taken. Location, two miles south of Fallbrook, Cal. (state highway) one-quarter mile east of said highway on public road; the cream of the entire frostless Fallbrook district; 600 acres of citrus orchards in this immediate district—and bound to become one of the highest grade citrus districts in the state; no artificial means ever used here to fight frost. Lemons and oranges adjoining this property. San Diego County has recently voted nearly three millions in bonds for boulevarding the highways through Fallbrook connecting with all other main boulevard arteries. San Diego has recently completed direct railroad through to the east via Imperial Valley, which will handle through eastern traffic, freight and passenger,—instead of the old route via Los Angeles. In consequence of these two advantages, coupled with the fact that the FROSTLESS FALLBROOK district is being "discovered" by citrus experts has very materially boosted prices on what APPROVED acreage there is left in this immediate district where ample water is assured. The citrus land hereabouts is all of the higher, more or less rolling land, affording perfect circulation and air drainage; and on this ground even winter vegetables, including peas, beans, etc. can be grown all winter with entire success. Fallbrook is located 105 miles south of Los Angeles via the coast route; or 115 via the inland route; 55 miles north of San Diego and like distance south of Riverside. Twelve miles to the ocean (air line) sixteen via highway. Altitude 500 feet. As fine all the year climate as in California. Fallbrook has Association packing house and cannery. New $25,000 high school; new $20,000 Santa Fe depot. Bus nicks up school children from this neighborhood. Of the land I offer there is around eighty or ninety acres of as high grade citrus land as in the state and an abundance of water two sides of the property within five or six feet from surface; good supply for pumping at thirty feet; or natural reservoir can be graded out to conserve millions of gallons and always be full. No blasting for tree planting; good alluvial soil; of the flat land there is around 25 to 30 acres available for alfalfa, largest portion of which will not require any irrigating (alfalfa adjoining.) Perfect hog pasture, with shade, permanent water; some good walnut land; good almond land; good dairy proposition; poultry, turkeys, potatoes, —in short any kind of farm crop as well as any kind of trees and other lines mentioned, the land is so diversified. Land practically all under cultivation. Nearly $5,000 in crops taken off this past season. New buildings; few acres of walnuts and large family orchard. My sale price 40 to 50 per cent lower than anything offered in California. C. E. HOWLAND, Owner, Fallbrook, California.

For Sale—Near Indio, Coachella Valley, 80 acre ranch on highway, mostly in cotton, finest date, early grape, onion, cotton, alfalfa, truck land. Leased $2,000 cash or third crop. Close estate $20,000. Also fine virgin 80 $5,000, 10 with water $1,600, 10 acres five early grapes ($3,000 crop) $7,000. Onions paid $1,000, grapes $600, cotton $400 acre. Dates more. Abundance pure, cheap water. Come and see. Arthur Cardwell, Coachella, California.

Prune and Apricot Orehards for sale, all sizes; full hearing, well located, with improvements, for $1,500 to $2,000 per acre. DAIRY RANCH, 170 cows, 432 acres leased land, near town and depot. 70 ACRE MOUNTAIN ranch land; good; 1,000 cords oak wood; $40 per acre. 51 ACRES best pear land, house, barn, lots of water, good location; $375 an acre. Address John G. French, Santa Clara, California.

Will Sell 80 acres undeveloped from my 320 acre alfalfa, pear and apple ranch in Antelope Valley, 8 miles east from Lancaster, identically the same soil and water conditions and adjoining the 240 acres now developed; 70 to alfalfa, 20 to apples and 10 to pears, balance to barley, kaffir and rye; 28 foot water lift, rich silt soil. See or write W. B. Stirdivant, 909 Baker-Detweiler Bldg., Los Angeles.

Snohomish County, Washington — 6,000 acres of the finest dairy, berry or general high grade farm lands in the northwest; rapidly improving section; no drouths, bumper crops; tracts, 1 to 80 acres; ten yearly payments. This is your opportunity. Send for literature. Brownell Land Co., Birmingham, Washington.

For Sale—240 acres good alfalfa and orchard land; good climate; 58 miles from Los Angeles. All fenced and cross fenced. Also have some improved land nearby. John Rouff, Palmdale, California.

For Sale—Relinquishments from $50 to $1,000; also well drilling rig for sale or lease. Proven water district; fine opportunity for contract water well work. A. C. Vestal, Wagner, California.

FARM LANDS FOR SALE

For Sale—Orange Cove, Tulare County. 20 acres naveis, 5 Valencias, 3 lemons; 5 year old and good crop now on trees. Good well and new pumping plant. All under ground 8-inch cement pipe line and 12-in., 4-gate valve stand pipe for each tree row. On paved boulevard, and one mile to town, school and packing house. Orange Cove is one of the live young towns of the valley and the safest place for oranges in California. Not frostless, but safe for oranges. For price and information see M. S. ROBERTSON, 313 Story Bldg., Los Angeles, 63724.

200 ACRE MISSOURI FARM, $5,500, WITH PAIR HORSES, 9 head stock, complete farming implements, near RR. town, creamery, etc. Productive tillage in rich bottom land, also 40 acres bench or 2nd bottom; good woodland, saw timber, several acres orchards; 6-room house, barns, corn houses, etc. Aged owner to sell at once sacrifices, $5,500 for all, easy terms. Details page 88 Strout's Fall Catalog Farm Bargains 23 States; copy free. E. A. STROUT FARM AGENCY, 831 A. G. N. Y. Life Bldg., Kansas City, Missouri.

For Sale—56.48 acres in famous Natomas bean, pea, pear and alfalfa district. Abundance of water for irrigating. Barn and domestic well. Twelve miles from Sacramento on paved boulevard. Only $250 per acre. No agents. Box 1850 Motor Route A, Sacramento, California.

Cheap—80 Acres best land in San Bernardino County. One mile from Hinkley. Water abundant. Close by school. Belle Warren, Paradise Valley Sanitarium, National City, California.

Best Land Buy in the State—For particulars and description refer to this column of Cultivator of November 8th and write: Wm. H. Overholtzer, Coachella, California.

For Sale—46 acres of land near Compton on Long Beach Boulevard corner Orange Street. Two Holt caterpillar plow engines, 1-45 H. P.; 1-75 H. P. practically new. R. Mangold, Compton, California.

For Sale Cheap—40 acres improved, good irrigated land ¾ mile from Gridley. D. L. Smith, Gridley, California.

CATTLE

Special Notice—to every cow owner. We all admit it's a pleasure to milk a cow that doesn't KICK or step about or switch her tail when being milked. If the opposite happens it's most enough to annoy a Preacher. All these bad habits are entirely overcome by the use of Our MILKMAN'S COW CLAMP. It's safe for both cow and milker. It makes a vicious kicker stand as quiet as a lamb. In Fly time no Bang Bang on your head with her tail. She stands quiet while you milk with peace and safety. It is simple, easily adjusted, put on and removed in half a minute. Makes milking a pleasure. One user remarked, "It's worth its weight in gold." No getting out of order, will last a life time, order one today and be happy forever. Price prepaid—$5.00 or five for $20.00. Solicit your neighbors and get yours free. Send P. O. Money Order made payable to I. S. Overholtzer, R. 1, Box 13, Covina, California.

Dairy Cows—Are putting in long staple cotton and will sell fifty or more finest New York grade Holstein cows. Excellent producers and as good grade cows as money can buy; 1,100 to 1,500 pound. Price $175.00 per head. Telegraph J. G. Peterson, Mesa, Arizona.

The Lewis Company Baywood herd of registered Holsteins. Herd sire Ormshy Segis Marie Lad, whose dam has produced in two years, beginning as a three year old, 57,481 lbs. of milk and 2,243 lbs. of butter. First National Bank Building, San Jose, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—20 Head Registered Holsteins bred to King Riverside Mead, 1003 lb. bull. A. B. Comfort (owner), Guernsey, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Golden Glen Stock Farm registered Jerseys and Shropshires. Geo. W. Thomas & Sons, Riverside, California.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Nuevo, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Fillbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

HOGS

Registered Hampshires Cholera Immuned. Weanling pigs at very reasonable prices. Blood lines of Pat Maloy, Mose Messenger, Hawkeye Lad, Blythedate Jim and Lookout. Their dams sired by Draper Lad, Captain Kenton, Lookout Cherokee, Gold Mine and Director. Uneda Hampshire Swine Farm, Gardena, California.

Billiken Chester Whites—Entire herd for sale. Every animal listed and priced to move rapidly. Herd boars and sows. Young service boars. Seven fall litters of pigs ready for weaning, by four different sires. Write for special price list. C. B. Cunningham, Mills, California.

BERKSHIRES

"ACHIEVER"

THE BOAR

BERKSHIRES BERKSHIRES

ANCHORAGE QUALITY

We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

A Sow That Farrows
10-11-15-17-11-10-9-10
Is worth her weight in gold
particularly so if she is royally bred. This is the record of Symboleer's Belle. I have a boar pig from her last litter that is a dandy. If you act quickly you can have him for $75.00. SANDERCOCK LAND COMPANY, 23 Montgomery Street, San Francisco. In charge of Natomas Land Sales.

BERKSHIRES

are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. Bred and open gilts from most popular strains for sale now.

GEO. A. STINGLE, El Monte, California

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

For Real Good Berkshires, cholera immune, write for my catalog that gives complete information. Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

"May Rose" Duroc boars have been first and champions at the California state fair and L. A. shows, where the competition was the hottest. We have a few boar pigs sired by them out of our great "May Rose" sows ready for sale. Grab one while they last. Also booking limited number of services for approved sows for our champion boar "May Rose King." Take a look at them. Seeing is believing. Elliott-Brant Rancho, Owensmouth, California.

Weaned Pigs For Sale—Pure bred Duroc-Jersey. Sired by Long Model Defender, a first prize boar and son of Great Model, the most popular boar on the Pacific Coast and Defender Ohio Maid, my wonderful big sow and the centre of attraction at this fall's fairs. No fancy prices. Green Canyon Ranch, Fallbrook, California.

Durocs—A few very fine gilts and boars five months old, about 175 pounds. Great Wonder and King the Col. breeding. Some good pure bred Shropshire ewes, both aged and lambs, and ram lambs, about five of each for sale, lambs are about eight months old. J. J. Prendergast, Redlands, California.

Duroc-Jersey Swine for Sale. Anything you want. Spring boars and gilts from 800 pounds. O. C. K. breeding. Bred and open gilts, same blood lines, 12 great brood sows. The best breeders herd on the coast. Jersey Queen Farm, San Jose, California.

Duroc-Jerseys at Ireland—Sows sired by Cherry Volunteer 2nd and Reformer, bred to Ireland Joe Orion at public sale January 30, 1920. Write for Catalogue, 1219 Brockman Bldg., Los Angeles, California.

I Will Offer a dozen first class young Duroc sows bred for spring litters to my crack yearling boar Nutmeg Gana 292547. Worth Investigating. L. R. Hitchcock, Van Nuys, California.

Am Over Stocked and will sell at little better than pork prices 50 head of very fine registered Duroc-Jersey spring gilts. First come first choice. Green Canyon Ranch, Fallbrook, California.

Big Type Dureos; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

For Sale—One Yearling Boar, Duroc-Jersey, Wonder Model No. 265707. Big Type, satisfaction guaranteed. Address A. R. Bardrick, P. O. Box No. 5, Oceano, California.

Pure Bred Duroc-Jersey pigs of both sexes. Also one yearling boar, best blood lines in state. Address: J. A. Culp, R. F. D. No. 1, Fillmore, California.

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We Are Specialists in production of high grade S. C. White Leghorn Baby Chicks. Thoroughbred heavy laying strain of America's choicest Leghorns fill our pens, and my personal attention is given to all details, assured each customer of highest grade stock. All baby chicks guaranteed and only healthy baby chicks shipped; if not satisfactory on arrival your money returned. Catalogue free. F. C. Rhode, Vineburg Hatchery & Poultry Yards, Vineburg, California.

White Leghorn Cockerels from the top layers of our flock of high producers are only $5 each. These are the kind of males the government experts recommend you to get. Prof. E. J. Hauser, the well known State expert, has examined these birds and says they are exceptionally fine and ready for mating. MOUNTAIN POULTRY RANCH. UPLAND, California. (Government Demonstration and Breeding Farm.)

White Leghorns, chix and hatching eggs also a few cockerels from Curtis' heavy layers. We spare no expense to produce heavy layers with strong vitality. Any chick is good enough for some but the progressive poultryman demands the best. Spring orders are being booked now. All our chicks are hatched from eggs laid in our own yards. O. B. Curtis and Son. Gardena, California. Route 1, Box 29.

Ever Increasing Trade finds us better prepared than ever before to take care of our Day Old Chick business. New concrete building—100 Jubilee machines hatching eight breeds. We sell Hyde's W. L. Cockerels from trapnested stock. Great stuff—shipped on approval; $5.00 to $7.50. Some Buff Orpingtons also. Interesting folder ready. B. W. Archibald, Soquel, Santa Cruz County, California.

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Thoroughbred S. C. White Leghorn Chicks—In 100 and 1000 lots from our Hoganized and Trapnested Stock. Order now for spring delivery. Inventors and Distributors of "Forbros" Separator and Trapnest combined. Write for circular. Forster Brothers, 2918 Otis Street, Berkeley, California.

Barred Plymouth Rocks and White Leghorns — Fourteen years of specialty breeding, exhibiting and shipping these fowls. They have been bred for and are paying in egg production TODAY. Specializing in hatching eggs at moderate prices. Golden Rule Poultry Farm, Portersville, California.

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The Reliable Blue Flame brooder has a capacity of 1000 baby chicks. Consumes but three quarts of kerosene oil in twenty-four hours. It is revolutionizing brooding in the Northwest. We are Pacific Coast distributors. Send for circular. QUEEN HATCHERY, 89 Pike Street, Seattle, Washington.

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Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

"Eastman's Bred-to-Lay." Hoganized and trapnested Barred Plymouth Rocks, Eggs, Cockerels. JANUARY CHICKS. Fairmead Poultry Farm, Fairmead, California.

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For Sale—Samson Tractor with 14 inch extension wheels; Model S. 25, G. M. C., 12-25 H. P. New Oct. 1918; perfect condition. J. deLongueuil, P. O. Box 95, Los Alamos, California.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

For Sale—Neilson Tractor in good condition. Mrs. Lena Clendenon, Palms.

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BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

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50 Thoroughbred Persian Fat-Tail Sheep for sale. Mutton and fur. C. P. Bailey Sons Company, San Jose, California. Importers and breeders of Angora goats and Persian sheep.

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For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

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Burbank's Thornless Blackberry Plants—Orders taken for Spring delivery. Price reasonable. Variety Farm, Clovis, California.

Write for Circular and Prices of Seeds. Wanted Sudan. Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

Avocado Seed Wanted—Mather's Avocado Nursery, P. O. Box 585, Pasadena, California.

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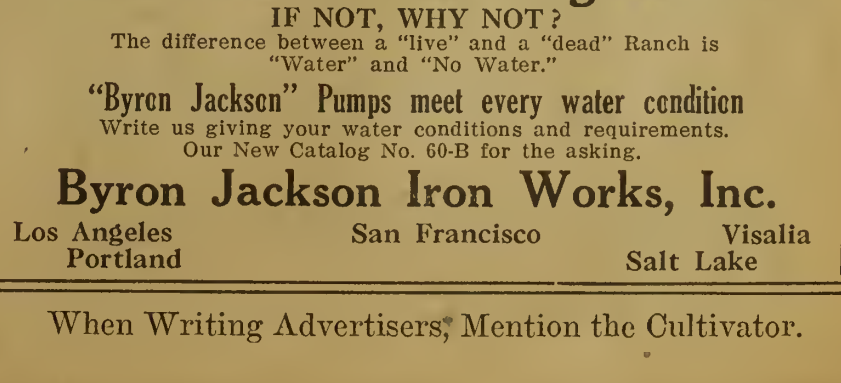

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Subsoil your orchard first. Break your soil so the water can get down into it, then attach the plow standard to the Subsoiler frame and open up a furrow. Then put the manure into the ground.

This is the method employed by some of the most successful growers.

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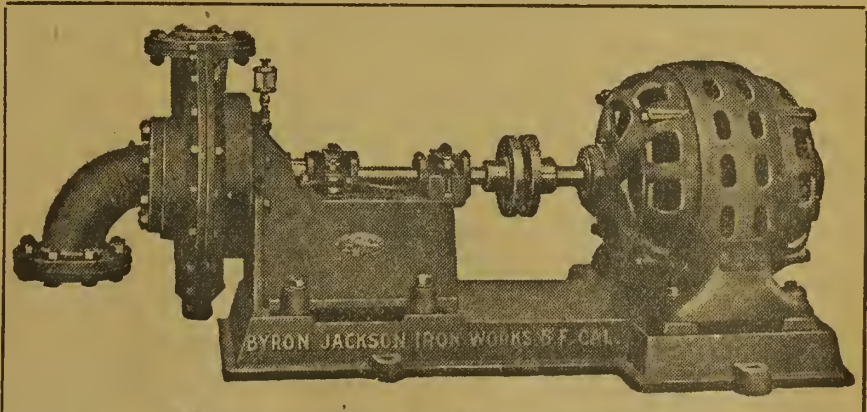

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EACH THE STANDARD OF ITS KIND

Poultry Queries

Conducted by J. A. Koethen

Pullets Molting

White Leghorn pullets hatched March 15 and started to lay about middle of August and laid well until end of October. Beginning this month the egg records started to fall off gradually and I have noticed that about one dozen of them are not in laying condition. Some of their combs dried up and others are molting. The rest are in good laying condition. Would it be more profitable to sell non layers now or hold through the winter till they start laying?—Subscriber, Orange.

Fall molting of pullets is one of our problems in this climate.. January and February pullets nearly always go through a molt in the fall, and March pullets, if the weather is unusually hot or they have been forced for egg production, often go into a light molt in October or November. Sometimes this can be prevented by putting them on a ration which postpones production till the birds are well grown and thoroughly matured, but once the molt has commenced the only way out is to feed heavily in order to furnish material for new feathers as well as for eggs. A feeding of moist mash in the evening just before the pullets go to roost is recommended by some poultrymen. Others give the mash in the morning. Others give additional corn and add oil cake meal to the mash. If you can get your pullets into laying condition by the first of January it will be more profitable to keep them for they will lay eight or nine months before they molt again, and it costs a good deal to bring a pullet up to laying age. Try feeding them all they can be induced to eat and see if they do not soon come back into laying form.

Ventilating Poultry House

An open front and slats in the gable are the only means of ventilating my poultry house which holds 1,000 hens. Lately I have noticed some colds in the flock. Can the slatted gable be responsible?—Mrs. J., Escondido.

Most poultry houses are ventilated by a window under the droppings board for summer use, as well as by the open front which is never closed, and [illegible]way along the front from sec[illegible]ion. If you cannot conve[illegible]ke a window under the d[illegible]oard you might leave the [illegible] gable but cover them for [illegible] with tar paper or burlap. [illegible]d winds blow a draft is quite [illegible] drop upon the heads of some [illegible]irds. They will get plenty of fre[illegible]air for the next six months if the gable is closed, and you can remove the covering when the weather demands it.

Determining Age of Hens

A year or so ago I saw in your paper that a professor in one of the Canadian experiment stations had perfected a method of telling the age of hens by the development of the wing feathers. I cannot now find the article and would be glad if you could repeat the information.—Subscriber, Santa Cruz.

We have been unable to find the information asked. It is often possible to distinguish between yearling and two year old hens by their general appearance. The plumage of the older bird is faded, if she is of a colored breed. She is heavier, unless she is a Mediterranean, and her comb and wattles lack the silky texture of a younger hen. It is much safer, however, to depend on numbered or colored bands, or, if the flock is large, on complete segregation, than on mere looks.

Portable Tarred-paper House
From Mrs. Koethen's "Poultry for Profit."

Toulouse Geese

Can you furnish me the names of breeders of Toulouse geese as near this locality as possible? I have the parents and nine young geese that were hatched in March of this year but cannot tell which are the ganders. Can you suggest any method? Would the eggs from these young geese be suitable for setting? If I am unable to secure a different gander would it be advisable to mate the parent gander with his offspring?—Subscriber, Los Olivos.

I have mailed you the names asked for. As the goose is not fully mature till three or four years of age it is not wise to attempt to breed from birds under two years old. Fertility is always poor and the young, if they do hatch, are likely to be weak and undersized. Weight and general behavior are the only distinguishing marks of sex in geese before they mature. The gander is generally heavier and has a hoarser voice. He also makes more noise. I have been told that only ganders hiss but do not know how true this is. A method used by English farmers to find out the sex of their young stock has been given be-

POULTRYMAN'S CALENDAR—DECEMBER, PREPARING TO HATCH

Anticipate the hatching season by having brooders and coops in readiness. Each one should be carefully cleaned, first with water, then with one of the coal tar disinfectants. Brooder houses should receive the most careful attention to make sure that their walls harbor neither vormin nor disease germs.

Breeders should be mated two weeks before eggs are to bo saved for hatching.

Considerable loss will be avoided if hatching eggs are not kept more than ten days. After this age the germ deteriorates rapidly.

Get in orders for eggs and chicks early. Pullets hatched before the first of April aro tho most profitable.

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For Sick Chickens

Preventive and curative of colds, roup, canker, swelled head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Galien, Mich., says: "Have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Vickerman, Rockdale, N. Y., says: "Have used Germozone 12 years; the best for bowel troubles I ever found." Frank Sluka, Chicago, Ill., writes: "I have lost but 1 pigeon and no chickens in the 3 yrs. I have been using Germozone." C. O. Petrain, Moline, Ill.: "I never had a sick chick all last season." Bernard Horuing, Kirksville, Mo., says: "Cured my pullets chicks this spring." Ralph Wurst, Erie, Pa., says: "Not a case of white diarrhoea in 3 yrs. I raise over a thousand a year." Good also for rabbits, birds, pet stock.

GERMOZONE is sold generally at drug and seed stores. Don't risk a substitute. We mail from Omaha postpaid in new 25c, 75c and $1.50 sizes. Poultry books free.

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fore in these columns but may perhaps be repeated. It is said they pen the young birds up with a dog. The females are frightened and try to get away, but the males stretch out their necks and hiss.

Chicken Lice in Barn

Our horse is in a shed next to our chicken house which opens into the stable. The opening is covered with wire netting. Is there any chance of his catching lice from the chickens?—Subscriber, Corning.

Yes, there is danger of the lice infesting the stable providing they are permitted to live in the poultry house. The only preventive is thorough disinfection and cleaning with sprays, whitewashes, etc., both the poultry house and the stable. If the horse is already infested relief should be given by disinfecting, washing or by using lice powder. Thorough application of buhach will afford relief.

RESULTS OF ALL NORTHWEST CONTEST

By Jean A. Koethen

The Third All Northwest Egg Laying Contest closed November 4, 1919. According to the announcement just published the hen laying the largest number of eggs in the 11 months of the contest laid 290 eggs. The record of the second hen was 278 eggs. Both these hens were White Leghorns. The third score was made by a Rhode Island White with 271 eggs.

The pen making the highest record was one of White Wyandottes, in which the five hens entered laid 1,211 eggs. The second and third pens were White Leghorns, the first laying a total of 1,202 eggs and the third 1,176 eggs.

The two Leghorn hens which made the highest record also laid the most valuable eggs, the value of the eggs being respectively $13.18 and $12.64. The third hen in actual value of eggs was not the R. I. White which took third place as a producer, but a White Wyandotte whose eggs were valued at $12.10.

The report gives no figures as to cost of a dozen eggs or the actual net profit. These figures will probably be given later.

CALIFORNIA EGG LAYING CONTEST STARTED

The 408 pullets entered at the California Farm Bureau Egg Contest started on their official test on the morning of November 16.

On account of the change in housing, feeding and other general care, and also in many cases climate, the hens are not up to their best for the first week, while many of the outside birds, those coming from other parts of the state, have been thrown into a molt. The Santa Cruz birds as a whole are doing the best due to having undergone the least change.

Highest records for the week are as follows:

Highest Pens

W. J. Neef, Santa Cruz, 35 eggs.
F. Stalling, Santa Cruz, 34 eggs.
Hollis Peck, Santa Cruz, 34 eggs.
C. T. Brown, Santa Cruz, 33 eggs.
C. K. Hale, Santa Cruz, 32 eggs.
Theo. Clark, Santa Cruz, 31 eggs.
B. F. Rose, Santa Cruz, 30 eggs.

Highest Hens

Warren Wood, Santa Cruz, Hen No. 225, 6 eggs.

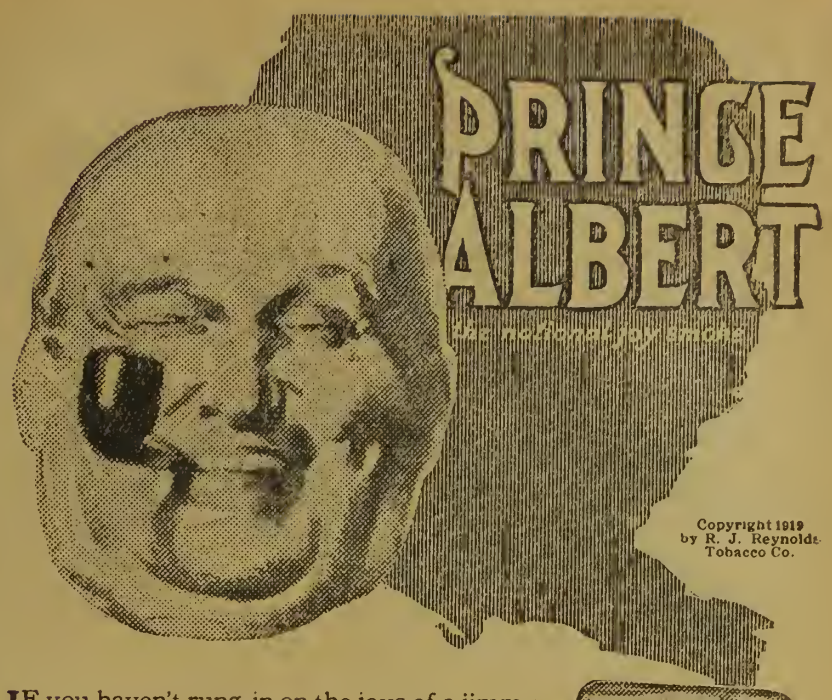
Hollis Peck, Santa Cruz, Hen No. 383, 6 eggs.

R. C. Gibson, Newhall, California, Hen No. 66, 6 eggs.

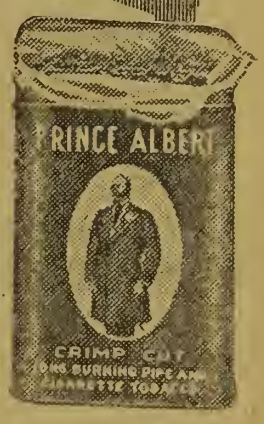
LOS ANGELES POULTRY SHOW

The premium list of the 22nd annual show of the Los Angeles Poultry Association, to be held December 7 to 13, has been issued and is now being mailed by Secretary W. H. Hocking of Los Angeles. Mr. Hocking writes regarding the judges who have been chosen:

In James Tucker, W. M. Coats and W. S. Russell we have the best trio of judges that ever officiated at a Western show. A blue ribbon under these judges will be something worth winning. We are offering this year more cash prizes and silver cups than were ever before offered at a Pacific Coast show.



IF you haven't rung-in on the joys of a jimmy pipe with Prince Albert for packing you certainly want to get introduced inside the next hour! Talk about a pal-party! Why, it's like having a pass on a park merry-go-round early in June!



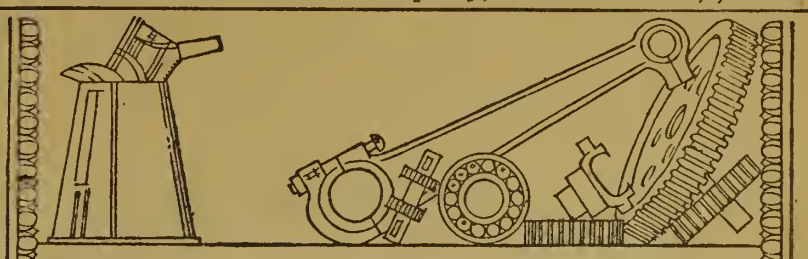
For, Prince Albert has brought pipes into their own—led *three men* to the utmost tobacco happiness where *one man* smoked a pipe before! P. A. has blazed the trail for thousands who figured they would have to do "Kitchen Police" on pipe smokes the rest of their lives! Thousands more have taken the tip to roll their own with Prince Albert!

So, climb into the P. A. pipe or makin's cigarette pastures and have a session! You'll soon get wise, all right, that Prince Albert never did bite the touchiest tongue in your township—and, it's a brace of aces against a two-spot that it never will fuss yours! Read on the reverse side of every Prince Albert package that P. A. is made by our exclusive process that *cuts out bite and parch!*

Give Prince Albert the speed-o taste-test and tongue-test *if you want to sing-smoke-songs-at-sunrise!*

Toppy red bags, tidy red tins, handsome pound and half-pound tin humidors—and—that classy, practical pound crystal glass humidor with sponge moistener top that keeps the tobacco in such perfect condition.

R. J. Reynolds Tobacco Company, Winston-Salem, N. C



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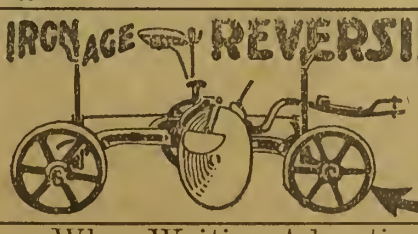

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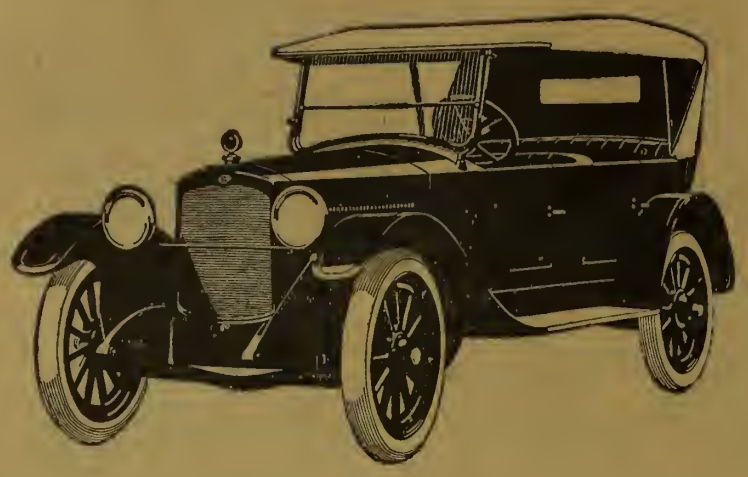

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There is a world of confidence back of our conviction that the Grant Six is the car you want. This confidence is based on the fact that it is built for your needs —built to serve you well.

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Its overhead valve motor is powerful, flexible and economical. It takes the car as fast as most men dare to drive.

And it is a fact that you can ride over country roads at better than ordinary speed with a Grant Six because its long springs, correct weight distribution and perfect balance keep it comfortable at speeds and on roads simply impossible for an ordinary car.

The Grant Six is easily handled, it is "light on its feet," and yet it has extraordinary strength and endurance.

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Standard Oil Company
(California)

Los Angeles Markets

Los Angeles, December 2, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 67 cents.

Dairy Exchange prices last week on extras:

Nov.	25	26	28	29	Dec. 1	2
'19 ...	67	67	67	67	67	67

CHEESE

Brokers' prices:
California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 77 dozen; case count, Produce Exchange closing price 66 dozen; pullets, Produce Exchange closing price 62 dozen; pewee pullets, 53.

Dairy Exchange prices last week on extras:

Nov.	25	26	28	29	Dec. 1	2
'19 ...	77	77	77	77	77	77

POULTRY

Prices to producers: Hens, lt. 32; heavy, 33; colored over 4 lbs., 33; broilers, 44; fryers, 38, roasters, 29; old roosters, 19; ducks, old, 23; ducklings, 30; ducklings, Pekins, 3½ up, 33; geese, 25; turkeys, live, young tom, 37; dr., 43; old, live, 35; dr., hen turkeys, live, 35; dr., 41; squabs, 45@47.

Belgian hares, 3 to 3½ lbs. live, 17.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock December 1, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate. New stock—Stockton: Burbanks, fancy, 3.55@3.90 per cwt.; choice, 3.35@3.50; Salinas: Burbanks, sacked, per cwt., fancy, 3.75@4.00; Russets, 3.25@3.60, few 3.25. Local: Lug boxes, mostly 1.25.

Carlot sales: Closing prices Monday, demand and movement improving, market stronger, prices higher. Stockton: Burbanks, sacked per 100 lbs., fancy, wide range in prices, 3.10@3.35, mostly 3.15@3.25; choice 2.75@3.00; poorer, low as 2.50; special brands 3.50. Idaho Russets, no sales reported. Washington: Netted Gems, sacked per 100 lbs., fancy 3.20. (Sales to 5 p. m. Monday.)

Sweet potatoes: Market dull, supplies increasing. Lugs 90@1.00; per cwt. 2.75@2.85.

Carlots: Demand slow, movement moderate, market steady. Per cwt., 2.10@2.15, few fancy in mixed cars, 2.25@2.50.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, lug 1.25@1.40; cwt., 4.50@5.00, some low as 4.00. Yellows and browns mostly 5.00; lug boxes, White Globes 1.25@1.40, few 1.10; yellows, 1.50@1.60; yellows and whites, in boxes and lugs, fancy 5 per lb.

FRUITS

These are the actual prices obtained December 1, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California: 4-tier, Bellefleur, 1.85@2.00, mostly 1.85@1.90; 3½@4½ tiers, 1.75@1.85; loose 4@4¼ lb. Glen Seedlings 2.25@2.75 box; Delicious, loose 5@6 lb.; Baldwins 4@5; Newton Pippins 4@5; Pearmains 4. Northern: Jonathans, extra fancy 3.25@3.50; fancy 3.00@3.10; choice 2.50@2.60; loose 6@7 lb.; Spitzenburgs, extra fancy 3.25@3.50; fancy 3.00@3.10; per lb., 6½@7; Delicious, boxes, 3.50@4.00; Ben Davis, lb., 5; Ganos, 6@7; Pippins 6.

Bananas, 8½@9.

Coconut, doz., 2.75.

Cranberries: Barrels, 16.00; boxes, mostly 5.00; lb., 16@17½.

Grapes: Local and northern, per lb. Tokays, 13@15; Malagas, 13@14; Black Cornichons, 13@14; Red Emperors, wide range, 9@14.

Pears: Northern Bartletts, No. 1, 8@9; No. 2's, 4@6 per lb.; lug boxes, 2.00@2.50; best packed boxes, 3.25@3.50.

Persimmons, lb., 8@15; mostly 12@14.

Pineapples, lb. 19@20.

Pomegranates, lb., 6½@9.

Quinces: Local lug, 1.10@1.35; lb., 4@5.

Lemons: Fancy packed, 4.50@4.75; loose, 3.50@4.00; juice, 2.50. Local: Packed, 3.50@4.00; best, 4.00@5.00; loose, 3.00@3.25.

Oranges: Valencias, medium fancy 4.00@5.00; Navels, box, 5.00@5.50; local pack, 2.50@3.75; Ariz. fy., 150's-176's bx. 6.00.

Grapefruit: Arizona: Seedless, per box, 3.50@4.00; Cal. bx., 4.00@4.25; poorer 3.75; lug 1.75.

GRAIN AND FEEDS

Price bid local grain exchange, December 2:

Oats, Eastern, 2.90@3.00.
Oats, Cal. seed, 3.18¾.
Oats, Eastern White, 2.90@3.00.
Corn, Yellow, 3.45@3.50.
Egyptian, 3.47½.
Kafir, Eastern, 2.95.
Feterita, 3.30.
Hygeria, 3.12½.
Eastern Milo, 2.82@2.86.
Cottonseed meal, 65.00.
Wheat, 4.50@5.00.
Alfalfa molasses, 32.50.
Alfalfa meal, 30.50.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	21.00@24.00
Barley	17.00@22.00
Alfalfa	20.00@25.00
Fertilizer Bean Straw	9.00@11.00
Barley Straw	9.00@11.00

San Francisco Markets

San Francisco, December 1, 1919.

BUTTER

Prices made daily by the San Francisco Wholesale Dairy Produce Exchange are the prices paid by retailers to wholesalers. The prices paid by wholesalers to producers are 1c cent less.

Produce Exchange quotations, lb.:

Firsts 68

Prices extras last week and year ago:

Nov.	24	25	26	28	29	Dec. 1
'19 ...	68	67½	67	67½	68	68
'18 ...	..	62	62	62	62	..

Rcts. ending Nov. 29, 2,263 centals.

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 91½
Extra, pullets 75
Undersized 68

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago:

Nov.	24	25	26	28	29	Dec. 1
'19 ...	88	91½	84½	87	89	91½
'18 ...	..	79½	79½	81	81	..

Rcts. ending Nov. 29, 130,770.

Eggs are going East in carlots from S. F. and points of production raising prices on local market.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10½@11; do, 1,200 to 1,400 lbs., 10@10½; do, second quality, 8½@9; do, thin, 6½@7½.

Bulls and stags: Good, 5@6½; fair, 4@5½; thin, 3@4½.

Cows and heifers: No. 1, 8½@9; second quality, 7@7½; common to thin, 4½@6.

Calves: Light weight, 11; medium, 10; heavy, 8@9.

Lambs: Yearlings, 10; milk, 12@12½.

Sheep: Wethers, 9@9¼; ewes, 6½@7.

Hogs: Hard, grain-fed, 100 to 150 lbs., 14¼; 150 to 225 lbs., 15; 225 to 300 lbs., 14½; 300 to 400 lbs., 13½.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs., Rivers, fancy 2.90@3.00; choice, 2.75@2.90; Oregon Gems, 3.45@3.60; Salinas, 3.50; Sweets, lb., 3½@4.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 4.25@4.50; choice 3.75@4.00; Yellow, 3.75@4.00; Whites, 3.50; Garlic, lb., 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 15@20; Lima, 12½@15.
Carrots, per sack, 1.00@1.25.
Cauliflower, doz., 1.25@1.45.
Cabbage, doz. 40@55.
Celery, doz., 25@40.
Cucumbers: Per box, 90@1.50; hothouse, 2.25@2.50.
Eggplant, lb., 10@15.
Lettuce, cr. of 3 doz., 1.25.
Peppers, Bell, lb., 10@12½; Chili, lb., 8@10.
Peas, lb., 12½@18.
Pumpkins, per sack, 75@1.25.
Radish, 7@9 doz. bunches.
Tomatoes: Sacramento River, 1.00@1.50; L. A. cr., 1.75@2.00.
Squash: Summer, bx., 1.50@2.25; Hubbard, sk., 1.25@1.50.
Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:

Apples: Bellflowers, 1.75@2.25; Winter Bananas, 2.50@3.00; Newton Pippins, 2.15@2.50; Jonathans, 2.50@3.00; Spitzenburg, 2.50@3.00 ch.; fy., 3.00@3.50.
Avocados, small California, doz., 75@2.00.
Bananas, 8½@10.
Cranberries, 5.00@5.50 per standard box; barrel, 15.00@18.00.
Figs, double or single layer, 1.00@1.50 box.
Grapes: Malaga, 2.00@2.50 per box. Muscats, 2.00@2.50; Tokays, 1.25@2.50; Isabellas, 1.25@1.75 per crate.
Huckleberries, lb., 20@24.
Pears, box, 1.50@3.00.
Persimmons, box, 1.75@2.50.
Plums, 1.00@2.00.
Pineapples, doz., 4.50@5.00.
Pomegranates, 1.75@2.00.
Quinces, box, 75@1.50.
Strawberries, ch., 12.00@15.00.

HONEY

Jobbing prices: Extracted, Water White and White, 20@21 lb.; light Amber, 14@16; Amber, 13@14; Comb, 28@30 for White and Water White and 25@28 Light Amber.

HOPS

1919 contracts per lb. around 75@90.

BEANS, PEAS

Jobbing price per cental:

Beans: Small white, 6.50@6.75; large white, 6.25@6.50; cranberry, 7.50@8.00, red Mexican, 6.50@7.00; pink, 6.25@6.50; California Bayou, 9.00@9.50; blackeye, 6.00@6.50; red kidney, 12.00@13.00; Lima, 13.75@14.25; Garvanza, 9.50@10.50; Kotenashi (in bond), 5.35.

Dried Peas: California, 6.50@7.00 per cental for green, recleaned.

RICE

Prices per 100 lb. bag:

California: Fy., 10.50; ch., 10.25; flour, 6.25.

GRAIN

Wheat: The prices are based upon federal grades and standards at the terminals in San Francisco Bay and Los Angeles, and are as follows, per bushel of 60 pounds:

Hard White—	Per Bushel	Per Cental
No. 1	$2.20	$3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.13	$3.63 1-3
No. 2	2.15	3.58 1-3

No. 3	2.11	3.51½
Club and Sonora—		
No. 1	$2.	$3.00
No. 2	2.13	3.55
No. 3	2.09	3.48½

The above are minimum prices.

For sacked grain add 4½ cents per bushel of 60 pounds to above prices. Deductions of three-fourths of a pound made for weight of standard grain bags. Wheat grading under No. 3 mixed or smutty wheat will be purchased according to merit.

Oats: Red feed, 3.05@3.10; black, 3.15 @3.25.

Corn: California yellow, 3.00@3.10 per cental; Egyptian, 3.50@3.60; milo maize, 3.20@3.30.

Rye: 3.30@3.40.

Barley: Spot feed, per cental, 3.40@ 3.50; brewing, 3.55@3.60.

HAY

Fancy Wheat Hay (light 5 wire bales)	24.00@26.00
No. 1 Wheat or Wheat and Oat Hay	21.00@25.00
No. 2 Wheat or Wheat and Oat Hay	20.00@22.00
Choice Tame Oat Hay	23.00@26.00
Other Tame Oat Hay	20.00@23.00
Wild Oat Hay	19.00@22.00
Barley Hay	19.00@23.00
Alfalfa Hay	21.00@26.00
Stock Hay	16.00@19.00
No. 1 Barley Straw, bale	.50@ .80

Citrus Markets

Los Angeles, December 3, 1919.

Valencias are still meeting good demand in Eastern markets, Tulare Navels not being as much in demand as growers had expected. Shortage of refrigerator cars continues but the railroads promise a larger supply for coming shipments. Butte County sent out its first Navels on November 5, fruit reported sweet and of fine quality. Thermometer last week dropped as low as 25 in some citrus districts but no damage was reported as the thermometer only remained down for a short time.

Lemons have been running to small sizes. Foreign lemons also show the same tendency. Foreigns are averaging $1.85.

Shipments

Shipment of oranges from Southern California to date since November 1, 1919: Oranges, 2,168 cars; lemons, 379; total, 2,547. To same date last season: Oranges, 128; lemons, 594; total, 722. Central California: Oranges, 1,023; lemons, 70; total, 1,093. To same date last season: Oranges, 1,383; lemons, 145; total, 1,528. Northern California: Oranges, 105; lemons, 1; total, 106. To same date last season: Oranges, 57.

NORTHERN VEGETABLE GARDEN

Continued from Page 757.

and thin a few weeks after they are well above the ground to about four inches apart. The soil should never be allowed to get dry or the hulb will quickly go to seed before it has properly matured.

Asparagus and Rhubarb

We advised getting the ground ready last month for these crops, and we can recommend the following if strong roots are procured: Asparagus palmetto, quite the earliest and best yielder we know of, which to the market grower especially means something; for the home garden, we plant Conover's Colossal, which is very tender. Plant the roots, which should be well spread in trenches, six inches below the level of bed. Plant in rows three feet apart. Rhubarb may be treated in much the same way, the best varieties being Wyatt's Victoria and Crimson Winter, the last named being very popular, hardy and prolific, producing as it does throughout the whole season. These crops need plenty of moisture.

Spinach

This crop should be more generally grown, especially the type known as New Zealand, which can be cut very frequently and is of creeping hahit. Prickly or fall spinach is also a hardy variety. Seeds may be sown at once on well manured soil. Sow in rows 12 to 16 inches apart.

Lettuce

Thin out and transplant those sown last month to five or six inches apart and keep plot well cultivated.

Peas

The early varieties of these should be showing well through the ground and need watching as the birds quickly destroy the young tender shoots. Another sowing may be made for succession of varieties mentioned last month such as Blue Bantam and Little Marvel. To discourage the birds spray or dust with lead arsenate. Choose a warm situation for this crop if you desire early peas.

Turnips and Kohl Rabi

Both these are useful crops and supply a change for the menu. It is essential that they should be quickly grown and this necessitates plenty of moisture. If they are allowed to get dry while in active growth they become woody. Best varieties for sowing now are Early Snowball and Purple Top turnip. Sow in drills 12 to 18 inches apart. The best kohl rabi, which is a turnip rooted cabbage, is Early White. Sow in drills 18 inches apart.

WEATHER REPORT

San Francisco, California, November 29, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.41	4.00	9.36	54	34
Red Bluff	.00	1.06	5.44	80	30
Sacramento	.00	.72	3.48	70	34
San Francisco	.00	.66	3.95	68	38
San Jose	.01	.58	3.08	72	34
Fresno	.02	.60	1.98	74	30
San Luis Obispo	.10	.64	3.46	82	26
Los Angeles	.46	2.31	2.24	78	36
San Diego	.42	1.73	1.32	72	38

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Screws that are hardened and tempered, each one polished on the top—screws that are perfect in sphericity, perfect in thread, perfect for their place in the mechanism of that ladies' Waltham watch movement, which, when completed, is actually smaller in diameter than a dime—a ten cent piece.

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No human hand could ever match the quantity and quality performance of machinery that creates such miracles as these.

This is one more of the many reasons why the world's leading horologists came to Waltham for time, and still another reason why your selection should emphatically be a Waltham.

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The movement is actually smaller than a dime in diameter
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Originated by Agricultural Experts
Compounded under direct supervision of careful and capable chemists

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Arsenical Compounds — Bordeaux

Send for Descriptive Bulletins

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GIVE your family a Christmas gift of "smooth roads" this year. Give them the new Overland 4 with Three-Point Suspension Springs, the greatest riding improvement since pneumatic tires. The Three-Point Springs dissipate jolts and reduce sway and vibration to a minimum. They make riding on any road smoother and more enjoyable.

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Its equipment is carefully selected and complete from Auto-Lite Starting and Lighting System to Rain-Vision Windshield.

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

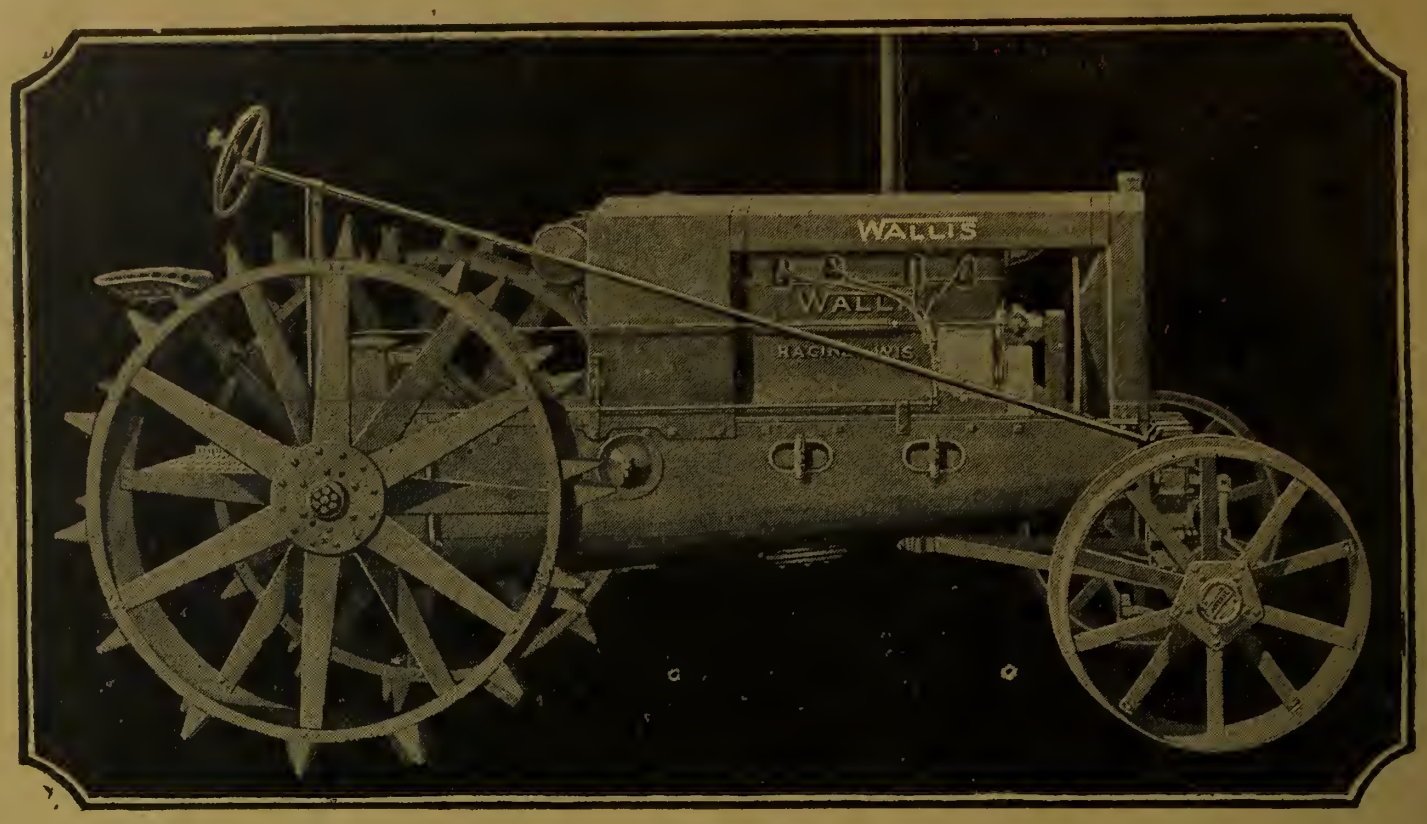
Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — December 13, 1919 — No. 24

A Sacramento Valley Olive Orchard

When the Cultivator camera got busy in the foothills above Oroville at the time of the recent fruit growers' convention. Convention attendants are sampling the Mt. Ida mineral spring. In the background are the Mt. Ida olive groves which we were told have yielded as high as six tons of olives per acre. As to production, however, Manager Meek writes:

"This old orchard has averaged an annual production of about four and one-quarter tons of olives per acre for the past nine years. The yield is practically uniform from year to year and the fruits run to very large sizes."



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THE most important thing you can buy in a tractor is long life. A tractor must *stand up* to be a profitable investment. Only by serving faithfully year after year can it prove a definite economy.

In the Wallis—America's Foremost Tractor—durability is an established fact. Over 12 years of experience has proved that the Wallis principle of combining power, light weight, simplicity and durability is the one outstanding tractor achievement of the day.

In this remarkable tractor many original ideas have been proven. We now know that heavy weight and bulk are not essential to great power and long life! That tractor efficiency and long life depend largely upon the quality and finishing of the vital wearing parts—the gears—the bearings—the transmission—the combustion chambers, etc.

Wallis has *proved* that the gruelling strains a tractor must withstand demands even finer materials, finer workmanship and more accurate machining than a motor car.

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And these are some of the reasons why Wallis service is constant—why owners have utmost faith in its performance—its dependability—economy and long life.

Naturally Wallis durability, combined with its tremendous power, light weight and simplified construction, results in a new standard of economy. Everywhere the Wallis has established remarkable records in "low-cost-per-acre"—and in "low-cost-per-year-of-service." These are the true tests of tractor economy.

If you are tractor buying, the Wallis deserves your interest. Not alone because it is America's Foremost Tractor but chiefly because it offers you *power*, *durability* and *economy*, which are the factors absolutely essential to a profitable tractor investment.

The demand for Wallis Tractors is naturally great. Our capacity is taxed. It is not too early *now* to order for Spring delivery. See the Wallis dealer or write us for literature without delay.

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Notice—We want the public to know that this is not the tractor made by the J. I. Case Threshing Machine Co., Racine, Wis.

California Cultivator

Vol. LIII, No. 24 Los Angeles, December 13, 1919 One Dollar Yearly

Spraying Demonstration

By C. B. Messenger

PERHAPS one may be permitted to ask: "Why a spraying demonstration in California; have not its benefits been proven and accepted by every orchardist?" One word of two letters answers that question completely, and that word is "No."

To the one who goes to the fair or to the chamber of commerce display to gather his information as to products of the state this answer may seem to need qualification. But the best way to get the information is to go into some of the orchards, and the second best is to walk with the standardization inspector of the county horticultural commission as he makes his rounds of the market. Some of the stuff one of these inspectors gathers in was exhibited at the recent state fair—fair and beautiful to look upon as to the upper layer of Muscat grapes, but within there was a mass of mealybug and excretions.

But worse than all are the apples, full of worms and—contrary to law—repeatedly sold. And in this year 1919 there are still growers who say: "Spraying will not control the worm." To which the inspector and the up-to-date dealers reply, "O pshaw!"

At the recent county farm bureau spraying demonstration at Downey, Los Angeles County, Mr. Bissell said: "Three sprayings of apple trees; at time of first dropping of petals, another in ten days, and a third three weeks later have given me apples 100 per cent worm free." And some Downey people, apple growers, did not believe it. But we can assure them that Mr. Bissell's experience is that of many another apple and pear grower. There are sections, however, where the three sprayings may not be sufficient. But the few months between now and blossoming time should be occupied by the apple grower, at least as to his evenings or other spare time, with planning for producing fruit 100 per cent marketable. And one incentive to that should be the fact that the state law permits only three per cent of wormy fruit.

This demonstration was not intended, however, to call attention to the wormy apple question so much as to that of peach blight or shothole fungus. This is the time of year to handle those troubles. However, it is also the time of the year to call attention to the apples in market. The activity of the inspectors has largely shut this wormy stuff out from the city markets. Some growers have thought they had entire right to offer these apples rejected by the city markets, or at least by the commissioner's inspector, at their own gates or by the roadside. Hence, hundreds of roadside stands offer the lower grade apples. But the county commissioners have given warning that such wormy apples or apples infested with scales or other insects must not be offered for sale excepting to be used as by-products.

For the demonstration H. Koopman with a power machine showed how to quickly and satisfactorily spray peach trees, apricot trees, or others which might be affected with the shothole fungus or blight. In order to give greater effect to the demonstration blocks of trees were sprayed and others adjoining were left unsprayed, and the orchardist has consented to permit these trees to remain unsprayed to show any difference there may be between the two blocks.

In the evening the apple fruit growers gathered at Downey and addresses were made by Adviser Hodgson, County Commissioner Ryan and Avery S. Hoyt at the head of the standardization service of the state department of agriculture.

A Horrible Example

We wish this photograph gave more clearly the actual condition of the peach orchard as seen by the Cultivator photographer when he leaned over the barbed wire fence by the road and took this view. We will not locate it for it is not to the credit of any county or section of the state. Peaches this year commanded around five cents per pound. We did not see the fruit which came from these trees, but we venture it was not in the five cent class for there was a mass of it; nearly every tree in the orchard was broken and distorted; no pruning, no thinning, no spraying, not even the keeping down of weeds to aid nature in the production of the earth's finest fruit. Well wishers of the state are thankful that this orchard is the exception.

A Spraying Demonstration

The upper picture shows the preliminaries of the demonstration. Adviser Hodgson is making address as to the advisability, even the necessity, of protecting the trees from their enemies. Lower picture shows H. Koopman giving the practical side of the demonstration with a new spray gun. The power pump in the background is busily at work all by itself while the sprayer with one of the newly introduced spray guns is able to reach the topmost twig without the long spray rod formerly thought necessary.

Certified Seed Potatoes

By Ernest Braunton

A VISIT to the leading seed houses reveals the belief of all interested that certified seed potatoes will some day be the only kind offered for planting. But they were unanimous in saying there is no such stock to be had this year, and some were loud in their denunciation of the practices of the past. Said one prominent seedsman of Los Angeles: "Last year we received 90 sacks of so-called certified seed from a dealer in Blankville, a town in a potato growing section, for which we paid $1 a sack extra because they were certified. They were the poorest potatoes we handled that year and were at least 20 per cent scabby. The certified business thus far has been a joke and better control must be had if good results are to follow."

This firm has just received a half carload of Red Rose from the north and the senior member just qoted said none could be better, even if certified. Their great call is for White Rose, Red Rose, American Wonder, a few British Queen, Burbank and Irish Cobbler. In parting he said: "I am for certification if it really certifies, for that puts the potato business on the right track."

Another senior member of a leading house said: "Certifying is a good thing, no question about it at all, but we can get no such seed at present, and when shall we? Many inspectors will be needed to look after this work, for each field must be inspected three times each season and there is no force available for such a gigantic undertaking. The work is along the right lines but will we ever be able to get enough certified seed to meet the needs of the potato growers? I think not."

E. A. Aggeler of Aggeler & Musser stated he believed the California potato law should be changed; it differs somewhat from that of Oregon and other states. As it is now, certified seed must range from two to twelve ounces. In case of a grower who has an excess of potatoes heavier than 12 ounces it shuts his product out of certification, though he may have the best stock in the state. Mr. Aggeler would remove the maximum weight entirely. He also believes the first inspection to be unnecessary and inadvisable because it is expensive, accomplishes nothing and often works a hardship. The potatoes are inspected first before planting to note if they are pure and have been dipped. Dipping is advised by all as a safeguard, but if the seed is impure the variation of flowers will show it at the second inspection, which is made at blooming time, and if they are diseased the

Continued on Page 802.

Agricultural News Notes of the Pacific Coast

Northern California

A cat show will be held in San Francisco December 12-15.

Orland, Glenn County, will ship 12 carloads of oranges this season.

The Olinda, Shasta County, district reports a fine olive crop this year.

A new 700 acre dairy farm has been started near Redding, Shasta County.

An 11 acre prune orchard four years old, near Colusa, sold for $1,000 an acre.

Oroville, Butte County, has received a cargo of 80,000 silk worms from Italy.

Sacramento Valley rice has jumped to $6.30 per hundred pounds for fancy No. 1.

The Housewives League of San Francisco has placed a boycott on 17 cent bread.

The Cotati district of Sonoma County will grow 800 acres of sugar beets as an experiment.

The production of vegetables in the Sacramento-Stockton district is fully double that of 1918.

Butte County hop growers have closed contracts for the next three years' crops at 36 cents.

The Indian Valley, near Greenville, Plumas County, is becoming famous as a beef steer section.

The Butte County Exposition Association, recently organized, will perpetuate the county fairs.

Lady apples shipped from Coloma, El Dorado County, to San Francisco, brought $4.25 per pear box.

Grass Valley, Nevada County, reports cattle losses will be heavy unless relieved by immediate rains.

The 200,000 acre Pearson ranch in Colusa County has been sold for $400,000 and will continue in rice crops.

Butte County farmers are holding meetings to boost the county good roads bond election on December 16.

The first carload of dried apples from Dutch Flat, Placer County, brought $5,760 in the car at shipping point.

A tract of 8,000 acres near Williams, Colusa County, will be irrigated through building a canal six miles long.

A new highway will be built on the bank of the Sacramento River, from Sacramento to Corning, Tehama County.

Of the wine grapes sent East from the Sacramento Valley, the Alicantes were the most popular, bringing the highest prices.

Alameda, San Francisco and Santa Clara Counties will combine in the 1919 enforcement of the apple standardization law.

A community cannery is planned for Orland, Glenn County, and will be erected at once, 2,000 tons of peaches being the 1920 outlook.

Former Congressman Kent has given a beautiful tract of woodland facing on Lake Tahoe to the forest service for a public camp and playground.

Sixty thousand acres of land in the Sutter basin will be devoted to the exclusive production of vegetables for Eastern shipment. All Japanese are barred.

One of the most extensive rice growers in Colusa County says the best variety of rice is Aikuku which is two weeks earlier than the standard variety Wateribune.

Central California

Lodi is having a big tractor demonstration, December 1-13.

The Stockton city council has prohibited bees being kept in that city.

Heavy snows in Central California have put out all the mountain forest fires.

A woman at Lindsay, Tulare County, picked 93 boxes of oranges in eight hours.

Lindsay, Tulare County, shipped over 350 cars of oranges to December 1.

A cotton gin at Tulare is talked of, Tulare cotton now being ginned at Fresno.

Oakdale, Stanislaus County, will pave all the streets in the business district.

Citrus pruning and lectures by Dr. Coit will begin in Tulare County, December 15.

Six cars of hogs auctioned at Tulare last week ranged in price from $12 to $15.30.

The high price at the last hog sale at Modesto, Stanislaus County, was $14.65 per hundred.

Merced tomato growers have organized under the name Merced Growers Packing Association.

Kingsburg, Fresno County, ranchers have signed 9,000 acres in ownership asking for an irrigation district.

San Joaquin County produced 56 per cent of the corn grown in California in 1919, or 5,000 to 7,000 acres.

Pomegranates from Springville, Tulare County, sold in Eastern markets for $2.45 to $2.93 for half boxes of 35.

The Terra Bella Citrus Association of Tulare County shipped its first carload of oranges on Thanksgiving Day.

School lands totaling 1,700 acres were sold at Visalia, Tulare County, recently for an average of $15.60 an acre.

Farm bureau meetings in San Joaquin County will be as follows: Escalon, December 15; Ripon, 18; Manteca, 19; Live Oak, 22.

City Clerk Halbert of Porterville, Tulare County, announces that there are no Japanese in that city nor in the country surrounding it.

Dr. J. Eliot Coit of the University of California will hold citrus pruning demonstrations in the San Joaquin Valley this week, beginning December 15.

Ranchers in the Lynn district of San Luis Obispo are turning hogs out to eat acorns for the first time. In former years the squirrels ate them, but the 1919 poison campaign killed them all.

Following close on a completed contract for 17,000 pounds of dressed turkeys for the army, a Tulare provision company has landed a navy contract for 25,000 more of the birds, which must weigh 12 pounds or over and be young toms. On the first contract the company paid poultry ranchers 35 cents per pound for the turkeys.

Picking of cotton on the Tagus ranch, six miles north of Tulare, is about finished and from the 860 acres there will be at least 1,000 bales. This is the first big acreage of cotton to be grown in Tulare County and the ranch owners are so well pleased that they are planning to install their own gin on the ranch.

Southern California

El Centro is to have a federal postoffice building.

Perris is to have a cotton field of 400 acres next spring.

Riverside County received .14 inches of rain on November 27.

There are 19,500 milch cows in the Imperial Valley and 665 dairies.

Staple cotton sold in Blythe, Riverside County, last week for $45.50.

The usual rose tournament at Pasadena will be held on New Year's.

On November 24 nearly an inch of rain fell at Brawley, Imperial County.

An acre of seed cotton at Blythe yielded 2,800 pounds at first picking.

The first grapefruit from the Imperial Valley was shipped November 20.

A university tractor short course will be given in Riverside, February 23-28.

Idyllwild, a mountain resort in Riverside County, reports ten inches of snow.

The rain of November 26-27 brought Highland, San Bernardino County, 2.40 inches.

Fullerton and Anaheim, in Orange County, will build a joint outfall sewer to the sea.

At Smeltzer in Los Angeles County a new patent beet topper is working successfully.

Ventura County officers found a genuine Kentucky still in the mountains near Fillmore.

Yucaipa, San Bernardino County, reports the first snowstorm in 40 years on November 27.

Frank W. Walton, Alamitos, Orange County, has 121 varieties of fruits in a home orchard.

The flour mill at Olive, Orange County, has been rebuilt to a capacity of 300 barrels a day.

Riverside has dispensed with the services of a tree warden for the first time in a dozen years.

Heavy rains in late November did much damage to roads in Imperial and Coachella Valleys.

The Anaheim Orange and Lemon Association closed the season after shipments of 1,450 cars.

A carload of pure bred Jersey cattle from Kansas has arrived at the Wherrel Ranch near Riverside.

The packing house at Beaumont, Riverside County, handled 40,000 boxes of apples this season.

Riverside reports many fruit growers attending the university short course at Davis, December 8-20.

Goleta has shipped nearly 100 cars of walnuts and Carpinteria 15 cars, both towns in Santa Barbara County.

An acre of dates will be planted on the Palo Verde Rancho. Imperial Valley, conditions being considered ideal.

A beekeeping course under Prof. T. F. Hunt of the University of California is in full swing at Riverside for the full week.

The first freight train on the new San Diego and Arizona railway went out from San Diego, December 2, being 20 cars of eatables.

Dr. J. C. Whitten notified Yucaipa apple growers that splitting or cracking of Stayman Winesaps occurred on young trees only and would not continue.

The Coast and General

Chandler, Arizona, is to have a civic center.

Near Odell, Oregon, walnut trees yielded $25 worth of nuts each.

Thanksgiving turkeys at Yuma, Arizona, brought 60 cents a pound.

The Western Potato Show will be held in Denver some time in January.

Premont, Texas, is making preparations to hold a West Texas Orange Fair.

Cattle sales, for beef, totaled $200,000 in Jackson County, Oregon, during 1919.

One nine year old Winesap tree at Prosser, Washington, yielded 39 boxes of apples.

The cotton crop of the great Southwest for 1919 will have a value of $43,380,000.

The Oregon penitentiary harvested the flax crop for the farmers of Marion County.

Mexican crops, especially corn and beans, are very poor as a result of heavy rains.

Phoenix, Arizona, experienced its first snow storm in many years on November 28.

The National Wool Growers Association will meet in Salt Lake City, January 19-21.

In the northern part of Utah the recent snowfall was the heaviest ever recorded there.

Chandler, Arizona, is to have a new $60,000 cotton gin to replace the one recently burned.

Moses Lake, Washington, a wheat district formerly, shipped 250 cars of fruit this season.

The Walla Walla, Washington, district has this year harvested 10,000 tons of sugar beets.

Heavy rains interfered with orange picking in Arizona, but the first car went eastward November 23.

The West Texas Midwinter Orange Fair will be held at Premont, Jim Wells County, December 22-25.

Berry growers at Estacada, Oregon, report returns from all berries average from $800 to $1,000 an acre.

Girls' canning teams have been organized by the University of Arizona and some interesting contests held.

Fruit and potato growers from five Western states met in convention at Spokane, Washington, December 1-5.

From one nine year old tree f Winesaps 39 marketable boxes of apples were picked at Prosser, Washington.

A visitor from Egypt who has grown cotton told the Yuma Sun that Arizona and California grow better cotton than Egypt.

Four hundred cotton pickers getting three cents a pound struck near Chandler, Arizona, for higher pay, but were refused.

Unusually heavy rains during the last third of November have made fine stock feed on the Arizona-New Mexico ranges.

Farmers in Swan Valley, Oregon, are solving the irrigation problem through boring numerous wells with splendid results.

The California Packing Corporation at Dallas, Oregon, has shipped 4,000 boxes of 25 pounds each of prunes direct to England.

Now is the Time to Act on the Japanese Question

"WATCHFUL waiting" seems to be the policy in administration circles as to the alien land ownership question in California. It is possible the proper time has not yet come to handle this question as it should be handled, but if it be an evil that lands which we as a state and as a nation had hoped would be occupied by American homes to strengthen our government in time of peace and in time of war are being taken up by those who never will make of them American homes, it appeals to us that it is time to act and act effectively. Land owners approached by American men and women who wish to make American homes on their lands, are confronted by the fact that there are alien people here whose habits are such that they will pay longer rental prices for the use of the lands—$50 per acre is not uncommon—and naturally the land owners hesitate to sell their lands at reasonable producing prices when they can get these excessive rents.

The section of the state where this evil has been most pronounced is the Imperial Valley. At the recent celebration of the opening of the Arizona-California railway Governor Stephens delivered an address on the Japanese question. He said:

"In that remarkably fertile valley there is arising today, as in other parts of California, a problem that must enlist our attention. An alien race threatens, as elsewhere in our state, to supplant the American citizen. I speak of this as a question to be dealt with thoughtfully and intelligently. The proper time has not yet come for our state to undertake a solution, but when that time arrives we must be prepared to take just and effective measures, not in a spirit of mean race prejudice, but on the broader lines that will easily convince all of our fellow men beyond the Rockies of the justness of our cause and of the menace that confronts us. There are certain international aspects that must be borne in mind, and we must act with deliberation. If California's attitude is to be presented in the miserable spirit of agitation developed by political candidacies to gain popular favor, then we shall fail of a correct solution. We must have in mind the United States supreme court and the federal government, for we are a constituent and loyal part of that government. We shall proceed judiciously and effectively in this matter, and under no consideration must we be led into any precipitate and unwise course of procedure.

"I make these observations because those of you who have come from the Imperial Valley I know to be greatly interested in this problem. You see it in acute form. The people of San Diego are also interested, and I am availing myself of this opportunity to call your attention to the need of prepared and verified information and of careful study and deliberation."

We fully agree with the governor that this is a question which "must enlist our attention." We recognize the fact that "an alien race threatens to supplant the American citizen." We agree that the question must be "dealt with thoughtfully and intelligently," and when the time arrives we must "take just and effective measures, not in a spirit of mean race prejudice"; also that there may be "international aspects that must be borne in mind"; also that California's attitude should not show "a spirit of agitation developed by political candidacies." It is also a pleasure to know that "We shall proceed judiciously and effectively, and under no consideration must we be rushed into precipitate and unwise course."

More Views of Press and People

We have yet to see any marked case of race prejudice. American farmers have seen the home site value of their lands practically destroyed; producers have found Orientals' truck products in the market at a lower price than they could possibly grow them for; yet, as we say, there has been no serious manifestation of race prejudice. But these producers upon whom these losses have been forced are seriously asking: "Why are we not given relief?"

Possibly the time has not yet come, and as "watchful waiting" has been the policy in some other international matters, are we to expect that the present problem will require as long an educational campaign as these other problems? If so, the producers of California have many years facing them while waiting for relief.

Will they wait and be perfectly patient in the waiting?

Again, if the evil is here, is it not time to act? Wherein is the possibility of its becoming any easier of settlement?

> **Unless drastic measures are taken at once by both federal and state authorities to dam the onrushing flood, the fair complexion of California during the next decade will have taken on a yellow tinge which will never be erased.—McClatchy.**

There have been some local efforts which may accomplish good for particular communities. On the other hand, there is great danger of that which the administration has been so anxious to avoid, race clash. For example, in Stanislaus County we note in the Modesto Herald:

"A stringent and effective boycott of Japanese in Stanislaus County was outlined at a largely attended meeting of the board of trade Monday night in pursuance of the campaign initiated by the Turlock board of trade to stop the spread of the Orientals in this state. Steps were also taken to make the movement national in scope and to secure the aid of congress in combating the yellow peril.

"The motion, carried by unanimous vote of the board following an extended discussion of the situation, was made by G. F. Pendergraft, vice-president of the Turlock body, as follows: 'That the county board of trade go on record against Japanese immigration and convey its stand to every land owner in Stanislaus County, accompanying the resolution adopted against the Japanese with a letter giving statistics on the situation both here and elsewhere.'

"Secretary George T. McCabe of the county board was also instructed to communicate with the local posts of the American Legion and the Veterans of Foreign Wars to enlist their energetic support in combating the Japs. It was argued that inasmuch as these bodies were national in scope they would be effective in securing federal legislation if they acted on the question.

"J. V. Baker, president of the Turlock board, quoted figures showing that out of 6,000 acres in cantaloupes in the Turlock district this year 3,150 acres were controlled by Japanese. He also declared that the big percentage of California melons and Oregon apples were in the hands of Japanese.

"'I'm not condemning the Japs as much as the white man who leases and sells to them,' said Baker."

Entering the Poultry Business

Heretofore the dairy, poultry and livestock industries have been entered upon very slightly by Oriental aliens. Now comes from Sonoma County information that the poultry business is being taken up by them. The Santa Rosa Republican reports a farm bureau meeting as follows:

"Last Saturday the Sonoma County farm bureau held an all day meeting at Farm Advisor Merrill's office in the court house, Santa Rosa. Sheridan W. Baker presided at the morning meeting and John Denman at the afternoon session.

"It was reported that Sonoma County was threatened with a Japanese problem. Recently Japs have been coming into the county in increasing numbers and some of them are going into the chicken business. It has been found that more than 20 of the little brown men have secured property in the Petaluma section and some of them have gone into the chicken business on a large scale. Several of the members spoke on the subject and it was declared that the Japanese threatened to prove a menace. Should they get a hold in any one section of the county it meant that the white residents of that locality would find property values depreciated to such a great extent that soon none but Japs would live there and eventually it would be found that the white residents would have to dispose of their property to them. The farm bureau will discuss this matter more fully at a later date."

Mayor Reynolds of Chico recently remarked at the time of welcoming delegates to the fruit growers' convention: "I love you, California; my heart and soul are with this grand old state," but when women are imported to this country via the picture method and their offspring are deeded land, it is next to a crime.

Japanization of America

Commenting upon an eulogy of the Japanese race made at the recent state fruit growers' convention, the Chico Enterprise says:

"It is tough to admit that we must arrest the Japanization of America because of the virtues of the Japanese. But that's about the size of it. Perhaps a more accurate way to put it is that it is imperatively necessary because of the curious mixture of virtues with moral standards that are different from ours and of characteristics which if unrestricted threaten to absorb and dominate us."

It is most unfortunate that the friends of the Japanese and those who are anxious to prevent discussion and education in the matter of the menace insist on calling this discussion an expression of race prejudice.

As to whether the time for action has arrived, here are a few facts appearing in the daily press which raise the question—if greater provocation is required—how much will it take?

"According to information furnished by the Japanese Agricultural Association and the Japanese consulates to the state board of agriculture, the total Japanese population in continental United States in 1918 was 94,370, of whom 89,191 are in the consular districts of San Francisco, Los Angeles, Portland and Seattle.

"The Japanese estimate of their numbers in this state is 55,095, which is generally deemed to be far below the correct estimate. The same authority is responsible for placing the number of Japanese farmers in California at 32,530. The Orientals own 649 farms, comprising 29,000 acres, and control, by leasing or otherwise, 349 800 acres.

"The total value of agricultural products raised by Japanese in 1917, according to the Japanese estimate, was $41,162,000, which, divided among the Japanese agricultural population, would give an average income of $1,260.

"At the recent convention of fruit growers in Chico the statement was made that the Japanese already control one-third of the rice crop, the total value of which this season is estimated ta $21,000.000. The Japanese figures for 1917 estimate the acreage in rice controlled by them at 16,500 and the crop value at $910,000."

Writing as to the necessity for early action, Ivan H. Parke, assemblyman from the Auburn district, said:

"Japanese have colonized more than 1,500 acres in the heart of the fruit belt in Placer County and have secured four additional tracts of land during the past four weeks. I believe that the Japanese menace is the gravest economic question that today confronts our state and nation. Let us work to preserve our republic as a 'White Man's country'."

Commenting on the sale of a piece of real estate to a Japanese minor child in San Benito County, the San Juan Mission News says (this land had been formerly occupied by Americans with their families):

"Thus, two families within the last few days have been driven out to make room for non-assimilating citizens. These are only two instances, but there are many more throughout the district. In view of tbis condition, is it not about time that the people become aroused and insist on some legislation that will prevent this outrage upon highly respected American citizens? This condition is not a theory, but cold, stubborn fact. The school census being taken in this district shows that within a year or two the number of Jap children in the San Juan grammar school will equal, if not outnumber, the white children. Just think of it seriously for a moment! Are we so near actual domination by this alien race? Unless there is a stop put to this subterfuge of obtaining possession of our best lands many of us will live to see the day when few of the white race, except those who are reaping profits from land leases, will find room in which to live in this district. And this is no idle dream, mark you."

One reason for urgency in treating this question is shown by the following from the news columns of the Sacramento Bee:

Assemblywoman Elizabeth Hughes

"During the past few days the office of vital statistics of the state board of health has been deluged with letters from Japanese associations asking for certified copies of birth records. As high as 14 of these certificates have been requested by one organization.

"While it is not unusual for the department to receive scattering applications of this kind, activity during the present week has increased to such an extent that it has become extraordinary. The mail of the past two days is said to have brought in a flood of these letters.

"While it is possible that the parents of Japanese children born in America entertain some fear that the official records may at some time be destroyed, and that with copies of the certificates they would be in a better position to defend the citizenship of their offspring, the present movement appears to have some other object.

"At any rate, it is interesting, if not significant, to note that the flood of applications started about the same time the board of health began the preparation of data to be used by the board of control in a report to Governor William D. Stephens on the Japanese problem in California.

"The report being prepared by the health authorities will deal largely with the relative birth and mortality rate of the Japanese."

In Tulare County

"California must either take decided action without further delay, or 20 years from now our laws will be

Continued on Page 791

Established 1877 Forty-second Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture, and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914

Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday Dec. 13, 1919

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A scene full of life is shown on this week's cover. More, its background is made up of an exhibit of one of California's great industries. It took years to educate people to eat California ripe olives. They are now eating them and liking them, and thousands of acres of California foothills give just such scenes as this one which was taken in Butte County. Best of all, it is producing large tonnage "and the fruits run to very large sizes." Let us produce more of these large sizes which run into money.

IT RAINED

Our "Dry" editorial was hardly written last week when it began to rain, and it was an exceptionally fine rain. From the extreme north to the south there was a fine precipitation which was needed to aid crops to recover from the effects of the drying winds which swept over almost the entire state. Annual crops in the north suffered and in the south some injury was done to citrus trees. And some fruit was blown off and more affected by the electrical or possibly the drying condition of the atmosphere. The hills are already showing a coating of green. Now if we may have a continuation of these perfect days until Christmas has come and gone and then be given some glorious soaking rains it will prove one of California's greatest years.

PRESIDENT U. C.

Dr. David P. Barrows has been chosen president of the University of California. Dr. Barrows is almost a life long Californian, being a graduate of Pomona College. For years he has been connected with U. C., has been at the head of educational work in the Philippines and during the war rendered valuable service to the government in France.

Congratulations are due to U. C. and to Dr. Barrows.

BRINGING THE BEST

Reference to other columns of this issue will disclose the news that a number of California breeders are in the East selecting breeding material of high order for the purpose of strengthening their herds aud flocks. Such news is welcome news. From the standpoint of the breeding business this state is woefully understocked. What is needed is to develop our own sources of supply so that the long ship, the heavy freight and express charges can be overcome and the problem of acclimatization obviated.

These pioneers deserve and should be given the active support of buyers.

FROST FIGHTING

The best oranges on earth are those produced nearest the danger line as to frost injury, and it has been characteristic of citrus growers that they have crowded as close to this line as possible. Hence there are abnormal years when serious injury is visited upon the groves, as was the case in 1913. This compels frost protection. Frost protection has become a science and has been made so effective that the citrus grower is assured of success if he will but fit for it.

One section in which there has been most organized and efficient work is that of Pomona, Los Angeles County, but owing to the damage caused by the smudge of primitive frost fighting appliances the city council passed ordinances ordering cessation of use of the smudge pots. This proved embarrassing and the growers took the matter to the courts and have forced an agreement in effect that the use of the old time smudgers is to be discontinued, but the improved orchard heaters which give almost perfect combustion are to be permitted.

CITRUS FRUITS

There was some chilly weather during the past two weeks—worse, there was a wind in some of the citrus sections responsible for scarring and seriously injuring much fruit. Perhaps we should say "little" fruit for the principal citrus sections, it is estimated, have suffered a loss not exceeding two or three per cent. However, we were in one orchard a few days since in which pruners were at work who thought the loss might reach 35 or 40 per cent, while alongside this orchard another of about the same age showed hardly any damage, but, to be liberal, say the loss might reach five per cent. Why the difference? The one suffering greatest injury had been seriously affected by red spider which had weakened the tree and lowered the resisting power of the fruit. In addition, a heavy fumigation for scale had been given only a few days preceding the storm. Fumigation can hardly be dispensed with because of weather conditions which may possibly come once or twice in a lifetime, but red spider control is possible every year, and it is indeed a rich man who can afford to buy irrigation water and fertilizer to feed red spider.

Give trees best of care and they will be in position to resist these abnormal weather conditions.

POINTING THE WAY

If additional evidence is needed in support of the contention that California is destined to become one of the great breeding grounds of America we submit the record made by California bred and raised livestock at the recent International Livestock Exposition.

The International being the greatest show of its kind in the world, it goes without saying that only the best of the different breeds find their way there and of the many only a few "are chosen." It is better to lose at such a show than to win at many others, and to win or to be among the winners represents the highest possible honor.

In 1916, 1918 and again in 1919 California steers demonstrated that California is capable of producing the equal of any state. The same was proven as regards sheep and swine, and this year the winning of the Shorthorn grand championship by a California bred and raised heifer points the way to what the future will hold if the California livestock interests but make the most of their opportunities.

With a market for all possible breeding stock of the right stamp; with conditions that cannot be excelled and scarcely equaled; with knowledge of what can be accomplished with all kinds of livestock and with the eyes of the livestock world toward this state, it but remains for our established breeders and those about to begin the business of producing better livestock to approach the future with confidence guided by a sane conception of the responsibilities of a breeder.

Our congratulations to those resonsible for carrying the fame of California to the East.

AMERICA OR ANARCHY?

There seems to be no law yet enacted which enables the department of justice to properly deal with the disloyalty which is rampant. Lawmakers never contemplated a condition which anarchists, Bolshevists and the disgruntled generally have exhibited the world round during the past 12 months. There have been many American lives sacrificed because of disloyal utterances in season and out of season. The department of justice now wishes opportunity to protect our government and asks the enactment of an effective law. A bill has been introduced which is known as the Davey Sedition Bill, H. R. 10650. The gist of the bill is given in its first two paragraphs, as follows:

"That aliens who are anarchists; aliens who believe in or advocate the overthrow by force or violence of the government of the United States or of all forms of law; aliens who disbelieve in or are opposed to all organized government; aliens who advocate or teach the assassination of public officials; aliens who advocate or teach the unlawful destruction of property; aliens who are members of or affiliated with any organization that entertains a belief in, teaches or advocates the overthrow by force or violence of the government of the United States or of all forms of law, or that entertains or teaches disbelief in or opposition to all organized government, or that advocates the duty, necessity or propriety of the unlawful assaulting or killing of any officer or officers, either of specific individuals or of officers generally, of the government of the United States, or of any other organized government, because of his or their official character, or that advocates or teaches the unlawful destruction of property shall be excluded from admission into the United States.

"That any alien who, at any time after entering the United States, is found to have been at the time of entry, or to have become thereafter a member of any one of the classes of aliens enumerated in Section 1 of this act, shall, uopn the warrant of the secretary of labor, be taken into custody and deported in the manner provided in the Immigration Act of February 5, 1917. The provisions of this section shall be applicable to the classes of aliens mentioned in this act irrespective of the time of their entry into the United States."

Other sections of the law provide for punishment of those who would promote sedition and even provide for denaturalization and subsequent deportation.

Support it; it's all-American.

CAR WINDOW NOTES

Regarding California's rivers: It is indeed interesting to name them as one passes up the state. Just out of Bakersfield we cross the Kern, then the Kings. After we pass Fresno there is the San Joaquin, the Mariposa, then the Merced, hardly as beautiful as in the Yosemite, but still a clear beautiful stream; then the Tuolumne and the Stanislaus, aud after passing Stockton the Calaveras and Mokelumne; going out of Sacramento and while still in the city limits, the American, at the headwaters of which gold was first discovered. Then comes the Yuba, the Honecut, Feather and Sacramento. These are not all, but they give an idea of the wonderful wealth which the Sierra Nevada give to California.

* * *

And speaking of rivers, we are reminded of another which flows down the sides of the highest mountain in the United States, where it is gathered in by the great city of the southland and carried 250 miles through mountains and over valleys and out of a tunnel near San Fernando, where it flows over the riffles in plain sight of the train. And there are so few people who know of this and are watching out of the windows for a view of this wonderful wealth of water.

* * *

When riding through the state I have often wished to be a good marksman and have the privilege of taking a shot at some of the ground squirrels who sit at the entrances of their holes as if defying the passerby. This time I looked for the squirrels. Not one did I see in a 1500 mile trip. The county horticultural commissioners and Mr. Jacobsen of the rodent control have a lot of deaths to account for.

* * *

Occasionally a highway appears at the window, built along common sense lines. To one side of the center is the regular concrete foundation, perfect pavement for autos; on the other is an excellent track for dirt road for the use of horses, tractors which have lugs on the wheels, or vehicles which would destroy or injure the concrete foundation. At one place we saw a tractioneer laying plank over a pavement in order to cross the pavement without injury. Common sense, more, a public benefaction.

* * *

Funny, but it's true that when we are passing over a strip of poor land we see poor barns, poor houses, poor old horses and implements, poor farming. If we have been stung in the choosing of land let's build it up and be able to build better and bigger Enriching soil is a matter of building

* * *

The newsboy is something of a wag He just passed through selling "double jointed California peanuts guaranteed seedless and boneless." That's one trouble in this world there are too many seedless peanuts and not enough boneless heads.

Upon the highways of the world, so written that he who rides may read, the clean, sharp characters of the Goodyear All-Weather Tread have printed this impressive story: More people ride on Goodyear Tires than on any other kind
This is an actual photograph of the impression left on a clay road by the Goodyear All-Weather Tread

GOODYEAR

TEAGUE'S
QUALITY
Citrus Trees

Grow and Produce
Large Crops of
High Grade Fruit.

Because they are properly grown from the seed to the marketable tree.

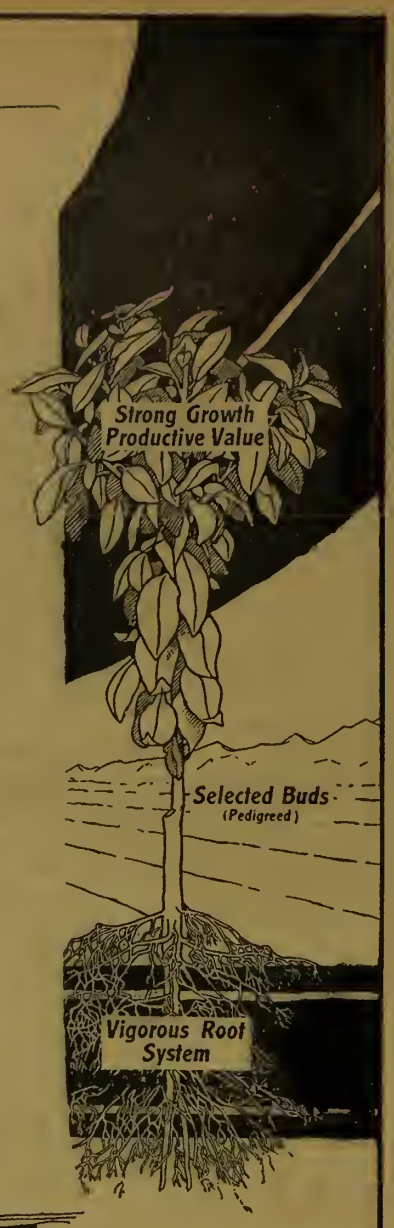
We use only the Choicest Seedlings properly planted on suitable soil and budded with Selected Buds from the best producing Groves.

Every care is used in digging and packing so as to insure the best results to the planter.

And then our 30 years' experience in Nursery and Orchard work enables us to give you valuable instructions and advice on the planting and care of your Orchard. This service is always at the command of Purchasers of Teague Trees.

On this basis we earnestly solicit your business.

The R. M. Teague
Citrus Nurseries
Box A. San Dimas, Calif.
Founded 1889



The Famous Hardie Junior is a Real Power Sprayer

It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight, and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Junior. Equipped with 1½ horse-power engine, Magneto ignition, 150-gallon tank with mechanical agitator, capacity of four gallons per minute with a steady working pressure of 200 pounds, and two 25-foot of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All for $340.00. *Delivered anywhere in this state*

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

The HARDIE ORCHARD GUN is $12.00, none better. Every one is guaranteed to give satisfaction to the user, or his money refunded.

The Hardie Spray Hose is the safest hose to buy.

The Hardie Manufacturing Co.
224 N. Los Angeles St., Los Angeles

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency," Tells You Why.
Hauser Packing Company
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"FOR THE LAND'S SAKE" Use
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By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.
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Northern Citrus Methods

SPEAKING regarding orange packing and maturity standards before the recent fruit growers convention, in the session held at Oroville, F. J. Mason, an independent shipper, gave methods followed in the northern groves. From his address we quote:

Much injury can be done by careless picking. Fruit picked with long stems will puncture other oranges throughout the entire handling, first when dropped into the picking sack, then when unloaded from sack to lug box, then again when rolled into the orange grader at the packing house, and again when wrapped and packed in the shipping box. You can imagine the great danger caused by the many opportunities for puncturing the fruit and consequent decay by the time it reaches the Eastern market.

Another element of danger is the too close clipping of oranges from the tree, which causes an abrasion of the skin. A wound of this kind brings on decay and mould very quickly. So you will readily see that the picking of fruit is a very important feature. It has always been a slogan in the fruit business that when fruit is properly picked, the packers cannot go very far wrong.

In packing oranges in Butte County we make three grades—Fancy, Choice, and Standard. The Fancy grade consists of finely textured, unscarred fruit; the Choice, of fruit showing scars and marks and of coarser and thicker skin; the Standard of badly scarred and rough-skinned oranges. The first two grades will cover practically all of our Butte County fruit as the percentage of Standard is very small, except during seasons when severe storms prevail and fruit is badly storm whipped.

Many people have mistaken ideas about grades in oranges, thinking the size has to do with the grade, and we often meet people who have the impression that a large orange is a Fancy orange because of its size.

I believe this is true in the grading of olives, and the larger they grow the more valuable they are. This is not so with oranges—in fact, it is often a detriment, for if too many large sizes are shipped in a carload lot they are subject to a discount in price.

Some years when through climatic conditions oranges run in excess to large sizes, the whole seasonal average is affected for the simple reason that the man who buys to sell to the consumer is unable to get as much money out of a box of large sizes as he can get out of a box of medium sized fruit. It means a difference of six or eight dozen oranges in a box between large and medium sizes, hence it is plainly to be seen that the trade does not want an excess of large sized fruit.

Now as to standardization: During the past few years great strides have been made in quality and pack. Our state commission, headed by George H. Hecke, is to be congratulated on results obtained by standardization. It is true that some of us have thought at times there was a little too much technicality in the rulings, and some practical fruit men may still think so; but we sincerely believe that from a standpoint of general results the whole thing has been a wonderful success and is making for better quality, grades and packs.

No doubt everybody in this room is familiar with the many controversies over what is known as the eight to one chemical standard for oranges. We do not believe in this method of determining the fitness of an orange for market; we believe the natural color should govern the standard of maturity, and when an orange is substantially colored on the tree it is ready for shipment. It is self evident that natural tree colored fruit is far more desirable and palatable than fruit picked when green outside and then artificially colored by heat, even if it does conform to the chemical test. However, the latest rulings, as adopted by our last legislature, modify the old ruling somewhat. Oranges reaching the chemical analysis of eight parts of solids to one of acid must show at least 25 per cent natural color before they can be sweated to color, while oranges not reaching the eight to one test may be picked when showing 70 per cent color on the tree.

This, in our judgment, is something of a victory for the natural colored fruit, and in a mild way condemns artificial heat for color.

And this is as it should be. The Butte County oranges of natural color will always give satisfaction. Never in our recollection has there been complaint on oranges from this district which have been shipped without sweating. Good live well colored fruit without artificial heat and regardless of any chemical test will always be in favor, and it is on these lines that Butte County has built up a splendid trade.

Oranges beated to color carry a dead and pale appearance, while oranges allowed to color naturally have that deep orange color which pleases the consumer.

Our state commission has done great things in standardization of deciduous fruits, which has been no small task considering the many varieties and different methods required.

There are fewer rejections, fewer complaints, and a greater demand at satisfactory prices. The dealer now can feel reasonably safe in ordering his supplies direct from California, knowing that fruit bought from reliable shippers will be properly packed and loaded.

In all these matters the producer, the shipper, and the state authorities should cooperate, and each and every one of us work together for the common good.

Speaking of cooperation, the interests I represent believe in cooperation—cooperation with the grower and cooperation with the consumer. We strive to assist the producer in every possible way, to help him produce good fruit, to give him the benefit of our judgment in packing and marketing, based on many years' experience, to place his produce in the best markets for that particular product and to keep faith with the consumer by giving him legitimate pack and quality for his money.

TEAGUE NURSERIES EXPAND

The R. M. Teague Citrus Nurseries of San Dimas are both expanding and absorbing. The entire stock of subtropical fruit trees and plants formerly belonging to the West India Gardens was purchased and moved to San Dimas, together with the houses, and the Altadena establishment passes out of existence. All the young stock of tropicals will be planted on the new 90 acre tract recently purchased by Mr. Teague in the La Habra Valley, about six miles east of Whittier. A large stock of citrus trees will also be planted on the new grounds, but avocados, feijoas, sapotes and guavas, together with all the long list of fruits that go with them, will be grown. At San Dimas fields are hundreds of thousands of young citrus trees under the highest culture and on stakes could be seen the registered numbers of the trees from which the buds were taken.

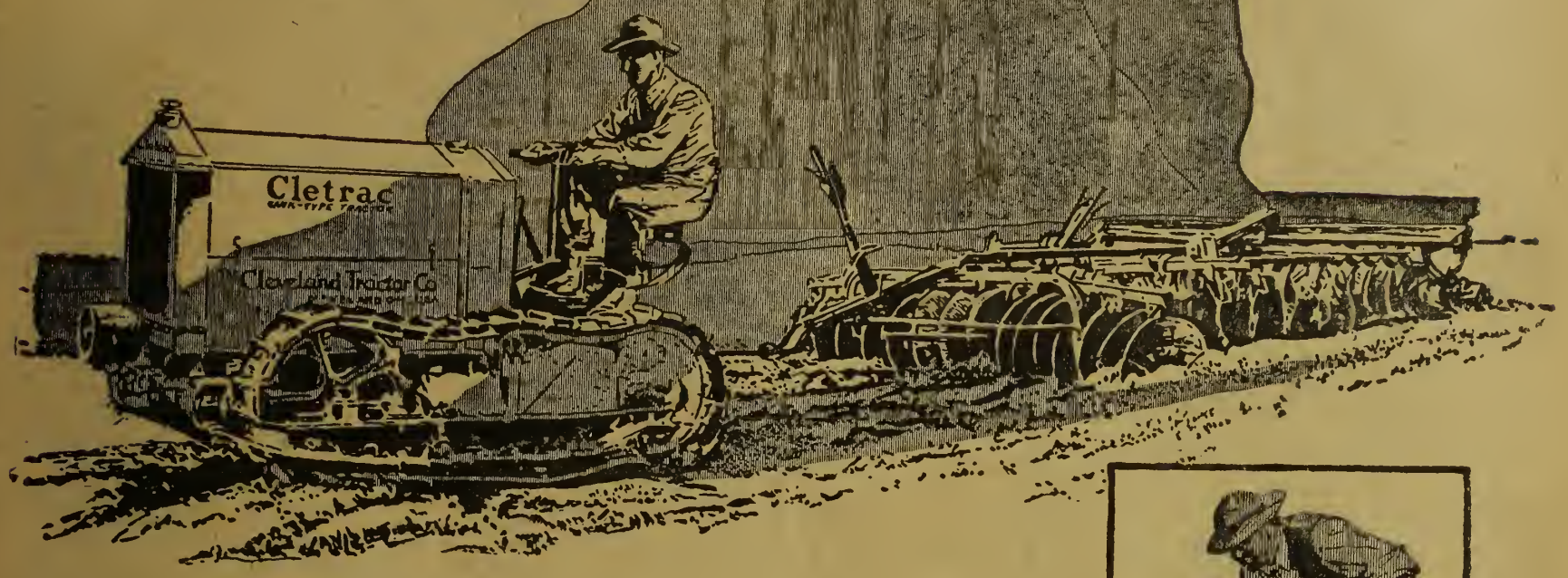
THE FAMILY TREE

In his last week's talk at Ontario A. D. Shamel made a strong plea for recording the crop production of each tree and advised painting a number on each with white lead. He said it is amusing, as well as pathetic, to see how little the average orchardist knowns about his best trees. In visiting orchards in quest of the best performers, the owner would state: "We have one tree (or more) from which we gather oranges for family use. They are superior to all others. Come right this way. Here it is! No, this is the one. No. Well, I am not sure but it is this one; it is one of this group close by." Very few are able positively to identify these family trees. How easy recognition would be if each had a number. How easy to find the drones if the crop of each tree was counted and recorded.

Cletrac

TANK-TYPE TRACTOR

(Formerly known as the Cleveland Tractor)



It runs on tracks as a wheelbarrow runs on a plank

TRY to push a loaded wheelbarrow through soft plowed ground. You have to exert every ounce of your strength. The wheel sinks in deeper and deeper and you finally get "stuck" altogether and have to take off your load.

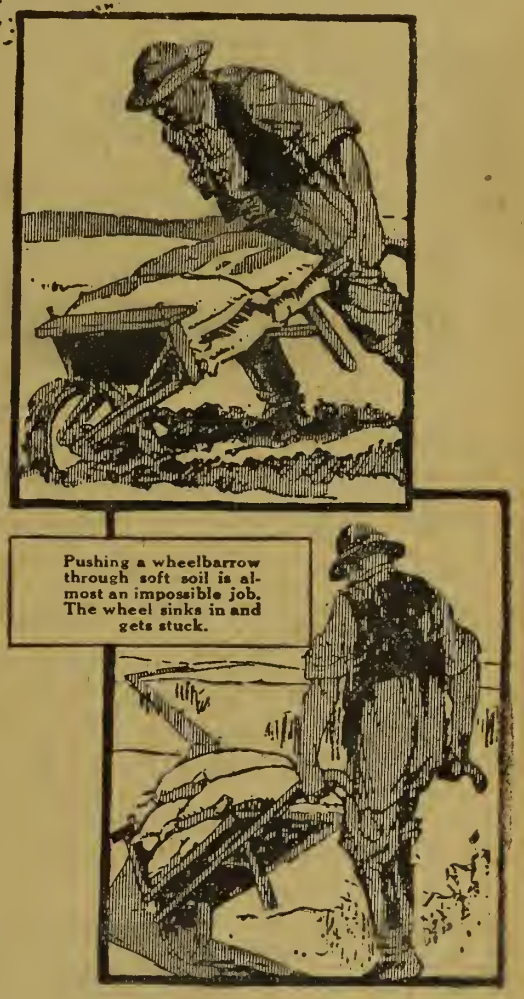
But lay a plank over the *same* soft ground and you can roll the *same* wheelbarrow over it with the *same* load—*but with only a fraction of the effort.*

It was the plank that made the difference. Its broad flat surface *distributed* the weight of the load so that there was very little pressure at any one point.

And right there you have the principle back of the Cletrac Tank-Type Tractor. It runs on broad flat tracks in much the same way as the wheelbarrow runs on the plank. No power is wasted. You can pull a bigger load. Fuel and oil go further. And *more* work can be done in *less* time—at *less* cost.

Because you can work so efficiently on soft soil with the Cletrac *you can go through with the entire preparation of the seed bed*—a most unusual thing for a tractor to do. The Cletrac doesn't sink in and doesn't leave two hard trails of packed down soil behind it.

Order your Cletrac now. There is plenty of work for the Cletrac to do, like getting out wood, hauling logs, grinding feed, breaking roads, hauling manure, etc., during the winter months and when Spring work comes along you will be fully acquainted with your Cletrac.



Lay a track of boards over the ground and you can roll along easily enough. It is this principle that has made the Cletrac Tank-Type Tractor so marvelously successful. It doesn't *push through* the soil; it *rides on top on its own tracks.*

Tractor Book Free

We have an interesting 32-page book entitled "Selecting Your Tractor" that will be sent free upon request. It discusses tractor farming problems on a "brass tack" basis. Write for your copy today.

The Cleveland Tractor Co.

19007 Euclid Avenue Cleveland, Ohio

The largest producers of tank-type tractors in the world

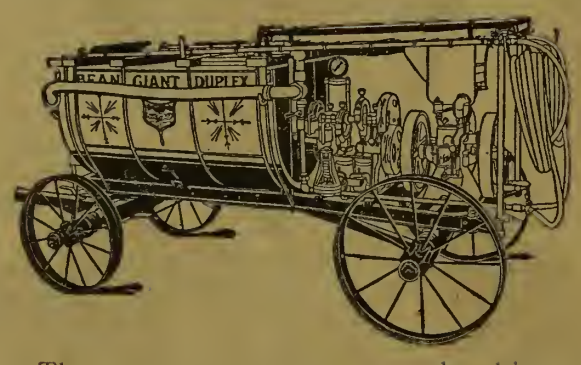
Our Message to You:

Spray now for healthier trees—stimulated growth—better fruit—more of it, and better prices.

Our Advice to You:

Do It With a

BEAN Power Sprayer



Three new power sprayers are placed in our line this year. We call them Simplicity Sprayers. They are compact, efficient machines—the most simple and most easily operated machines ever built. May we send you a description of these outfits? Use the coupon.

Bean Spray Pump Co.

158 W. Julian St. **San Jose, Cal.**
559 Hosmer St. **Lansing, Mich.**

(Clip out and mail)

Bean Spray Pump Co.,
158 W. Julian St.,
San Jose, Cal.

Please send me your Sprayer catalog without obligation to me I have ..... acres of .....

Name .....

Address .....

Oak Root Fungus Disease or Toadstool Root Rot

ONE of the most widespread and injurious fungi in the Pacific Coast region is oak root, or Armlllaria mellea, more recently called Armillaria putrida. Thls fungus is one which infects various kinds of roots or wood lying in the soil, causing wood rot. It attacks living trees or shruhs and causes their death. Affected trees or sbrubs usually show a certain amount of distress hefore they suddenly collapse and die durlng dry weather. Sometimes a tree dies suddenly without previous symptoms, and sometimes an attacked tree lingers along making a certain amount of recovery hut finally succumbs. From the behavior of such trees it would not be possible to distlnguish between this trouble and certain others, such as gopher injury, root sour sap, etc.

In orchards the fungus usually develops from a center, spreading outward from one tree to another year after year, so that in time extensive areas become killed out. Trees replanted within the affected area ordlnarlly dle wlthin a few years. This behavior is highly characteristic but some instances have been found where local water injury causes the same phenomena. Trees affected with oak fungus, when examined at the root, show characteristic symptoms.

White Mycelium

When a root attacked by oak fungus disease is examined hy cutting into the bark, the whole suhstance ls found invaded hy white or creamy mycelium in the form of large, conspicuous plaques, and the normal consistency is entirely changed, being first watery and then soft and decaying. Tbere is often associated with this a gelatinous or gummy material, and in many of the affected trees the margin of the invaded bark gums copiously. The odor of this decayed bark is not sour or putrid but has a sharp, rather agreeable, mushroom smell. This white mycelium is an invariahle sign of the disease. Where a tree is killed by some other agent, different kinds of white fungi may invade the bark and form felty mycelium so that sometimes considerahle skill is required to recognize the Armillaria mycelium with certainty. The white mycelium of Armlllaria is never found in nature on the surface of the bark hut always buried, since lf the mycelium comes in contact with the air while it is alive it covers itself with a brown coat or shell.

Wood Decay

The white mycelium also penetrates copiously into the sound wood. At the outer limits of penetration the wood is slightly darker than normal, but the fungus rapidly causes the wood to become decayed with a uniform white rotting. Rapidly decaying wood or bark when exposed in the dark shows phosphorescence. Unlike other wood rotting fungi, Armillaria mycelium is killed by thorough drying out.

Susceptible Plants

Nearly all trees and shrubs may be attacked. The Armillaria, however, is a rather slow acting fungus so that annual or short lived crops are not usually seriously injured; also plants with fine, slender roots are not much affected owing to the habit of the fungus of developing in roots of some thickness. It has been reported as attacking rhubarb and sometimes tbe rhlzomorphs penetrate potatoes, causing rot, hut ordinarily in California such plants are not injured. A few trees have seemed to be highly resistant and some practically immune. French pear is apparently lmmunc while the trees are growing healthily. Black walnut and figs are considered highly resistant. Apples are certainly more resistant than stone fruits and Myrobolan plum is apparently somewhat more resistant than peach or almond.

Control

Affected plants may be saved if the soil is removed from the roots and the diseased parts removed, treating the wounds as ln other cases of tree surgery with some disinfectant such as creosote or Bordeaux paste or corrosive sublimate (1-1,000), followed with asphalt. Usually the disease is not discovered until it is too late to save the tree. In California the fungus generally works so deeply that the lower roots are practically all destroyed hefore the top shows evidence of trouble. Where the rhizomorphs come from a neighboring stump it may he entirely practical to remove them from the crown of the trec and scrape off the slight infcction which has taken place in thc outer bark. Evldently the fungus does not in any way poison the part of the tree which is not invaded and it hecomes merely a qucstion of saving sufficient roots to support the tree.

Preventing Spread

It has sometimes been recommcndcd to pull out or dig out two rows of trees surrounding tbe margin of the spot, and this has been reported to be successful in a number of cases. However, the sacrifice is often great. The infected soil may be separated from the uninfected about it by means of a dltch. Where shallow rooted trees like citrus are involved this ls probably entlrely practicahle, especially in the shallower soils. It ls doubtful whether it will he feasible to make a dltch more than about four feet in depth so tbat for very deeply rooted trees in deep soils the ditch may not be completely effective but it is well worth trying.

The greatest pains should be taken to examine all roots removed in the digging, and if any are found affected with Armillaria, the location of the ditch must be changed so that these may be included. All the diseased roots within the area must be surrounded by the ditch. The cost in bigh priced orchards is not believed to be prohibitive. However, once opening the ditch will not be sufficient since it will rarely be found satisfactory to leave the ditch open durlng the summer, and the digging would need to be repeated probably about every two years. This comes about because new roots will cross the ditch and mingle with the diseased material on the other slde. Various experiments have been made in placing barriers of building paper or roofing paper, boards or concrete in the ditch before refilling. These experiments are still under observation. The lighter types of building paper have been found to be worthless for this purpose since plant roots pass through them readily. No recommendation as yet can he positively made concerning the use of barriers.

It is highly desirahle that diseased areas should be cultivated separately from the rest of the orchard since the fungus is probably spread througb pieces of diseased roots which are carried along by the cultivating instruments and dropped near healthy trees. In small areas this may be very inconvenient, and it will prohahly be possible to take precautions which will be adequate hy making sure that no root pieces are clinging to the implement on passing the edge of the spot.

Utilizing Infested Areas

Reslstant trees such as French pears and probably figs or hlack walnuts may be freely planted where desired. An ideal arrangement would be to sow down the Armillarla spot to alfalfa or the spot might he cultlvated as a vegetable garden. In some places the Armillaria spots have heen cleared off, taking some trees around the edges and utilizing for drying grounds. Spots lnfccted with Armillaria should not be used for growing nursery stock owing to the chance of establishing the disease in land not now affected.

THE POOR FISH!

The bureau of fisheries reports the rescue of 68,000,000 fish on the Upper Mississippl River, double the number rescued last ycar, and this figure will also be doubled if favorable present conditions prevail to the cnd of the season, or until the streams are frozen

PLANT QUARANTINE NO. 37

Some readers of the Cultivator may wish to import novelties or propagating stock, which the federal government encourages and fosters. It is finished stock, ready for the planter, that is prohibited.

A "novelty" is defined as follows: "A plant variety, strain, type, or form, either recognized by the trade as a novelty and listed or described as such in catalogues, trade journals or other publications or duly and properly certificated by the originator or introducer."

"Necessary propagating stock" is defined as follows: "Stock of old or standard varieties not available in this country and imported for the multiplication of the plants in question as a nursery or florist enterprise as distinguished from importations for immediate or ultimate sale of the stocks actually imported."

It is necessary to make application to Federal Horticultural Board, United States Department of Agriculture, Washington, D. C., and the necessary blanks will be sent, upon which must be entered quantity and designation of stocks imported, name and address of the exporter and grower, country and locality where grown and the name and address of person or persons to whom the plants are to be forwarded after inspection and release by the department of agriculture. The regulations further provide that a bond is required that the conditions set forth by the federal horticultural board shall be fulfilled. Stock imported under permit as above to be planted and grown so as to maintain its identity and the board shall have the privilege of inspecting stock at any time and destroying it if necessary. The whole matter is made as plain and easy for the importer as possible, with no autocratic restrictions.

ZANTE CURRANT VARIETIES CAUSE CONFUSION

There are two varieties of the so-called Zante currants, and prospective planters should carefully investigate the stock they are purchasing to avoid later disappointments, is the advice of the service bureau of the California Associated Raisin Company. The United States department of agriculture, as well as growers who have investigated these two varieties, consider the Panariti, or so-called Black Corinth, far superior in quality to the white variety. The Panariti at present enjoys a better demand from the trade.

The bureau of service points out that growers should specify the variety they wish to plant when securing cuttings or rooted vines, and not simply ask for Zante currants, as both varieties are commonly known by that name.

TO ISSUE BULLETIN ON ZANTE CURRANTS

Growers who are interested in the culture of the Zante currant in California should get their names and addresses on the mailing list for two bulletins on this subject which are soon to be issued by the United States department of agriculture.

The department has asked the bureau of service of the Raisin Association to secure the names and addresses of all growers who have vines of either variety of Zante currants, as well as those who are planning to grow this crop, in order that these bulletins may be placed where they will be of the most value. A letter addressed to Bureau of Service, California Associated Raisin Company, Fresno, containing your name and address will insure receipt of these bulletins as soon as they are issued.

OUR IMMIGRANTS

Of the total of 33,200,103 immigrant aliens coming to the United States during the last 100 years, 29,552,198 were from Europe, 788,290 from Asia, and 1,883,267 from British North America. The heaviest influx came in the order named: Great Britain, Germany, Italy, Austria-Hungary, Russia, British North America. In the past 100 years France has sent us but 523,820 immigrants. In certain years the Irish element not only out numbered all other immigrants from Europe, but exceeded that from all other countries.

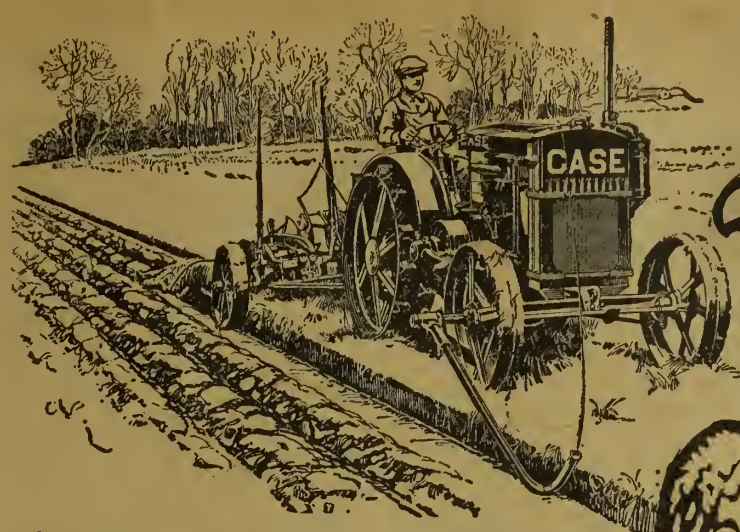


Illustration shows Case 10-18 Kerosene Tractor pulling 2-bottom Grand Detour Plow.

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Red Spider Must be Controlled

By E. R. deOng

RED SPIDER is the most serious orchard pest of the Sacramento Valley and to a varying extent in other parts of the state. The wide range of host plants and the severity of their attack makes them an important factor in a large part of the orchard districts of the state. We may include under the term red spider the three or four common plant mites whose feeding is of a similar type. If so, we are speaking of a pest that is found to a certain extent in almost every deciduous or citrus orchard of the state.

The insect pests of our orchard, whose feeding is similar to that of red spider, such as scale insects and aphids, are not usually so injurious because they feed mostly on the elaborated plant food contained in the sap and not to so great an extent on the chlorophyll. The injury caused by these insects is through the extraction of large quantities of water and food prepared for the plant's use and possibly the injection of a toxic material which is poisonous to the plant or through the smutting of the fruit. Examples of the latter types of injury are the San Jose scale, the purple aphis of the apple and the European fruit scale. With the exception of insects which inject poisonous materials into the plant it is possible for most trees to support a large nnmber of sucking insects, unless the tree is already suffering from drouth. But in the latter case the additional drain on the water supply of the tree may become a serious factor.

The red spider, however, not only extracts the sap but also the chlorophyll (the green coloring matter of the leaf and young bark). Dr. Whitten has been showing us that a tree without chlorophyll is in a weakened condition, incapable of manufacturing its own food in sufficient quantity for its needs, and from the nature of the plant, unable to utilize such material from any other source, providing it was available. Hence our orchards while undergoing the strain of maturing a crop, manufacturing starch for present needs and for next year's buds, and storing food in the sap, are depleted of the very organs which alone are capable of supplying this need.

We have been told at various times by Dr. Whitten that the dark green, thickened, older leaves of the center and lower part of the tree are of more value in the manufacture of sugar than the newly expanded leaves, because they contain more chlorophyll and by reason of their thickened cuticle evaporate less water. Here again we see the extreme danger of red spider attack, for it is on these leaves that we usually find them most abundant, and the paling effect of their presence most evident. Possibly the greater abundance of chlorophyll in these leaves is the cause of their locating in this part of the tree. Insects which are more of sap feeders, such as thrips and aphids, will be found on the newly expanded leaves which contain relatively a small amount of chlorophyll but are turgid with sap and hence are of less value to the tree than the dark colored ones upon which the mites feed.

The results of red spider attack then are primarily the reduction of the amount of elaborated sugar and starch and secondly the possibility of defoliation—with sunburn as a natural consequence. This absence of foliage persists throughout the remainder of the year unless new leaves are grown at the expense of earlier stored food. The checking of sugar manufacture in midsummer may mean a reduction in the amount of sugar and other nutrients present in the prune and almond, with a resulting inferior crop. The buds for next year's leaves and flowers, which are ripening at this time, will have an insufficient supply of stored food and hence will not make as strong nor as rapid a growth. (The quick growth which a tree makes in the early spring is possible only by reason of feed stored the previous year.) The attack may become so severe that the tree is unable to provide food for its immediate need. Then it is quite probable that food stored earlier in the year will be translocated and utilized immediately, thus reducing next year's supply of food. Lastly, it remains for Dr. Whitten to point out the possibility of another serious injury which most of us had not recognized. I refer to the lowering of the amount of sugar in solution in the sap, thus rendering the tree more susceptible to frost injury. From what has been said it will be seen that the feeding of red spider would tend to cause this very type of injury and thus put the tree in a more serious condition than we had thought for.

These points, I think, will serve to emphasize the need of an early attempt to control the spider. This work should be done early in the season before injury becomes noticeable. Where injury has been known to be common the sulphur should be applied early in the summer even though the spider has not been noted.

AID FOR PEAR GROWERS IN PACIFIC NORTHWEST

The culture of pears in the Pacific Northwest beyond the Cascade Mountains has suffered severe losses from time to time and its development has been retarded by various insect pests and by pear scab, a fungous disease, which are not sufficiently understood by the average orchardist. While the scab, to cite the most serious disease, is readily controlled by sprays, it annually causes a heavy loss because of inefficient spraying materials and carelessness as to the time or manner of application. The crop yield is frequently cut from 50 to 75 per cent, and unsprayed fruit is often so unsightly as to be almost worthless.

Though spring and summer spraying of pears for the control of scab has been generally practiced, the results, for the reasons indicated, have often been disappointing, especially when spraying has not included an insecticide for control of insects causing disfigurements that look very much like scab spots on mature pears

ANAHEIM CITRUS REPORT

W. H. Schureman makes his first annual report as secretary and manager of the Anaheim Citrus Fruit Association. He reports that the association was seriously handicapped during the early part of last year because of the flu which materially lessened the labor supply. During the preceding year there were fumigated 173,018 trees at a cost of $54.000, or 31 cents per tree. With the association reduced by division there were fumigated this year 82,000 trees with perhaps 18,000 more yet to be fumigated. During the year the association received 65 new applications for membership which totaled 579 acres of citrus groves. The association handled through the year 184,511 loose boxes of fruit which averaged net to the growers $241.

CALIFORNIA GRAPE GROWER

A new monthly has entered the field. It is the California Grape Grower, official publication of the California Grape Protective Association, with headquarters in San Francisco. It will be devoted to the interests of the wine grape growers of the state.

VACUUM PACKED WALNUTS

The Walnut Growers Association is now putting up what is called the new vacuum pack of walnut meats. The carton contains eight ounces net and the meats keep sweet for a period of months. This attractive package has been so well received by the trade that within a month after announcing it the association sold over 11,000 cases of 24 cans each.

Grape shipment records for Lodi are: 3,666 cars in 1916; 3,255 in 1917, 4,500 in 1918; 6,111 in 1919.

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CLEAN plowing is the *only* kind of plowing the E-B 102 tractor plow ever does. It is the plow for clean crops.

It buries every spear of stubble—even on the dryest, toughest soils of California. For this plow cuts deep enough to make a clean furrow slice, and the moldboard is shaped so as to turn the land clear over in a continuous, smooth ribbon.

The E-B 12-20 tractor and 102 plow can turn over the heaviest as well as the lightest soils. Together, they make an unbeatable plowing combination for an economical quality job.

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The shares on the 102 tractor plow can be changed in 5 seconds, without tools of any kind. The clean plowing of sharp shares is the mark of the E-B 102.

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All working parts are enclosed; Hyatt roller bearings; K-W magneto; Bantam ball-thrust bearings; Modine Spirex radiator.

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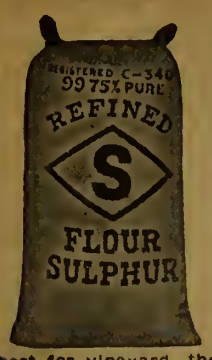

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

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HORTICULTURAL QUARANTINE NO. 37

By Ernest Braunton

THERE has been much discussion among all classes of plant handlers as to the provisions of this quarantine law, and from certain quarters very active opposition. But in California the measure has been heartily endorsed by nearly all interests, and the disgruntled are few.

The chief objections have come from Eastern brokers with water front offices in Atlantic ports. These roll top desk plantsmen imported shiploads of plants and bulbs and distributed them to dealers all over the country. They were the rankest sort of middlemen and under "37" their business has collapsed. In California florists have been the chief objectors, for did they not buy an azalea in Belgium for 40 cents, land it in California for 75 cents, and sell it in bloom at Easter for six dollars?

For several years this regulation has been in process of incubation and it did not catch us unawares, for many firms established large nurseries for the growing of azaleas, bays, heaths, rhododendrons, palms and "Dutch" bulbs, all of which were formerly imported. Persimmon and other trees originally were heavily imported from Japan, but local growers who read aright the handwriting on the wall planted seeds and budded their own stock. Thus the nation was somewhat prepared for the embargo. In a few years we shall have become so stocked with American grown trees and plants of all sorts that what some feared would be a calamity will prove an acknowledged blessing. In ornamental lines in California the shadow of the coming event moved Ward to expend a quarter of a million in Humboldt County, Bassett and Washburn $200.000 at Sierra Madre, Wilcox $150.000 at Montebello and Dieterich $25.000 in the peatlands of Southern California. Aside from these, great fields of Dutch bulbs are grown about Santa Cruz in Central California, and every standard nursery firm in the state is growing some of the stock formerly imported.

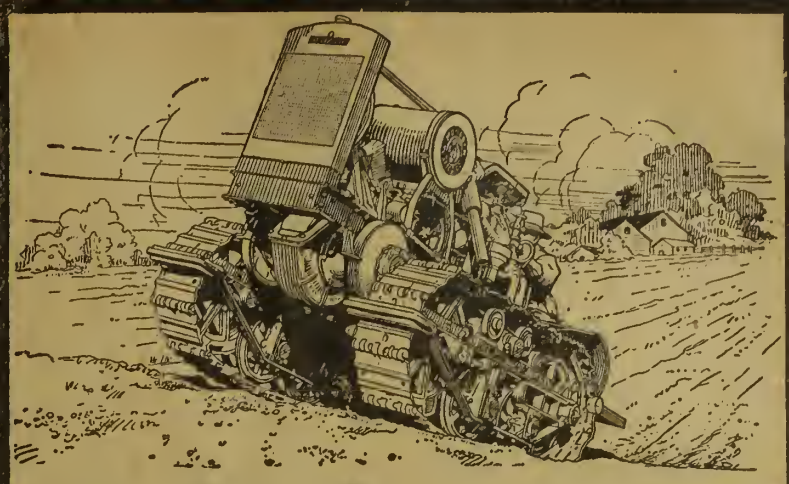
But quarantine regulation No. 37 does not prohibit; it merely restricts bringing in new varieties from any country complying with its provisions, so that necessary propagating stock may be brought in in reasonable and quite large quantities. The government maintains a detention quarantine station where all importations are held until they may safely be liberated for distribution. Finished stock, ready for the planter, is kept out. But propagating stock for use of the nurserymen is allowed to pass after reasonable detention. Nurserymen say that anyone who tries to show the federal horticultural board what he wants for importation in noverties or necessary propagating stock will meet very courteous and conscientious officials and encounter no difficulty in securing a permit.

NICOTINE SULPHATE CHECKS APPLE LEAFHOPPERS

The apple leafhopper, a destructive insect that occurs in nearly every state of the Union, may be materially checked by a single spraying with 40 per cent nicotine sulphate in the proportion of one to 1,500, combined with soap. The solution should be applied against first brood nymphs. The same treatment made three or four weeks earlier is effective against the rose leafhopper, though this species is seldom injurious enough to justify a special application.

The apple leafhopper causes serious injury to apple nursery stock by extracting the plant juices from the terminal leaves. As a consequence the leaves gradually become undersized and fail to function normally, thereby retarding the growth of the trees. The rose leafhopper feeds on the lower leaves and produces white or yellow spots on them.

During the recent high water following the rain of Thanksgiving day considerable damage was done to bridges in Arizona. The approach to the bridge over the Agua Fria on the road from Phoenix to California was washed out, entailing a damage of $50,000 to $60,000. Other bridges and roads were damaged considerably.



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is absolute proof that the big, powerful motor has all its power properly applied to give the maximum of traction. That's what counts—the relentless grip on the ground of the MONARCH track. It makes light of hills, grades and loads.

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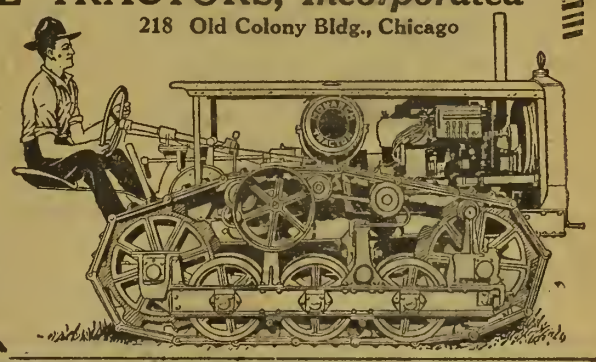

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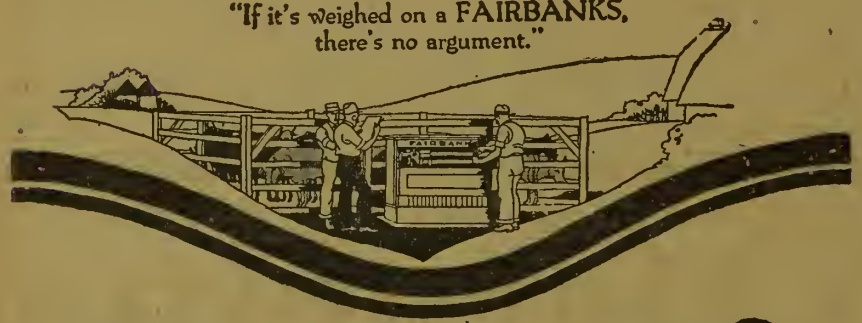

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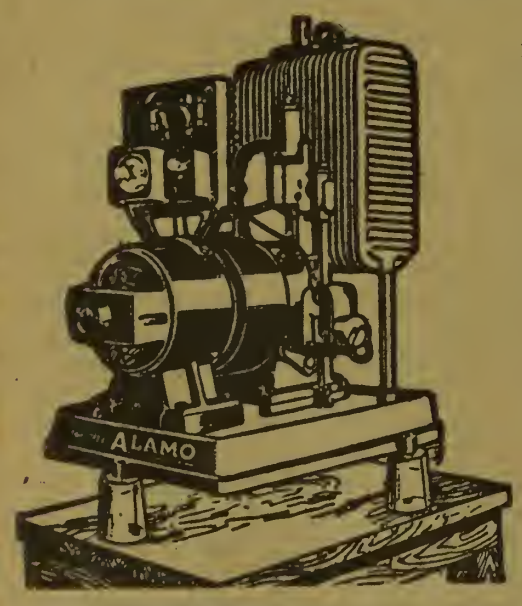

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LOS ANGELES

PACIFIC NEW AND RE-NEWED PIPE SAVES MONEY
Renewed screw casing costs from one-half to two-thirds less than standard pipe. Large savings on standard pipe, fittings and valves; special fittings made to order. Pacific Pipe is thoroughly tested and guaranteed for 150 pounds working pressure; asphaltum dipped; serves every purpose. Let us save you money. Write

PACIFIC PIPE CO. 237 HOWARD STREET SAN FRANCISCO

When Writing Advertisers, Mention the Cultivator.

New Features in Agricultural Census

AMONG the new features included in the approaching 1920 census of agriculture will be a series of questions relating to the amount of corn and other crops raised for silage purposes. These statistics on silage, which are to be collected by the bureau of census in accordance with the recommendations made to that bureau and to congress by the United States department of agriculture, are expected to furnish accurate and comprehensive figures on this important phase of farming which have heretofore been lacking. The facts and figures gathered in the census on this subject will be tabulated so as to show what each county as well as what each state produced in the way of silage during the year 1919.

The census bureau also announces the inclusion in the farm schedule f questions to show how many farmers own tractors and automobiles and how many have heating and lighting plants and telephones in their homes. These questions are designed primarily to make known the better living conditions and modern improvements on farms in all sections of the country. The census bureau, in including these questions for the 1920 census, was guided by suggestions from leading farm economists as well as by communications from farmers' organizations. The department of agriculture is also interested in these questions and gave its endorsement to the plan.

Copies of Schedules for Farmers

Any farmer who desires a copy of the agriculture schedule in advance may secure one by writing Bureau of Census, Washington, D. C.

That the individual farmer will realize the advantage of keeping a more accurate tab on what his farm is yielding is one result of the census hoped for by the department. The schedule of questions which will be used in the approaching census will help the farmer in getting started in this work, inasmuch as it sets forth the subjects in which the government is interested and thus provides a model which any farmer can easily adapt to his own needs.

When Reports Will Be Ready

The published results of the 1920 census will be issued by the census bureau as rapidly as possible. No precise time can be set in advance as to when the first reports will appear, but it is thought that the preliminary bulletins will be issued within three months after the completion of the enumeration. Later a series of bound volumes appropriate for use as reference books in libraries and schools will be published.

These publications will show for each county, for each state, and for the country as a whole, the number of farms, the total acreage of farm lands, the value of farm property, the numbers of the different kinds of livestock, the acreage and production of all the important crops and many other items of interest connected with the farming industry.

The bulletins of the census bureau will be widely distributed and every effort will be made to make them of the greatest possible value to the farmers who furnished the information they contain.

California Orange Marmalade

THE Exchange Orange Products Company has two marmalade factories in California, one at San Dimas and one at Anaheim. Each of these works employs from 75 to 150 people and when running full capacity may each produce 7,500 pounds of marmalade daily. Just at present the run on Valencias has been finished and a general clean-up and overhauling is in process at the San Dimas house under the direction of E. S. Harrison, superintendent. Floors and walls are of concrete and all are kept so scrupulously clean that the building appears to have been built but yesterday.

About December 15 the overhauling and testing of apparatus and equipment will have been finished and the place once more resemble a human bee hive of industry. The marmalade is marketed in glass containers, of three and a half ounces, nine and one half ounces, and 16 ounces net weight, but of these the intermediate size is considered the standard. It is mostly shipped to Eastern states, but the Californian has a strong love for marmalade and the home consumption is large. All of Southern California is drawn upon for supplies, the San Dimas house drawing from the Pasadena-Alhambra district to Riverside and environs, while the Anaheim house cares for all the output of Orange County.

The housewife may be interested to know that the standard orange marmalade is made from 90 per cent oranges and ten per cent lemons. Occasionally some grapefruit has been substituted for lemon but the public taste does not approve of it.

Aside from marmalade little but orange jelly is made, though experimentation is constantly going on. During the past season some orange syrup was made and a shredded dressing for ice cream, but both are still in the experimental stage. One strange discovery was made during the past summer that may lead to a profitable by-product. Grasshoppers are very fond of the cooked orange pulp that is now a complete waste. Mr. Hopper will leave alfalfa and the daintiest succulent plants to dine on orange pulp, and this may eventually lead to his undoing or complete extermination. A little crude molasses and still less of arsenic added to the pulp quickly woos Mr. Hopper to a death feast. It is believed that this seductive hopper poison may be put on the market in the near future.

MALT SUGAR SYRUP

Malt sugar syrup is a brand new sweet which has arrived on a commercial scale at the psychological moment to relieve the sugar shortage, say specialists of the department of agriculture. Malt sugar syrup has a delicious flavor, somewhat resembling that of honey, which adds much to its palatability and value as a sugar substitute.

While malt sugar has long been known to chemists, its production on a commercial scale is only beginning. Two factors have stimulated its production recently. The shortage of sugar has developed a market for it, and the recent prohibition law has made available both the raw material and the machinery needed for its manufacture. This syrup is made from the same grains as beer, and may be made from corn or potatoes or any plant containing starch. Barley, which was used until recently in the manufacture of beer, can be used now to produce malt sugar syrup.

Breweries with very little change can be used and are now being used for its manufacture. Up to a certain point the process for making malt sugar syrup is the same as the process for making beer. Evaporating pans is the principal additional equipment required by breweries to become malt sugar syrup factories.

Malt sugar syrup looks very much like maple syrup. It can be used for everything that cane sugar is used for. While its use on the tahle may not be quite so convenient as sugar, it is a most excellent substitute for table use in the present emergency. The specialists expect that it will hereafter have a regular place in the batting order. This is a case where the substitute makes so good that the regular, whose place it takes, may have to warm the bench. While it is not likely that this new sweet will replace sugar for table use in normal times, it undoubtedly will make a place for itself in the household as it is doing in the manufacture of food products. It is an excellent, wholesome syrup, and on account of its delicious flavor is superior to sugar for some purposes in cooking and baking.

CERTIFIED SEED POTATOES

Continued from Page 779

third inspection, made at harvesting, will reveal the trouble. Mr. Aggeler says many inspectors would be needed as all want to plant about the same time and much hardship will result. A grower may be unable to get inspection of his stock when he is ready to plant and yet under the law if he plants without this inspection his crop will not be certified. If the potatoes are all right the two other inspections will sufficiently show it and if they are not the same two will abundantly prove the fraud or mistake. "Abolish the first inspection; it may aid the amateur but not the experienced grower."

Mr. Aggeler states some confusion has arisen in the past through selling the same potato under several names. A notable case of this is the British Queen, also catalogued as Scottish Chief and Oregon Blue-Blossomed White Rose, all of which he says are one and the same potato, a very good one. This firm handles three-fourths White Rose, the remaining sales going to two or three other varieties. In the past American Wonder has stood second but British Queen is forging ahead of it and no "wonder" for it is slightly superior. Burbank comes about fourth in the list and there is a slight call for Irish Cobbler, but "round potatoes are never in demand as compared to the oblong varieties." Asked as to the work of the state department of agriculture, through the activities of W. V. Shear, the dealers were unanimous in the opinion that nothing but good could come from it and one stated that for five years past his firm has been advocating official control of the seed potato crop.

THE JAPANESE QUESTION

Continued from Page 781

made by the little brown man. Our constant cry is 'back to the land.' This appeal is of no avail so long as the native born white man must compete with the Oriental.

"Self-preservation of the people of my district demands that I should use every effort in my power to prevent any more land falling into the hands of the Japanese.

"The picture bride is contrary to American ideals, customs and the laws which we make for our own people. Why should we tolerate it?

"That our representatives in the national congress have failed to attack this evil as an international question is only the greater incentive for action on the part of the California legislature."

Citizens have been roused to the pitch of making apepals to land owners, and partially consummated deals for real estate on the part of Japanese minors and land owners have been rescinded.

Cousins

Chester Rowell, editor of the Fresno Republican, suggests:

"We need to take a severe grip on ourselves on this Japanese question. There is no need of jingoism There is no need of offending Japan. There is no need of talking conflict or of going out of our way to discuss Pacific coast defense. Nor is it proper or wise to live in a fool's paradise and assume that by ignoring questions they will cease to exist. To follow with those who seek peace by conceding every issue that is raised is usually the shortest way to bitter conflict The policy which would discuss race questions on a theoretical basis of the brotherhood of man, ignoring the existence of race lines, would be suicidal.

"For in fact human beings are not brothers at all, but cousins. Brothers are of the same blood. Cousins are of mixed blood. We live and move and have our beings by districts or territories or nations, not by the earth as a whole. We are not brothers to the Japanese, but cousins. And there is a vast difference between brotherly intimacy and cousinly amiability

"For one thing, the lines of justice need to be closer drawn. There is no justice in demanding all and in yielding nothing. There is no justice in demanding the treatment of a citizen and the protection of a foreigner. We need to impose on ourselves in the Orient and on the Japanese in this country the duties and the responsibilities of visitorship, not of citizenship. The Japanese who comes to this country with the assurance of his country's protection should realize along with it the limitations of foreign residence. The Yankee or the European who goes to Asia with the power of Occidental gunboats at his back must know that every act of his there is predicated by this same exhibition of power. Let us be nationally just. Let us demand of the Japanese that they demand nothing of us, in California, that would amount to race suicide. Let us concede the same to them in Asia."

AMERICAN MARKETS IN SPAIN

Under the name Sociedad Americana de Expansion Comercial, an organization has been founded in Spain which is to devote its activities to the development of commercial relations between Spain and America. Four permanent expositions will be established for the benefit of American manufacturers who desire to display their goods. The society has four offices in Spain and will wage a publicity campaign and give out information on trade conditions, etc., to all who apply.

CHRISTMAS POT PLANTS

A visit to the greenhouses and florists' growing establishments convinces one that times are not hard nor money scarce. Choice pot plants by the score are labeled "sold," and the prices are an advance on anything before recorded. But the stock is exceptionally fine though it is doubtful if the supply will be equal to the Christmas demand.

Rex begonias are once more coming into popular favor, especially those having red or allied markings in the leaf, the silver sheen types also proving good sellers. The begonia Gloire de Lorraine, so much seen a few years ago, is now a thing of the past, being superseded by three improved varieties known as Cincinnati, Chatelaine, and the still later Melior. The fern supply has been supplemented by a new variety of the Boston fern, known as Woodii, that does not revert to the Boston type as so many do. Poinsettias were never brighter in color or more luxuriant in growth and bring stiff prices. Jerusalem cherries and several other varieties of small fruited cherries are now bright with masses of scarlet berries and the whole floral outlook for Christmas is bright from the dealer's point of view.

TRADE WITH ARGENTINA

During 1918 the United States was the heaviest shipper to Argentina, in value $169,500,000, as against Great Britain's $125,000,000. But the latter country imported from Argentina to a value of $305,800,000 to our $165,100,000. The most striking difference between the imports and exports of any one country is in the case of Japan, which purchased goods of a value of but $2,800,000 and sold to Argentina products valued at $15,200,000. Norway was proportionately the heaviest buyer, paying $4,200,000 and in return received orders to the value of but $900,000.

PALESTINE IRRIGATION

The historic Dead Sea, which is so impregnated with salt that bathers therein cannot sink, is about to be freshened. A tunnel is proposed from the Mediterranean to the Dead Sea, passing under Jerusalem. This would afford an immense power which could be utilized to pump water from lakes and rivers, generate electricity and operate all sorts of industrial and manufacturing establishments. Salt works would be instituted at the Dead Sea end, for the water in that depression contains 200 pounds of salt to every ton.

COFFEE FROM VERA CRUZ

A consular report shows that the coffee exportations from Vera Cruz, Mexico, to the United States in the first six months of 1919 were 8,904,205 pounds, valued at $2,131,815, against 9,901,739 pounds in the corresponding period for 1918, valued at $1,200,640. This figures out a 1919 value per pound at a fraction less than 24 cents, while the 1918 price was a fraction over 12 cents, having almost doubled in one year.

RICE AND PEANUT IMPORTS

In the first half of 1919 we imported but $40,639 worth of peanuts from Hongkong, while for the first six months of 1918 we bought $614,693 worth, or more than 15 times as much. During the same period we imported breadstuffs, principally rice, to the value of $10,361,920 in 1918 and but $3,377,096 worth in 1919. In all exports to the United States from Hongkong the value in 1919 was but a little more than one-fourth as much as in 1918.

Chandler, Arizona, experienced the heaviest snowfall ever known there, on November 28.

WATER DAMAGE ADDS MORE

Great Bargains

IN OUR

$15,000 Implement Sale

Two weeks ago fire destroyed a Picture Framing Establishment on the Third Floor of our Los Angeles street store. The fire was entirely confined to the Third Floor but we got the water. Settlement of damages has been effected and the big clean up sale of implements will now continue. On many implements where water damages were allowed we can make still further reductions. Remember we bought this stock **at a discount below pre-war prices** and have been selling plows, sulkies, mowing machines, pumps, cutters and dozens of other implements **at less than present factory cost.** Any farmer needing these things and having money in the bank from high priced crops is overlooking opportunities of making big savings by not buying needed implements in this sale. Many, after buying one implement have returned and bought everything they could use, realizing that big savings were being made and with factories closing and strikes holding up deliveries, **prices on these very items are sure to go higher.** Look these prices over and write for our full list in the sale. We may have just what you want though not mentioned here:

Casaday Captor 12 inch Riding Plow Horse Drawn (South Bend)
List Price $180.00 Sale Price $150.00
All kinds of plows in the sale at greatly reduced prices

Hurst Sprayers

None better—a great nationally known line at ridiculously low prices. (We cannot spare room for sprayers.)

10 Gal. wheel driver wheelbarrow, tree, vine, vegetable sprayer—list price $37.75. Sale Price $27.00. 20 Gal., list price $47.50, Sale Price $32.50.

Tank sprayer, about 100 gals. horse drawn on high wheels. List price $125.00, Sale Price $75.00.

50 Gal. Barrel Sprayer No. 14, list price $79.00, Sale Price $55.00.

Gas Engines

Our customers have been buying gas engines. We have a few left and quote prices approximately 50 per cent below list. We will include the water damage allowed and clean up the stock. Gas engines are worth real money, too.

Ward Force Pumps

Water didn't hurt the pumps and we couldn't sell them cheaper than the first announced sale price, only $8.15.

Garden Cultivators, Planters, Feed Cutters, etc., on sale at special low prices.

Contractors' Opportunity

We are including Railroad Plows and Wheel Scrapers in the sale AT LESS THAN CARLOAD FACTORY PRICES.

3000 lbs. bolts at only 10 cents per lb.

Assorted sizes—at list they average 22 cents at retail stores—better buy a few at 10 cents.

We are manufacturers of **Foshmir** and **Stockton** Plows and have a supply of Foshmir shares in stock on which we are not profiteering.

We have three grain drills left—the big price cut brought reorders. See page 552 Cultivator ad Oct. 25th AND HURRY.

These items are only samples. Write for complete sale lists, inquiring especially for prices on what you are most interested.

Davenport Implement Co. Phone Bdwy. 5038

Permanent Location: 110-112 North Los Angeles Street . . . . Los Angeles, California

The Bean Outlook

President G. A. Turner of the California Bean Growers Association, who has just returned from an extended trip in the East where he has been looking after the export and other business of the association, is very optimistic as to the future of the bean industry. During his absence Mr. Turner completed arrangements for the sale of some 230,000 sacks of beans for export, and just previous to his return closed an order for 3,500 tons for the relief commission for immediate shipment.

In speaking of the general situation, Mr. Turner said: "In my opinion the unsettled condition of the export bean market is largely due to the delay in signing the peace treaty. There is a large foreign requirement for beans and these orders must ultimately be filled from American stocks.

"The Eastern market will no doubt be greatly relieved by the volume of orders obtained by the association, as they are spot orders and the New York market is bound to reflect the effect of the release of this quantity of beans. Already there is a firmer tone and normal advances on all varieties are looked for in the very near future. The trade in general is taking more interest in beans and there seems to be no question but that we are over the peak and a good business will continue from now on.

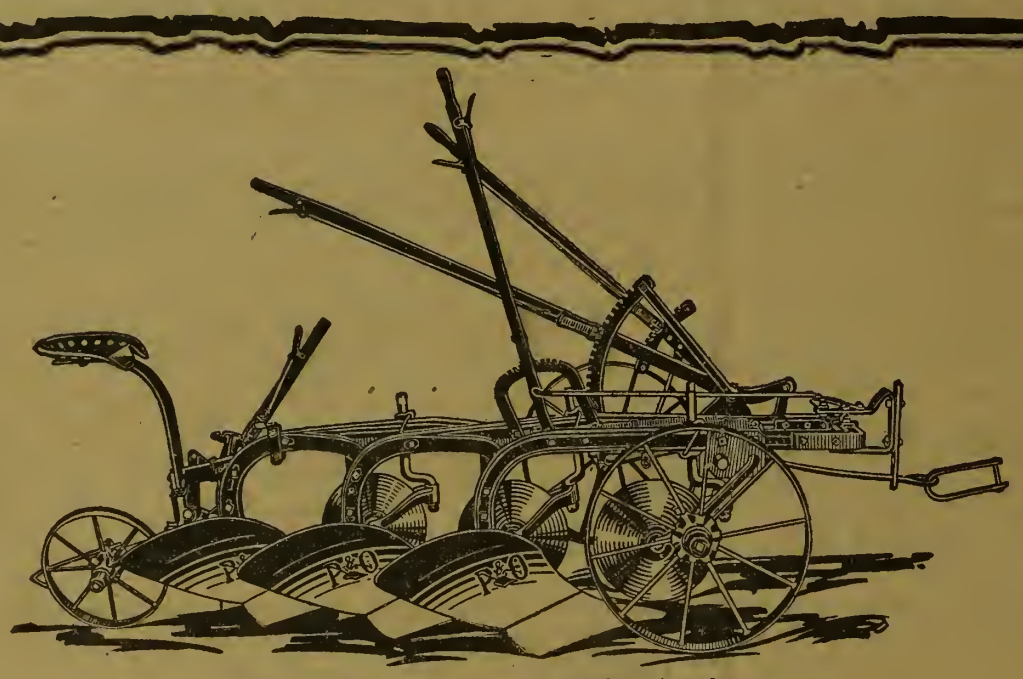
"As to the general 1919 crop conditions. Data thus far secured would indicate a substantial decrease in both American and Oriental crops, the decrease being greater than quoted in the most conservative statements thus far given out.

"I had several conferences with Herbert Hoover, who takes a very optimistic view of the general situation and of beans in particular. Mr. Hoover stated that there is no large surplus of beans today over the world's needs and the American production over our home requirements should ordinarily be absorbed by European nations. He also was of the opinion that the present difficulty in marketing was due to delay in ratifying the peace treaty. The gold and securities of European countries have been greatly exhausted and without raw material to give their people work they are unable to export goods in exchange for food, as is normally the case. They are therefore forced to buy food and raw material on credit until economic conditions adjust themselves, and with a low credit orders are naturally slow in being placed. This he thought was but temporary and with the consummation of peace American products should resume their normal flow toward Europe.

"The movement to the domestic consuming centers is greater at this time than it has been at any period since the termination of the war. The fact that these goods are going into direct consumption is one of the most encouraging aspects of the situation. While prices are still below production cost on some varieties, the general tendency is for a steady improvement. One of the greatest facts favoring the California producer is the excellent quality of this year's production, which, owing to favorable harvesting weather, comes through absolutely free from rain damage and consequently the California product can compete favorably with the product of any other bean producing section.

"The large quantity of more or less damaged beans from last year's crop was one of our greatest problems, but happily these damaged beans have practically all been disposed of.

"Negotiations are now pending on two very large export orders, the details of which the association hopes to be able to announce in the very near future."



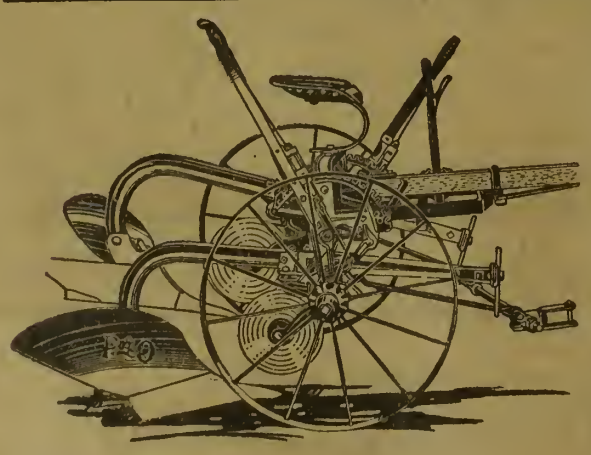
P&O Walking Gang Plow, with Riding Attachment

The Hillside Farmer and his Plowing Problems

HERE are two plows, entirely different from each other in construction, both of which have made good on hillsides and slopes in various sections of the country.

The P&O **Walking Gang** is a big, heavy plow, made in two-, three- and four-furrow sizes, with a wide wheel-tread preventing it from tipping over or losing the line of draft on hillsides. It is strong enough to withstand the strain and pull of all the horses that may be hitched to it. The plow will hold—the farmer's worry is, "will the harness stand the strain?" The two- and three-furrow sizes can be increased one furrow in capacity by the addition of an extra bottom, and the four-furrow can be reduced to a three-furrow by the removal of one bottom. This enables a farmer to regulate the size of his plow to meet his own local plowing conditions.

The P&O **Two-Way Success Sulky** has two bottoms, one right- and one left-hand, one being raised while the other is in the ground. The hitch is adjustable for two or three horses. In using this plow the furrows are all turned one way—down the hill—as the team travels back and forth, one furrow being turned right-hand and the other left-hand. This plow turns around like a racing sulky, and it can be backed up into corners. To say that it is a "P&O" is as good as saying that it is simple and strong; built right.



P&O Two-Way Success Sulky Plow

Call on the International dealer and let him tell more about these plows—the kind that minimize the labor of turning furrows on slopes and hillsides.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA INC.
BILLINGS, MONT. CRAWFORD, NEB. DENVER, COLO. HELENA, MONT
LOS ANGELES, CAL. PORTLAND, ORE. SALT LAKE CITY, UTAH
SAN FRANCISCO, CAL. SPOKANE, WASH.

SWEET POTATOES REQUIRE CAREFUL HANDLING

Sweet potatoes deserve as careful handling as apples. In fact, they will not stand the rough handling that apples are often subjected to in grading and packing.

This statement may surprise many sweet potato growers who are not in the habit of taking pains to avoid bruising this product. The question of proper handling of sweet potatoes is one of several points touched on in a publication just issued by the bureau of plant industry of the United States department of agriculture, Farmers' Bulletin 1059, entitled "Sweet Potato Diseases."

One of the chief barriers to the extension of sweet potato growing in this country is the inability of farmers to keep sweet potatoes in storage so that they can be placed on the market in winter when prices are good. Consequently most of the crop grown in the South is consumed locally or sold at digging time when prices are low. A few sweet potatoes go to northern markets in winter, and even in the South they can not be obtained with any degree of certainty at that season. Specialists of the department of agriculture believe that if storage methods and principles were better understood, far more sweet potatoes would be available for winter use.

FARMERS SHOULD WELCOME THE CENSUS ENUMERATOR

The work of taking the 1920 census will soon be under way. There is no other single project undertaken by either state or federal government that should yield such large and valuable results as a complete census of our population and its industries. This year the director of the census has received aid from the United States department of agriculture in preparing the questions for farmers. He is making a great effort to get the data from the farmers that will be of most value to them when it is compiled. For this reason farmers should give every assistance possible to the enumerators when they call. The director of the census is sending to every farmer an advance sheet to give some indication of what will be asked. If each one will make a particular effort to have this data ready for the enumerator it will not only facilitate the work but will add greatly to the accuracy of the final results.

The data collected from farmers and published in the census is quoted throughout the land by representatives in our legislative bodies, by newspapers, and by other agencies in an effort to influence the state policy toward the farming population. Much harm can be done in this way unless the farmers themselves take every means of getting for the enumerator accurate and reliable data regarding farming conditions.

BEANS

New York warehouses have been cleared of their stock of California beans, 70 carloads having been sold for export to foreign countries, according to word received by Sacramento dealers. As a result orders are now being received from New York buyers for this year's California crop. The bean crop in Central California this year was about one-third of the total yield in 1918, and according to George F. Maddock, vice-president of the California Bean Growers Association, the acreage will be further reduced next year. This reduction in acreage is due to two reasons—the fact that Manchurian beans, produced under cheap labor conditions, are coming into California almost daily and competing with the locally grown product and second, because growers have found it more profitable to raise other crops.

Bean prices have been comparatively low until recently when the association made a number of large sales of 1918 stock at the following prices: Pinks, $6.21; small whites, $6.05; large whites, $6.25; blackeyes, $6; bayous, $6.10. These sales approximated 30,000 sacks.

California growers are urging a tariff on beans that will give them protection from the foreign production.

GET TO THE BOTTOM OF THE DITCH

where there is grass and weeds, and silt and ***TROUBLE.***

Down at the bottom of this space is the machine that does away with both the trouble and the causes — quickly and economically.

THE Martin

A tool for farm use. It makes new ditches — cleans old ones. It builds or tears down borders, dykes and terraces. It grades roads, and moves snow. It works in any kind of soil any place pulling power can be applied.

For HORSE or TRACTOR USE

All-steel construction. Reversible and adjustable blade. A size for every requirement. Each size has wide range of work.

COMPLETE CATALOG FREE. Tell us your earth-moving troubles. We can help.

Owensboro Ditcher & Grader Co., Inc.
1590 Wazee St. Denver, Colo.

Albany Nurseries

"Trees of Quality"

Hardy Northern Grown Trees Give Results

Bartlett Pear
French Prune
Apricot, Apples
Almonds and
All Other
Cal. Varieties

Send us your want list for quotation

Can use a few good salesmen

Albany Oregon

REMEMBER THE

HORSE-SHOE TREAD

MUTUAL INSURANCE COMPANIES MEET

The National Association of Mutual Insurance Companies held its 24th annual convention at Des Moines November 17-21. The meeting was notable for its harmony, interest, and the unprecedented attendance. There were over 630 delegates from 26 different states. A majority of them were representatives of state, county or farm mutuals. The trend in this country with regard to all business is strikingly displayed when the officers of these farm companies whose respective businesses are confined to certain localities meet together and formulate uniform plans for transacting business and combating the fire cost and waste. The farm mutuals furnish sound protection at a cost generally running about 40 per cent of the stock company rates. Better mutual service, inspection and improvement of risk methods to enable further decrease in cost were presented.

The speakers called attention to the fact that the mutual companies are American institutions of and for their policy holders and are a potent factor in keeping insurance money in this country. That 25 foreign companies, doing only a reinsurance business, received more than $50,000,000 in American premiums during 1918 was cited in this connection.

The association instituted a campaign of education to the end that all preventable loss may be combated definitely, systematically and in a spirit of patriotic determination, and resolved that other interests, both public and private, be invited to cooperate "to the end that the continued loss of life and property may be reduced to a minimum and that all carelessness, waste and extravagance may be eliminated as factors in the cost of insurance protection."

HOME TANNING OF SKINS

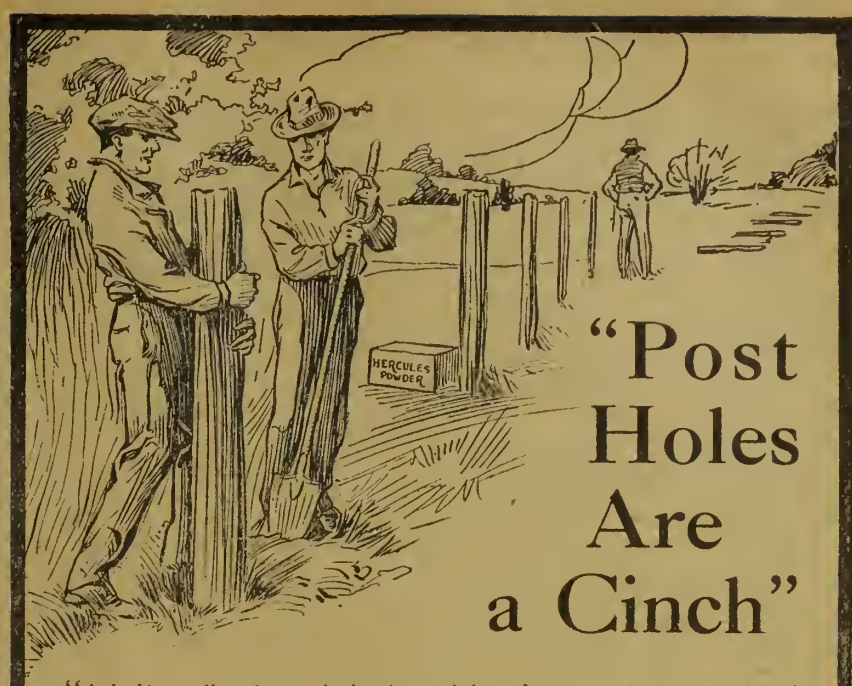
When it is desired to preserve the skins of wild animals which have been shot or trapped, these may be tanned either with the hair on or off, as desired. Hair can be removed from hides by soaking them in tepid water made alkaline by lye or lime. The following recipe for a tanning liquor is furnished by the biological survey of the United States department of agriculture: To each gallon of water add one quart of salt and one-half ounce of sulphuric acid. This mixture should not be kept in a metal container. Thin skins are tanned by this liquor in one day; heavy skins must remain in it longer. They may remain in it indefinitely without harm.

When removed from this liquor, the skins are washed several times in soapy water, wrung as dry as possible and rubbed on the flesh side with a cake of hard soap. They are then folded in the middle, hung lengthwise over a line, hair side out, and left to dry. When both surfaces are barely dry and the interior is still moist, they are laid over a smooth, rounded board and scraped on the flesh side with the edge of a worn flat file, or a similar blunt edged tool. In this way an inner layer is removed and the skins become nearly white in color. They are then stretched, rubbed and twisted until quite dry. If parts of a skin are still hard and stiff, the soaping, drying and stretching process is repeated until the entire skin is soft. Fresh butter or other animal fat, worked into skins while they are warm and then worked out again by a hasty bath in gasoline, increase their softness.

TRACTOR SHORT COURSE

A tractor short course will be given at Riverside, at the citrus experiment station, February 23-28, by the University of California.

The course will be open to owners and operators of tractors and to all interested in tractors and tractor tools. Ten leading makes of tractors in charge of competent factory instructors will be the subjects of the study. Enrollment has been limited to 180 students. Applicants should send their names to Director, Citrus Experiment Station, Riverside, California.



"Post Holes Are a Cinch"

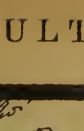
"A half a mile of post holes is no joke when you dig 'em by hand —but with the help of *dynamite* it's a different story. Blasting the holes is a cinch and it saves more than half the work on a job like this. We've saved hundreds of dollars and days of back-breaking work this year by using

HERCULES DYNAMITE

"You'll never know *all* the ways in which explosives can help you in farm and orchard work until you've read 'Progressive Cultivation'. This book tells all about the uses of dynamite for tree planting, draining, clearing land, digging post holes and cellars, road building, grading and many other purposes.

"This 68 page illustrated book will be sent free to any farmer or orchardist who signs the attached coupon and mails it to the Hercules Powder Co."

Send today for "Progressive Cultivation" — you need it in your business.



HERCULES POWDER CO.
1029 Chronicle Building
San Francisco California

Hercules Powder Company, 1029 Chronicle Building, San Francisco, Cal.

Gentlemen: Please send me a copy of 'Progressive Cultivation.'

I am interested in dynamite for .....

Name .....

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KT IRRIGATION SYSTEM

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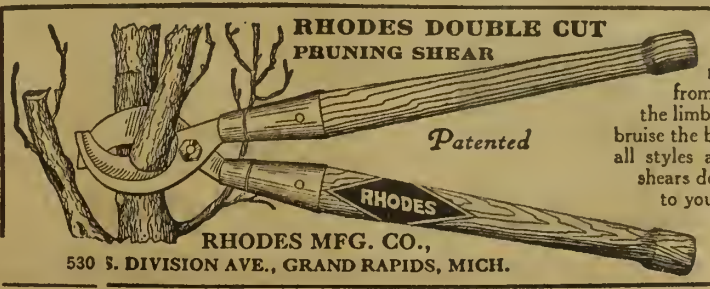

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The above is an extract from California Experiment Station Circular No. 172. The results of this Station's investigations for several years past have shown that the depleted yields of wheat on continuously cropped lands are due to a lack of sufficient available nitrogen. For greatest profits top dress all crops needing nitrogen with the great American Ammoniate.

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Sulphuring Grapes

Will you kindly tell me the proper time to sulphur grapes? Also the method.—Subscriber, Palo Cedro.

It depends entirely upon what the subscriber is to sulphur for. In case it is to prevent mildew the work should be done in the spring time when grapes begin growing and before and after blossoming time. If, however, control of mealybug is desired by the fumigation of the dormant vines that should be done during the present winter season. Full information regarding this work has not yet been given out but will be about the first of January by the state department of agriculture. Investigations along this line have been made by Mr. Nougaret of the department.

Sugar Cured Pork

Do you have a recipe for sugar curing pork?—Subscriber, La Verne.

Several formulas will be given in next week's issue.

Brown Spots in Apple

I just received your "prize books" and am much pleased, especially with the "Farm Questions and Answers," and am going to ask you a couple and see if you can't enlighten us. We have an apparently healthy Baldwin apple orchard, not old but large trees bearing several years. Since carefully picking in October three-fourths of the fruit is affected all through with brown specks, so of course rendering them unsaleable. It does not affect the taste but looks bad. We have seen these specks before in the very large ones where there were but few apples on the tree. The specks are easily discernible through the skin. We used to think possibly it might be caused by too rank a growth of limbs and shade, the fruit not getting sufficient sun. The most affected were the rankest growing trees, receiving irrigating water from the potatoes above them.—Subscriber, La Verne.

This is a serious condition affecting many of our apples. As yet no fungous cause has been discovered and it appears to be more of a physical condition of the apple which develops to a serious extent these brown spots, especially in cold storage.

Barium Carbonate

Several readers have written of their inabiltiy to secure barium carbonate, even from large handlers of chemicals. A letter to the department of agriculture, bureau of biological survey, brings information that several large Eastern concerns handle it, but the only name given on the Pacific Coast is that of Herbert F. Dugan, 1170 Sutter St., San Francisco. Barium carbonate was recommended in a former Cultivator as one of the best of rat poisons.

Yucaipa Valley

Can you give me any information about the Yucaipa Valley; where located, water supply, transportation, etc.? I have noticed in the agricultural news notes of your excellent publication that it is a good apple section.—Inquirer, Omak, Washington.

The Yucaipa Valley is in San Bernardino County a few miles up in the foothills from Redlands and near the entrance to Oak Glen, also an exceptionally fine apple growing section. There are two shipping points: Redlands on the Southern Pacific, Santa Fe and electric lines; Beaumont on the Southern Pacific. We are mailing descriptive circular.

Winter Cabbage

What can you tell me about raising winter cabbage?—A. E. E., Owensmouth.

The varieties used in local fields for winter cabbage are Winningstadt and Cannonball. The former weighs about three pounds and the latter runs five to eight pounds. It requires about five and a half months from seed to harvest. Sown at once they could be marketed in April-May. The shipping season closes about June 1 so contemplating planters should get busy at once.

Sale of War Supplies

Does the government sell trucks or automobiles to discharged soldiers?—Subscriber, Winton.

There have been sales of foodstuffs and also of horses but we have seen no announcement whatever as to motor trucks or autos.

Spray for Codling Moth

What is the best spray and when should it be applied for the control of the codling moth?—Subscriber, Lompoc.

The best spray is an arsenate formula for which was given in the spray special of the Cultivator of August 9. It should be applied at time when the petals are falling from the blossoms, again about ten days later, and again about three weeks later. The number of sprayings and the time of application varies, however, in different sections, but we heard one Los Angeles County grower assert that his apple trees sprayed as above indicated gave absolutely 100 per cent worm free fruit.

Analysis of Water

A subscriber wishes information as to securing analysis of drinking water and as to whether the state board of health will make the analysis. We have a letter from E. J. Lea, director of the bureau of foods and drugs, in which he says: "There is no provision for analyzing samples for private parties as work of this nature is done by commercial chemists."

Nursery Practices

Will you kindly inform me where I can get information in regard to raising of apricot and peach nursery stock, kind of root stock to use, etc.?—Subscriber, Santa Ana.

The most practical book we know of is Bailey's "The Nursery Book," published by the Macmillans, New York. Formerly its price was $1.50, which probably is now materially increased.

Warbles

We noticed several little lumps on the back of our cow. On inspection and pressing a white wire worm about three-eighths of an inch long was emitted. What caused this? What remedy should be used?—Subscriber, Pomona.

This is a case of warbles. The best treatment is to make slight enlargement of the breathing hole of the worm in the skin of the cow and press out the grub. Be sure aud crush the grub after removing. Some destroy by using ordinary oil can filled with kerosene. Some of the kerosene is forced through the opening, which kills the worm.

Volunteering Milo

In regard to your subscriber's inquiry about the feasibility of volunteering milo, will say that I have seen it done in large fields in the Imperial Valley. The second year produced sometimes two crops with a minimum of expense and labor. Have been told that there have been fields volunteered for four years or more, but the crops grew poorer after the second year, as does cotton when volunteered. Although occasionally profitable, it is not considered good farming practice because the land tends to foul, the heads grow smaller and some of the seed reverts to sorghum types. Do not believe volunteering would work where there is much winter rainfall, as the roots might sour, or rot, making a poor stand.—K. S. Harlow, Poway.

Soft Butter

We have a five year old cow which gives a fine flow of rich milk. The cream does not separate well and the

butter comes and stays soft. Is there any remedy? —Subscriber, Ontario.

This question was referred to E. H. Hagemann, who answers:

As correct temperatures play such a very important part in all operations of dairy manufacture, I would suggest to subscriber of the Cultivator who has difficulty in cream separation and soft butter that he use a lower temperature, setting the milk in a deep, small diameter can in water at between 50 and 60 degrees Fahrenheit, skimming the cream in 24 hours after setting, if gravity or natural method of cream raising is employed, as I take it to be practiced in this instance. A good dairy thermometer should be secured so that uniform temperatures can be used and recorded. Churning cream with too high a temperature results in soft and weak body of the butter, which does not easily firm up. Churning temperatures of cream for small dairies in winter should be around 58 to 65 degrees and in summer 52 to 58, depending, of course, on the feed eaten and lactation period of the cows. If cows are fresh and on green feed, composition of the butter fat becomes softer and particles of butter fat globules are larger and therefore a lower temperature in churning should be used. When cows are well advanced in period of lactation and fed on dry material also, composition of butter fat in milk becomes harder and particles of butter fat globules smaller and do not adhere as readily in churning and a higher churning temperature is employed. In dairies of from one to three or four cows, it is even more important to note above changes than in a large one or where butter is made from cream of several herds, or at a regular creamery, as in the latter fresh cows are usually coming in at different periods, which keeps butter fat composition in the milk more even. Churn at such a temperature that butter will come in about 40 minutes, using a lower temperature if butter comes too soft, and a little higher temperature if too hard. A little experimenting to get at the proper temperature for separation of the cream and churning of the butter will bring results.

Peach Pits for Planting

Please give me the general directions for starting peach pits for nursery purposes. Are they grown in a bed or started in nursery rows? When should they be planted? Will the frost hurt them?—J. F. G., Glenn.

Some prefer to place the seeds in boxes and cover with sand; some cover with sacks and others with straw. The one thing to avoid is drying and hardening, so some growers plant seeds direct in the nursery rows in the fall, but this is not the best or safest practice. It is better to cover seeds with sand, either in boxes or elsewhere, and keep them wet until spring. Some growers put them in any sort of box a foot or more deep, either in strata or mixed with sand, with two inches of sand on top. Water well at all times if rains do not come and about March they will sprout. Plow a deep furrow, pull back nearly all the soil, pulverizing it well, until when pits are put in you may cover them with two inches of soil. Freezing will not hurt them and in four months or less they should be large enough to bud.

Walnuts Dying Back

I have taken your magazine for a good many years. This is the first time I have written to you for information. I have two large walnut trees that are dying back rapidly, that is, in the upper branches. They have never been sprayed. Presume it is too late for that. Could they be cut back and grown out again? There are little holes in the trunk of the tree. Presume they were made by birds. Will you please tell me what I had better do with them? Please give me the formula for spraying. Also, if cut back, when is the best time?—E. C. P.

The dying back of these trees is probably caused by some soil condition and most likely from want of moisture after midsummer. If the dead branches are cut out a new top can be grown, but unless water in sufficient quantity is supplied to keep the soil always moist, the trouble will occur again. When cutting the dead branches, cut back to a smaller branch that is growing in the direction needed to fill the space occupied by the branch which is taken out, if possible. Keep the extra sprouts thinned out next summer and keep those desired for permanent branches tied and trained in the proper direction. This pruning can be done at any time from December 1 to March 1, but if done now sap will not run as freely as if done later in the spring. It is not likely any spraying is needed and if so not until next May or June when the aphis appears. Dusting is taking the place of wet spraying and this material can likely be supplied by your nearest Walnut Growers Association much cheaper than a small quantity can be made at home.—J. B. N.

Peppers

How, when and what is the best method of pruning or trimming bell peppers, chili peppers and pimentos. Also what method is used in peeling pimentos?—Subscriber, Jamacha.

Peppers are never pruned when growing commercial crops. If exhibition specimens are desired the larger part of the young peppers can be picked off as soon as the blossoms drop. The peppers are prepared for peeling by being run through a revolving drum placed over a furnace which can be regulated as to the degree of heat. This drum is set on a slope so the peppers will run through and out of the drum by the time they are properly cooked for the peeling process, which is all hand work. Written instructions alone will not enable a beginner to make a success at the start.—J. B. N.

Walnuts Dry

I have two walnut trees five or six years old that bear heavily and the nuts are not good. When they get dry the meats are all dried up. They are the Eureka variety.—Subscriber, Lompoc.

We have known Eureka walnuts to be as described when there was insufficient water to mature them. The Eureka is one of the varieties which leaf late in the spring and also carries its green leaves late in the fall, ripening the nuts much later than the Santa Barbara soft shells and Placentia walnuts. It may be that there is moisture enough in your land to mature the earlier ripening varieties but not enough to carry the Eureka through. If you will keep the soil moist through the summer and give the last irrigation during the last week of August or in the first half of September we think your walnuts will be well filled.—J. B. N

BEAN GROWERS JOURNAL

The California Bean Growers Association, headquarters of which are at Stockton, has just issued Vol. I, No. 1 of the California Bean Growers Journal. Regarding its mission and its field it says:

"It has been truly said that 'Cooperation, not competition, is the life of trade,' and it is cooperation among the growers that is going to keep the association in that position of mutual benefit and value to the industry it now enjoys.

"There are many matters of vital interest to the bean grower on the Pacific Coast, and particularly in California, that must be taken up vigorously. One that is becoming a menace is the importation of Asiatic or foreign crops, which during the past year has assumed large proportions. The time has come for legislative action and the Journal will inaugurate a campaign that it is hoped, with the individual assistance of the members, will result in a protective tariff that will eliminate this detrimental factor in the upbuilding and future of the bean industry. But in order to do all of these things the cooperation of the individual member must be had."

STATE OWNED FLOUR MILL

Minnesota will have an experimental state owned and operated flour mill, when plans authorized by the recent special session of the state legislature are carried out. First steps are now being taken for the ultimate construction of the plant which, it is believed, will be located in either St. Paul or Minneapolis.

The undertaking is in charge of the state railway and warehouse commission, with agricultural college forces acting in an advisory capacity.

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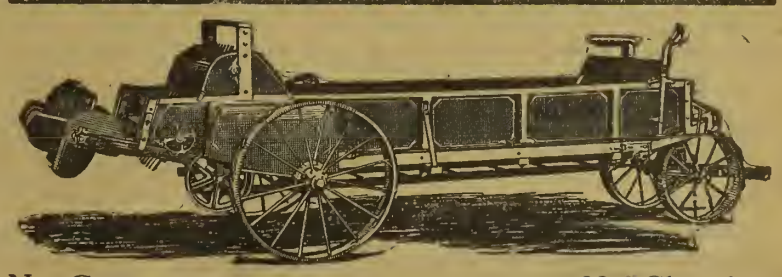

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Right of Way for Pipe Line

I contemplate appropriating water for irrigation purposes. The point of intake lies in the national forest reserve. Is it necessary to obtain a permit from the state water commission for such appropriation? Is it necessary to obtain right of way through the reserve for pipe lines, and if so what is the method to pursue? There is a piece of privately owned property lying between the reserve and the land on which I wish to use the water. How can I obtain a right of way through this if the owner is not inclined to grant such right of way? Does all land in a national forest reserve belong to the federal government, or is there privately owned land therein?—Subscriber, Riverside.

In order to appropriate water in this state it is necessary to file request with the state water commission. This request is then investigated and a permit to appropriate the water issued. As to the right of way through the reserve for pipe line, that matter would come under the jurisdiction of the forest supervisor of the particular forest district. The only method by which you can obtain the right of way through privately owned property is by license of the owner or purchase of either the easement or of the property. It is only the state and its agencies, such as municipalities and those engaged in public service, who have the right of acquiring land through eminent domain. Such lands lying in the national forest reserve which are found to be more fitted for agricultural purposes than for forestry purposes are usually opened for settlement, and in nearly all the forests there are considerable tracts of privately owned property acquired either in this manner or which were owned prior to the organization of the forest reserve.

Employers Liability

Is there a law in any of the northwest or western states known as the Employers Liability Act, which makes an employer liable for damages suffered by an employe while in the act of duty as required by such employer? Does this law apply to all corporations, including railroads, mining companies, farm associations, as well as the private farmer who may employ help on his farm or to construct buildings or handle machinery?—Subscriber, Bonners Ferry.

The federal liability act exists throughout the United States but is applicable only to employes engaged in interstate commerce, that is to say train and engine men employed upon trains which are engaged in such commerce, and is not applied to those engaged in local commerce. Many of the states, such as California, have workmen's compensation acts, but these acts usually expressly except those engaged in agriculture, horticulture or viticulture and those who are mere casual employes. To list the different states embraced in the characterization northwestern and western is too much of an undertaking for this medium.

Property of Minor

I purchased some property but could not get the deed recorded without having someone appointed as my guardian, as I am a minor. Is it necessary to record the deed? What is the difference between an abstract and certificate of title? — K. Kamedian, Reedley.

There is no reason why the deed cannot be recorded, as property may be owned by a minor as well as anyone of majority. Unless the deed is recorded, in case the former owner of the property should execute a deed to someone else, you would have redress only by way of damages against the former owner; you could not recover the property itself. An abstract of title is a book containing the vital wordings of the different instruments constituting the succession or chain of title from the original owner, that is to say the government, down to the individual owning the property. Since the general organization of title companies this method has fallen into disuse. We now have the certificate of the title company which issues statements to the effect that the title stands in the person indicated in the certificate subject to whatever encumbrances there may be. This certificate is usually insured.

Mail Order Shipments

I purchased farm implements upon an installment contract with an Eastern mail order house. I instructed them to include all articles in the same shipment in order that I would be obliged to pay only the one freight charge. The house disregarded my instructions, shipping the implements in different shipments, whereby the freight charges amount to about as much as the goods are worth. I have not as yet paid on the contract, and as to one shipment, I have refused to accept. What shall I do with the matter?—Subscriber, W. H. B.

If by the terms of your letter the acceptance of the order was made conditional on their shipping in one shipment, then you would have the option to refuse acceptance, or you could accept and notify them that you would accept only conditional upon their standing the excess freight, and to such excess freight you would be entitled to credit upon your amount of the payment.

Veteran's Tax Exemption

I am a veteran of the Spanish-American war and have just found out that there is a law exempting me from paying taxes. I notified the tax collector but he informs me that it is necessary that I make an affidavit to this effect in March of each year with the assessor. Am I obliged to pay this year's taxes?—Subscriber, Sawtelle.

Property to the amount of $1,000 of every resident of this state who has served in the army, navy, marine corps or revenue marine service of the United States in time of war and received an honorable discharge therefrom, or if he has not such property, then so much of the property of the wife of such person as shall be necessary to equal said amount, and also the property to the amount of $1,000 of the widow or widowed mother, resident in this state, of every person who has so served and died either during his term of service or after receiving honorable discharge therefrom, and property to said amount of pensioned widows, fathers and mothers resident in this state of such persons so serving, is exempt from taxation provided that this exemption shall not apply to any person owning property in the value of $5,000 or more, or where such wife owns property to the value of $5,000 or more, nor shall the exemption apply to any person who is not a legal resident of the state. Every person claiming this exemption must appear before the assessor and subscribe a form of affidavit prescribed by the state board of equalization to obtain his exemption and give such other or additional proof as the assessor may require. Failure to make this affidavit or furnish this evidence between the first Monday in March and the first Monday in July of each year shall be deemed and treated as a waiver of such exemption. This law has been in effect since the adoption of the amendment to the constitution in October of 1911. The code section enforces the provision of the constitution and was adopted in 1915. The various wars, veterans of which are entitled to exemption, are specifically set forth in the act and embrace the various wars so termed of the nation as well as numerous specific Indian campaigns. You will, therefore, have to pay your taxes for this year, but it might be possible that you could apply to the board of supervisors for their return.

HYATT

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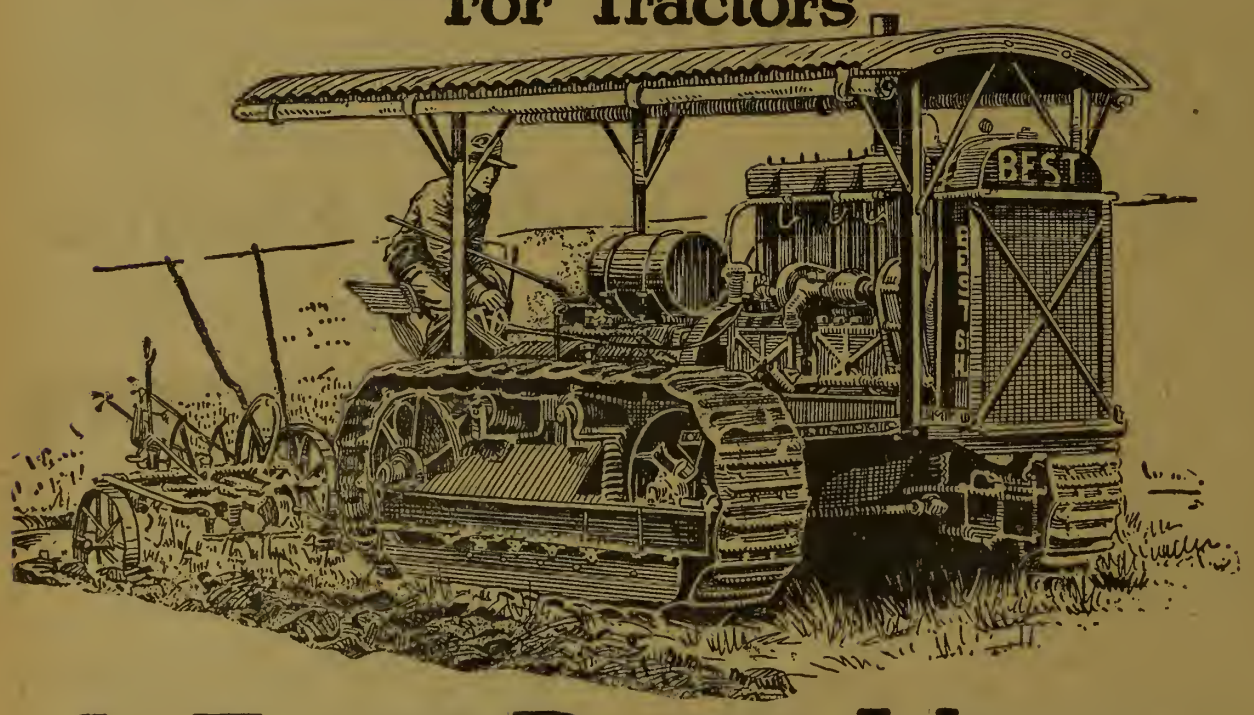
For Tractors



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FORMATION OF NEW HIGH SCHOOL DISTRICT

By Louis B. Stanton

What is the procedure to form a new bigh school district from a part of another district?

Between the first day of October and the tenth day of February of any year, parents or guardians of at least 15 children between the ages of five and 17 as shown by the petition, all of whom are residents of such proposed new district and reside at a greater distance than two miles by a traveled road from the public school house in the district in which such parents or guardians reside, may present a petition to the superintendent of schools setting forth the boundaries of the district asked for, provided that the provision requiring that the petitioners reside more than two miles from school house may be dispensed with when the petition shall be signed by parents and guardians of 50 or more children between the ages of five and 17, residents of a district containing more than 200 children in average daily attendance in the elementary schools of said district. If found sufficient, he shall set the same for hearing by the board, and file the petition accompanied by his recommendation and a notice containing a general statement of the purpose of the petition and of the boundaries of the proposed new district, and when and where the petition will be heard. At least ten days prior to hearing he shall take such steps as the law provides. The children residing in any newly formed district shall be permitted to attend the school in the district from which the newly formed district was constituted until the first day of July next succeeding the formation or change.

Is there any requirement that the proposed new district have the consent of the original district from which it shall be formed?

That is at the discretion of the board of supervisors.

Would the new district be liable for a part of the outstanding bond indebtedness on schools and lands?

The supervisors within 60 days after formation of district determine as to liabilities and improvements.

If a new district is formed from part of a district which is in a high school district, would the new district remain part of the high school district?

Whenever a new school district is formed from territory situated wholly within one high school district it continues a part of the high school district.

Will a bare majority of the votes cast win a school bond election?

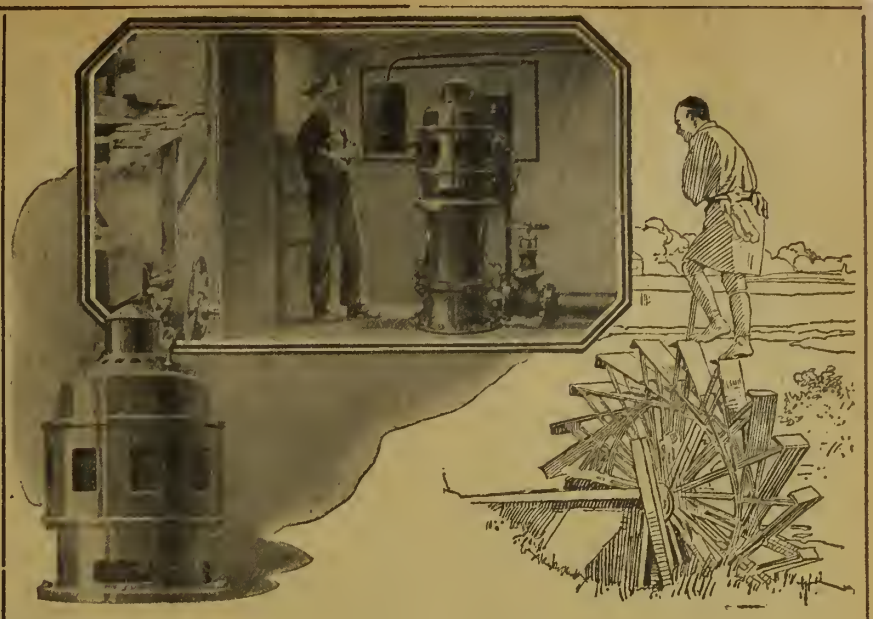
A two-thirds vote is necessary.

Must the people who sign the petition all be registered voters?

No, but they must be guardians or heads of families whose children are residents within the district.

A KNOWLEDGE OF WEEDS

"In order successfully to cope with the weed problem, a knowledge of the life history and habits is most essential," says Director of Agriculture Hecke. "While an 'annual' may be completely eradicated in a given locality by destroying it before it matures and perfects its seeds, a 'perennial' may not. Persistent cultivation may destroy thousands of tiny seedling weeds, but it is not always possible to devote the necessary time and labor. Certain chemicals have been recommended from time to time as efficacious weed destroyers, but many have their own peculiar disadvantages. Plants of the thistle variety may be propagated anew through a small fragment of the root, each capable of producing another plant. The great vitality and resistance of our common weed seeds is becoming more generally known, and most of them in their horny seed coats lie dormant in the moist soil until some action brings them near enough to the surface to receive the benefit of the warm sun and air which encourage germination. Experiments in England tend to show that weed seeds buried for periods as long as 60 years are still viable and will germinate upon being brought to the surface."



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One Manpower — 1-6 HP.

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This installation of a Vertical G. E. Motor connected to a Deep-Well Turbine Pump is operating at 1150 R. P. M. and pumps 1000 gallons per minute from a well 50 feet deep and 12 inches in diameter.

This one pump installed on a ranch at Santa Clara, Calif., is of ample capacity to irrigate 40 acres of prunes and in fact could easily supply 50 to 60 acres.

When selecting motors it is always well to remember cost is not price in the beginning, but cost in the long run.

The electric way is the modern way—the proven economical way.

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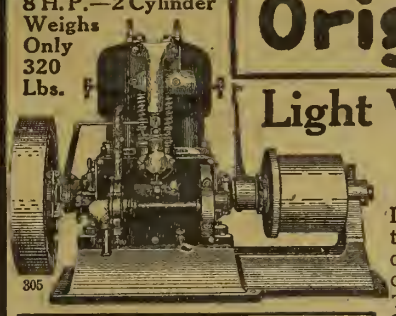
8 H.P.—2 Cylinder Weighs Only 320 Lbs.



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Original 4 to 20 H. P.

Light Weight, All Purpose Farm Engines

Lead the world in superiority of design, material, construction and equipment — no other line of engines built for farm work comparing with them.

They weigh only 40 to 60 pounds per horsepower—only about one-third as much as ordinary farm engines—yet run even more steadily, quietly and economically.

They do every job that any other engine can do, and many jobs other engines cannot do.

Equipped with Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump without extra charge.

Write for Book on Light Weight Engines.

Cushman Motor Works, 804 N. 21st St., Lincoln, Neb.

Cushman "Does More" Electric Light and Power Plant

It does more for the farmer than any other outfit—combining both an Electric Light Plant and a Portable 4 H. P. Power Plant in one outfit, at practically the cost of an electric light plant. Equipped with the famous Cushman Engine and Cushman Self Starter. Ask for Book on Light Plants.

SURFACE IRRIGATION

16 GAUGE 6 INCHES LONG — DOUBLE LOCK SEAM — ONE PIECE BODY

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Registered Shorthorns
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Berkshires---Both Sexes

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California Breeders

have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

CALIFORNIA BREEDERS SALES & PEDIGREE CO.,

C. L. HUGHES, Sales Mgr. Sacramento, Cal.

$30 Holsteins $30

Five weeks old 15-16 pure bred from Waukesha County, the world's greatest cow county. $30.00 crated. Write us for anything in cattle.

DR. J. A. ROBERTS STOCK FARMS
Oconomowoc, Wis.
Western Branch: Hollywood, California

California at the International

By R. P. Royce

THE International Livestock Exposition, held each year at Chicago, is ranked as the greatest livestock show of the world, and the twentieth exposition just closed was conceded to be the greatest show ever held.

The above facts were given to indicate to those not familiar with the Chicago show the importance of the event in the livestock world and to make plainer the splendid record established by California exhibitors.

For years that great show attracted the best of the world's cattle, sheep, hogs and horses, with no thought of what might be produced on the Pacific Coast. California simply was not figured as a source of superior livestock. In 1916 the University of California sent back an exhibit, small in numbers but of a quality that is still talked about, and the success of the university's exhibit was almost like a bomb. The Cornbelt rubbed its eyes. Here were steers and wethers that had never tasted corn, that won premier honors. "Oh, well," the old timers said, "accidents will happen, and the California stuff is just an accident and we probably won't hear of them again." But they were wrong in their calculations. No exhibit was sent East in 1917, but in 1918 the university showed the champion Shorthorn steer and landed other top awards. This year when the show opened the old timers did not forget, but asked, "What is California showing?" In three years California livestock has won a commanding position at the "world's greatest show" and is counted a factor of the first importance.

Before the judging was started Monday, it was generally conceded that California would have the grand champion in the fat classes—the most coveted award of the show—but when the judging was completed California's candidate was out of the running, but another entry was reserve grand champion and some of the other high awards were hanging over the California stalls. Here is the story:

University Jock 3d, a pure bred senior yearling Angus steer, bred and developed by the university and a full brother to the 1916 reserve grand champion, was sent to the top of a strong class.

Over on the other side of the great arena, California Prime Duke, a pure bred junior yearling Hereford steer and a half brother to the 1916 grand champion, being by the same sire, was shown into first place. Down at one end California Grizzly, a blue-grey Shorthorn-Angus cross bred junior yearling that was in the money last year and a half brother to the 1918 champion Shorthorn, was held in third place in class. A little later California Perfect Lady, the hope of California and the pick of the talent for grand championship, a cross bred (Shorthorn-Angus) senior heifer calf, came forward.

California Perfect Lady was generally admitted to be one of the most remarkable animals ever seen in this country, of faultless lines and covered so thickly and smoothly, presented in the acme of bloom by that master fitter Alec McDonald, with all the quality and style that could be asked, she was regarded as a certain winner. But the English judge, J. J. Cridlon, put her in third place and never moved her. The two calves placed above her, while good, in no way measured up to her. The winner was bare of rib and the second, while thicker than the first, was plain on top and not smoothly covered.

Post explanations of the judge were to the effect that she suffered on account of her sex—an explanation that failed to satisfy.

With their best chance gone, the big question in the minds of the California contingent was how the cards would fall with the other entries.

California Majestic, a pure bred senior Shorthorn calf, full brother to California Marvel, the 1918 champion Shorthorn steer, and to California Model, the bull that holds the Coast price record, was an easy winner and his stable mate of similar age, University Jock 4th, full brother to University Jock 3d, downed a strong lot of youngsters.

Up to that time California showed six times and won four firsts and two thirds. In the winnowing out of the breed champions, University Jock 3d beat his younger brother for the Angus championship. A Kansas senior yearling was made Hereford champion; an Ohio junior calf was Shorthorn champion and an Iowa junior calf, a grade Hereford, was champion of the grades and crosses.

Next came the champions by ages. University Jock 3d was champion yearling and the grade Iowa calf was champion calf. The two then met for the final battle. The thickness of covering of the university yearling was not sufficient in the mind of the judge to put him above the calf with the smoother tail head. The calf was made grand champion and California, by the closest sort of a margin had to be content with reserve.

Up in the sheep ring the Scotch shepherd, George Phillips, was going down the line in the wether classes, and when the smoke cleared he came out smiling with a pocket full of ribbons covering the following awards: First prize Shropshire wether lamb; first, second and third Hampshire wether lambs; first prize pen of Hampshire lambs; first, second and fourth Southdown lambs; first pen of Southdown lambs and champion Southdown wether; first, second and third grade lambs and first pen of grade lambs; third prize yearling grade wether and third pen of grade yearlings. In all classes the strongest sort of competition was met.

In the barrow show California barrows were making a strong exhibit. The university had entries in several breeds, and M. & A. L. Bassett, pioneer Poland China breeders of Hanford, showed in their breed classes. The exhibit sent forward by the Bassetts represents the first time that any California breeder has entered at Chicago. The Bassett and the university entries were highly commended by the Eastern hog men.

The university's senior Duroc barrow was seventh in a large class and the pen of three was placed second. In the junior class the university was second in the single and pen classes.

The Bassett barrows stood fourth and fifth in class and second in the pen division. The university Poland June yearling was fifth in class and the pen was fourth.

In passing it may be said that the barrow show was counted the strongest show ever made in America.

After the showing made by California livestock in the fat classes interest very naturally centered on what would happen when Little Sweetheart, the two year old Shorthorn heifer shown by T. S. Glide of Davis without defeat at Sacramento, Los Angeles, San Francisco and Portland, measured strength with the best Shorthorn females of the United States and Canada. This is what happened: Little Sweetheart won her class, was made senior champion and later grand champion. In order to reach her final rating it was necessary that she defeat the champions of all the big Eastern shows, but she apparently had as little trouble turning the trick among the elite of the Shorthorn world as she had in her native state. Little Sweetheart was bred by the Ormondale Company, Redwood City. She was sired by Golden Goods Jr., the Ormondale herd bull, and her dam is Sweetheart, a cow bred in Washington. She was purchased by Mr. Glide and was developed by Billy Robertson, who handles the Hillcrest herd.

This is occasion for congratulations to Mr. Glide and is added evidence of the possibilities of the Pacific Coast as a source of the highest class breeding stock.

All in all, the 1919 International was the greatest show yet held and California livestock played a very conspicuous and spectacular role, at times holding the attention of thousands.

Not the least, by any means, of the honors that fell to California was winning the Clay-Robinson special for the best five steers, wethers and barrows owned by an agricultural college.

In competition with ten or more of the leading institutions of the country the exhibit made by the animal husbandry department of the University was awarded that decision. In making the award on the steers the judge

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—	
Milk 338 days	13,849.40
Butter	866.23
At six years—	
Butter seven days	34.13
Milk	532.40
At five years—	
Butter seven days	28.85

She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia. Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho
Anoakia Breeding Farm
Santa Anita, California
Anita M. Baldwin, Owner W. H. Taylor, Supt.

We Can Spare One of Our Service Bulls

AND OFFER

KING WINNIE SEGIS WALKER, (No. 244437), born November 16th, 1917. (Just in his prime.)

SIRE—"KING WINNIE," a show bull, whose dam has produced 31,034 pounds of milk in a year and made over 1,200 pounds of butter in a year.

DAM—"ALLENVAIL SEGIS WALKER" 7 day record—at 4½ years old—447.90 pounds of milk and 22.71 pounds butter.

She is a daughter of "KING WALKER SEGIS"—28 A. R. O. daughters—and her dam is a granddaughter of two of the greatest bulls of the breed, "KING SEGIS" and "HENGERVELD DE KOL." As an individual this bull will satisfy anyone. He is straight and right in every way.

If you are in need of a service bull for either a grade or purebred herd, do not overlook writing for photo, price and extended pedigree. We are offering him very reasonably.

BURR FARM East 26th Street and Downey Road
Office: 8th and Towne Ave., Los Angeles

Recent Sales

both public and private have demonstrated the value of animals bred on Sunnyside Farm. Our experience in breeding Holsteins and Poland Chinas might assist you in making the right selection.

R. F. Guerin **Visalia, Cal.**

WHO WILL BUY

Giant Bob? the greatest Poland China Boar on the Pacific Coast.

In January I will disperse my entire herd of big type Poland Chinas. Bred sows and gilts—open gilts—few boars. *Giant Bob*, the 1919 grand champion, also sells. Write for catalog. Sale date announced later.

Chas. Gatewood **Fresno, Cal.**

declared them to be a credit to any exhibitor and paid a high compliment to their uniform quality and superior fitting.

To Professors Gordon H. True and J. S. Thompson, to Alec McDonald and George Phillips, to M. and A. L. Bassett and T. S. Glide should be given great credit for carrying the message to the East that California is a great livestock state and for their courage in going to meet the strongest competition on new ground.

ESTABLISHING HEREFORD AND PERCHERON HERDS

Romeo Jacks of Monterey, one of the prominent cattlemen of this state, has purchased the foundation for a high class Hereford herd. Jacks secured about 75 well bred females from a number of the leading breeders of the Middle West.

Jacks has also purchased a number of very high class Percheron horses, including a two year old son of Lycee. This colt, secured from A. L. Robinson of Pekin, Illinois, is said to be one of the top colts of recent years, and cost $5,000.

Jacks bought two weanling fillies and a yearling filly from Robinson and several mares from Frank Harris, Tremont, Illinois.

If you have MONEY to save, you will find it to your advantage to write for our folder that tells you all about banking by mail.

Write—now!

DEPARTMENT B

ANGLO-CALIFORNIA TRUST COMPANY BANK

SAN FRANCISCO

TIRES 1/3 LESS

Perfect new tires, all sizes, non-skid or plain, fabric or cord. Prepaid on approval. 8000 to 10,000 Miles Guaranteed

30,000 Customers. Catalog Free. Agents Wanted.

Service Auto Equipment Corporation

941 Service Bldg., Kansas City, Mo.

TAGUS SALE

From the number of inquiries made for catalogues for the Tagus Ranch sale at Tulare on Tuesday and Wednesday, December 16 and 17, the Merritt-Bowers Company is going to have about the best attended public sale of the year. The diversity of the offering is expected to bring many buyers interested in their particular line.

The implement and horse sale on the first day is a drawing card that will attract a great crowd, as the kind of implements and the manner in which they are maintained on Tagus Ranch are of widespread knowledge. The useful lot of horses and mules, wagons and harness will bring another set of interested buyers, and the 15 head of Percheron, Belgian and Shire stallions and mares will be practically a sale in themselves.

The Shorthorn offering on Wednesday is expected to draw on a wide territory for buyers of the Scotch tops, the greater number of which are bred, and many have calves at foot. There are 100 Shorthorns. The milking Shorthorns will receive spirited bidding by a number of breeders who say there is a greater demand than supply of this kind of Shorthorn. Owing to the fact that the 30 head of two year old Hereford bulls are unregistered, they will furnish bidding for range cattle men.

Ord L. Leachman of Sacramento, who is handling the auction, says that he has had many requests for catalogues from Arizona, Nevada and Oregon as well as all parts of California.

MORRIS SALE PROVES ATTRACTIVE

Indications are that there will be an unusually large number of Holstein enthusiasts on hand at the A. W. Morris & Sons sale of registered Holsteins at state fair grounds, Sacramento, December 18. This is the first time that buyers have had a chance to buy females from the best families in the Morris herd in such large numbers, and as cows from two to five years old are the rule in this sale and they are practically all bred to the chief herd bulls in the Morris herd, it means that scores of breeders will take advantage of the occasion to try and secure some of them. Dairymen who want a Morris bull of service age within the next few months will need to get him in this sale, as every one of service age in the herd has been consigned. The latest addition to the bull entries is the two year old King Clorinda Sadie Vale, who has an average of 31.95 pounds butter in seven days for his seven nearest dams. The sale will be managed by California Breeders Sales and Pedigree Company, with Col. Ben A. Rhoades on the block, Col. Geo. W. Bell in the ring and C. L. Hughes in the box.

STRIKES OUT SEVEN-DAY TEST

At a recent meeting of the board of directors of the American Jersey Cattle Club it was decided to strike out the rule that provides for the making of seven day Jersey records of milk and butter fat production. Although this rule has been included in the test rules of the A. J. C. C., it has been seldom used in recent years and was considered an obsolete and useless form of test work from the standpoint of Jersey breeders.

A new ruling admitting special qualifications of animals in the 305 day class was added and this will open the way for the making of records that will give a cow more rest between tests than the 365 day test.

At the present time a campaign is under way to have 10,000 Jersey cows on test. This camapign was inaugurated several months ago and has resulted in the testing of many more Jerseys. There are now more than 4,000 Jerseys on test and it is expected that the 5,000 mark will shortly be passed.

Thirteen thousand official year's records have been completed by Jerseys. The average production of these records is 7,932 pounds milk and 424 pounds fat. This includes cows of all ages from yearlings to aged animals, 17, 18 and 19 years old. The average production of 4,500 aged Jerseys, cows five years and over, is 9,218 pounds milk and 487 pounds fat.

The present San Mateo County grand jury contains 13 women.

Get top prices on your furs!

We are the largest manufacturing furriers in the West and can therefore give you highest prices on your raw furs. Not a cent is deducted from the price we quote for grading or commissions — you get it all.

The very day we receive your furs our check is placed in the mail for you.

And here's the test: If our check isn't large enough, send it back and we'll return your furs. Isn't this fair?

We pay all Parcel Post and Express charges

Our half century of fair and square dealing with trappers is your guarantee of honest, satisfying treatment.

Pack up your furs and ship to us today. Write for our price-list —right now!

H. LIEBES & CO.

175 Post St., San Francisco

Ship your furs to the nearest market-and get your money quick!

IN THE SALE

A 30 lb. cow that made over 25,000 lbs. milk and 1,081 lbs. butter in one year, bred to King Morco Alcartra, son of Tilly Alcartra.

A 29 lb. daughter of Korndyke Queen De Kol's Prince, bred to King Morco Alcartra. She is the dam of Miss Gelsche Walker Korndyke, former state record two year old.

A 28 lb. 4 year old daughter of a 33 lb. cow that made over 1000 lbs. butter in one year. This cow herself recently completed a record of over 22,000 lbs. milk and 908 lbs. butter in one year.

A 27 lb. granddaughter of Colantha Johanna Lad bred to King Aaggie Mead, full brother to Aggie Acme of Riverside 2nd, the world's yearly official record cow.

A 26 lb. daughter of a 30 lb. cow that made over 1000 lbs. butter in one year, her dam also a 1000 lb. cow. Bred to Sir Aaggie De Kol Mead, son of the world's record heifer Miss Valley Mead De Kol Walker.

A daughter of King Meade of Riverside that made over 750 lbs. butter in one year as a two year old. She is fresh.

A daughter of King of the Pontiacs that made over 700 lbs. butter in one year as a two year old. Bred to Sir Aaggie De Kol Mead.

A daughter of the great Aaggie Acme of Riverside. Bred to Sir Aaggie De Kol Mead.

A 20 lb. three year old daughter of Prince Gelsche Walker out of a 28 lb. four year old.

A 21 lb. three year old granddaughter of Aralia De Kol bred to King Aaggie Mead.

A 22 lb., three year old granddaughter of Aralia De Kol out of a daughter of Riverside Sadie De Kol Burke. Bred to King Aaggie Mead.

A 21 lb. three year old granddaughter of Colantha Johanna Lad. Bred to King Morco Alcartra.

A daughter of Prince Gelsche Walker out of a 1000 lb. dam that has a 30 pound 1000 pound daughter.

A granddaughter of Pontiac Korndyke bred to King Aaggie Mead.

A granddaughter of Aralia De Kol out of a 26 lb. three year old daughter of a 30 lb. three year old.

A daughter of Segis Pontiac De Kol Burke out of a 31 lb. dam. Bred to King Aaggie Mead.

A granddaughter of King of the Pontiacs, with 850 lbs. butter in one year as a 3 year old. Bred to King Morco Alcartra.

A first calf daughter of a cow that made over 27,000 lbs. milk and 1093 lbs. butter in one year.

A 22 lb. daughter of Albina Butter Boy, sire of the 40 lb. cow Albina Josie. Bred to Sir Aaggie De Kol Mead.

A daughter of Changeling Butter Boy out of a 26 lb. daughter of Tidy Abbekerk Prince. Bred to Sir Aaggie De Kol Mead.

A granddaughter of Aralia De Kol out of a 900 lb. half sister to Tilly Alcartra. Bred to Sir Aaggie De Kol Mead.

A daughter of Prince Gelsche Walker with a record of 701 lbs. butter in 305 days as a 3 year old. Now fresh.

A three quarter sister to the world's record heifer Miss Valley Mead De Kol Walker. Bred to Sir Aaggie De Kol Mead.

A daughter of Segis Pontiac De Kol Burke out of a 26 lb. daughter of King Meade of Riverside that made 644 lbs. butter in one year as a 2 year old. Bred to King Morco Alcartra.

Two daughters of a cow that made over 21,000 lbs. milk and over 925 lbs. butter in one year.

A daughter of Segis Pontiac De Kol Burke out of a dam that made over 19,000 lbs. milk and over 870 lbs. butter in one year.

THIS OPPORTUNITY COMES ONLY ONCE

The 1000 lb. Sale

70---High Class Yearly Record Holsteins---70

at Public Auction for A. W. Morris & Sons Corporation

State Fair Grounds Sacramento, Cal. Thursday, December 18, 1919

In the development of a herd of registered yearly record Holsteins that is unequalled in the world, A. W. Morris & Sons Corporation have for years worked to a definite end with certain families within their herd, and have to the present time kept a very large percentage of the females of those families in their own herd.

Fire Compels Changes in Plans

The fire in November which destroyed cow barn, silos, and feed, makes it imperative that this great herd be reduced, and the Morris firm must part with a wonderful group of young cows bred in the strongest lines within their herd. This forced sale affords a buying opportunity that in all probability will never again be equalled in sales from this herd.

Sale Should Be the Making of Many Herds

There are scores of comparatively small herds in California that would immediately go to the front by the addition of some of the wonderfully bred females in this sale, in calf as they are to three of the greatest bulls Morris has ever owned. And for the man who wants to buy the sort of foundation stock that will drop calves that will sell among the tops in any sale ring, or be the sort of breeding animals upon which to build the highest class herd, the opportunity in this sale is equally great.

Every female in this offering has a 1000 lb. yearly butter record, is out of a 1000 lb. dam, is by a 1000 lb. sire, or is bred to a 1000 lb. bull.

No sale of registered Holsteins ever held before has closely approached this one in respect to 1000 lb. yearly record breeding, and the opportunity is therefore unprecedented for the purchase of animals with yearly record backing that is being demanded more and more by discriminating buyers.

Every female in the sale is of milking age, and is either fresh or bred to a 1000 lb., a 1100 lb., or a 1300 lb. bull.

The females in this sale are bred to three of the most richly bred yearly record bulls of the breed: SIR AAGGIE DE KOL MEAD, son of the 1100 lb. junior 3 year old, Miss Valley Mead De Kol Walker; KING MORCO ALCARTRA, son of the greatest dairy cow in the world, Tilly Alcartra; KING AAGGIE MEAD, full brother to Aaggie Acme of Riverside 2nd, who holds the world's strictly official yearly butter record.

Every bull of service age in the Morris herd, except of course the herd bulls, is in this sale

There are only ten young bulls of service age in the Morris herd, so closely have private sales kept the surplus down, and every one will be in this sale. It will then be well for every breeder and dairyman who wants one of the yearly record bulls from this herd, this year, to be on hand sale day.

An Added Attraction

The richly bred 2 year old bull KING CLORINDA SADIE VALE will be sold. He is sired by King Korndyke Sadie Vale 27th, and out of K. S. P. Clorinda, the former state record senior 3 year old daughter of King Segis Pontiac. She made 29.39 lbs. butter from 621 lbs. milk in 7 days, and is out of a 28.31 lb. daughter of King of the Pontiacs. This bull is an excellent individual and has an average of 31.95 lbs. butter in 7 days for his 7 nearest dams.

Every animal in this sale is positively guaranteed to be a breeder. No animal is tuberculin tested

Catalog free on request. Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneer: COL. BEN A. RHOADES, LOS ANGELES COL. GEO. W. BELL, TULARE

Corn Belt Herd Hampshires

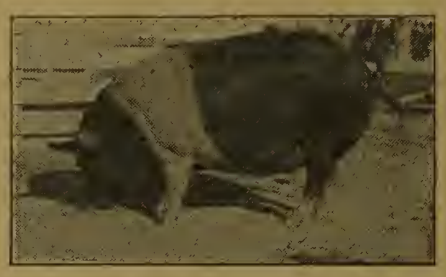
At head of our great herd of Hampshires is Black Beauty, by Young Senator. Black Beauty won the blue ribbon at the big Los Angeles show. He is by same sire as the sensational "Big 4" junior yearling sows seen at Los Angeles, one of them, Florene 2d, being grand champion of the show.

Our lineup of brood sows is in keeping with the great sire in service. Young stock for sale. Letters promptly answered.

Roy E. Fisher **Lincoln, Neb.**

The Poplars----Hampshire Headquarters

Our reserve grand champion sow Wavelet at the big Los Angeles show is the mother of 8 little Waveiets—a flourishing family. We won 1st on boar and 3 sows bred by exhibitor, also 3 other herd prizes. We were in the money on aged boar, twice on junior yearling boar, and once next the top on junior boar pig. All young stock the get of our great boar, The Harvester Again. Write us your wants.



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A Few Big, Roomy, Arch-backed Sows and Gilts of Choice Breeding For Sale—Bred For Fall Litters

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Weanling pigs of both sexes at very reasonable prices Visit the ranch and see these animals

Ortega-Underhill-Rancho THOS. T. DINSMORE, Mgr. Santa Barbara, Calif.

Three fine Junior Yearling Boars of unsurpassed breeding and high individual merit.

Business Herd Hampshires

The pioneer grand champion herd of Hampshires is directly responsible for the growing interest in the Hampshire breed today.

It has brought to light the winning blood lines in our big shows. It has furnished foundation stock for numerous new herds throughout the state and is still doing so; 200 pigs bred, bred sows, and sows with litters for sale.

Llano Vista Rancho, F. A. Langdon, Mgr., Perris, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147 at head of our great herd of brood sows.

HARVEY'S CHOICE Grand Champion Boar at Los Angeles 1919

LOOKOUT CHEROKEE Grand Champion at Liberty Fair

SIOUX QUEEN Grand Champion at P.P.I.E.

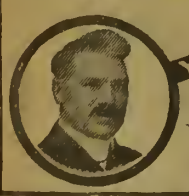
18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager **Redlands, Cal.**

TREAT Your Own Herd for **Abortion**

Stop Losing Calves! You can *wipe abortion out* of your herd and *keep it out.*

YOU CAN RAISE CALVES LIKE THIS



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Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. **Los Angeles**

When Writing Advertisers, Mention the Cultivator.

The Shrinkage in Shipping

The shrinkage in the weight of cattle in transit to market is the difference between the weight of the animals at the point of origin and their weight on arrival at destination.

A writer in Field and Farm explains:

The net shrinkage is the difference in the weight at the point of origin and the weight of the animals when sold at the market after taking a fill. The shrinkage of cattle in transit is such a variable factor that no one can say definitely how much it will be during a journey, but by the use of very large numbers of cattle an average shrinkage will be obtained which may be used as a basis for estimating the amount of shrinkage on cattle shipped under similar conditions. The net shrinkage ranges all the way from 15 to 75 pounds a head, or from 2.14 to seven per cent, depending upon the length of time and other conditions. The time that cattle are in transit varies from less than 24 hours to more than 72 hours. The normal shrinkage may be regarded as from three to six per cent of live weight. The extent of the shrinkage depends upon various factors, among which are the conditions at the time of shipping and the treatment during the drive to the loading pens; the length of time the cattle were held without feed and water before being loaded; the nature of the fill before loading—the greater losses occurring when this consists of succulent grass, beet pulp or silage; the climatic and weather conditions at the time of loading, while in transit and at the market; the character of the run to market, delays on the road—greater shrinkage naturally being caused by slow, rough runs; the time of arrival at market. If the cattle arrive just before being sold the fill is light. Cattle that are shipped a long distance and arrive at market during the night do not fill well. If they arrive the afternoon before or about daylight of the same day they generally take a good fill. An exceedingly large fill at market is not desired, as it will detract from the selling price. The shrinkage of cattle varies in direct proportion to their live weight when conditions are the same and all other factors are equal. The shrinkage on cattle is proportionately smaller for each 12 hours they are in transit after the first 24 hour period is passed. The difference between the shrinkage of cows and steers is not so great as is ordinarily supposed. Steers will usually shrink somewhat less than cows of the same weight. The shinkage on calves seems small, but under normal conditions it holds about the same proportion to their weight as is found with grown cattle. The shrinkage of range cattle in transit over 70 hours during a normal year is from five to six per cent of their normal live weight. If they are in transit 36 hours or less the shrinkage will range from three to four per cent of their live weight. The shrinkage of fed cattle does not differ greatly from that of range cattle for equal periods of time. Cattle fed on silage have a large gross shrinkage, but usually fill so well at market that the net shrinkage is small. Pulp fed cattle shrink more in transit than any other class and also present a greater net shrinkage. For a long journey the common method of unloading for rest, feed and water is to be preferred to the use of feed and water cars. Cattle should be weighed before shipping wherever practicable, since a comparison of this weight with the sale weight will show the net shrinkage. Moreover this weight at point of origin may be of material benefit to the shipper in case of a wreck or a very poor run to market and save delay in having claims adjusted

Dispersal Sale of Percherons

The sale of registered Percherons owned by S. Wade and Son, at Le Grande, Oregon, resulted in the 35 head of Percherons selling for $19,675. or an average of $418. Col. Harry C. Cranke, Nez Perce, Idaho, did the selling, and his work was most effective and satisfactory. The attendance was good and a very large per cent were bidders. The topper, Eunice 109608. foaled in June, 1914, was a first prize winner at Oregon state fair and also winner of the blues at several county fairs in Oregon. She was bought by Carl Whittemore for $1,000. Other sales were:

2, Pershing. John C. Baxter, Joseph, Oregon, $900.
3, Dudley. Carl Whittemore, Joseph, $550.
5, Bergan. E. M. Pratt, Baker, $250.
6, Bertel. G. I. Wade, Summerville, $500.
7, Jussand. W. A. Pratt, Haines, $425.
8, Ponsett. E. R. Carver, Elgin, $300.
9, Maud M. W. J. Townley, Hot Lake, $175.
10, Ardith. W. N. Devine, Elberton, Washington, $325.
11, Edel. John Curry, Flora, Oregon, $350.
12, Marguerite and colt. F. C. Gowing, Joseph, $425.
13, Ethel. Carl Whittemore, $400.
14, Primrose. J. C. Baxter, $475.
15, Bell M. H. S. Coleman, Joseph, $400.
16, Anna Bell. W. N. Devine, $350.
17, Queen May. Whittemore, $600.
18, Josephine. Willis Moss, Le Grande, $575.
19, Sylvia. Devine, $400.
20, Pauline. Coleman, $225.
21, Roxanne. Curry, $300.
22, Bethel. H. C. Laird, Enterprise, $600.
23, Dorine. W. A. Pratt, Haines, $275.
24, Grace. J. E. Mason, Central Point, $425.
25, Joan. Geo. W. Pratt, Haines, $425.
26, Lurline. W. W. Kuhn, Lostine, $710.
27, Eunice, Whittemore, $1,000.
28, Nyra. E. M. Pratt, $475.
29, Yvonne. J. I. Wardell, Le Grande, $550.
30, Rosella. Kuhn, $500.
31, Jewel. Baxter, $700.
32, mare colt. Whittemore, $200.
33, mare colt. J. M. Frintts, Cambridge, Idaho, $225.
34, mare colt. Baxter, $250.
35, stallion colt. Floyd McKinnon, Le Grande, $125.
36, stallion colt. Townley, $110.

DEMAND FOR RABBIT SKINS

In recent years several kinds of fur, formerly of so little value as to offer no inducement to the trapper, have been raised in price, and consequently collecting them has been made profitable. Rabbit pelts, which are extensively used by hat makers, are among these products. One Eastern concern has announced that it will need 10,000,000 rabbit skins during 1919 and 1920, and it desires as far as possible to secure them from American sources. This is an indication of a market which should interest many a farmer boy. This fall and winter dried, cased rabbit skins will probably bring a reasonably good return. They are sold by the pound which will contain seven or eight skins. Many farm boys can readily acquire, in the course of the winter, large numbers of skins which will net them a tidy sum and, in addition, they will have the pleasure of trapping experience. The United States department of agriculture will supply any inquirer with the names and addresses of possible purchasers of rabbit skins and other pelts.

From three to five cars of hay are being shipped daily from Pixley, Tulare County, to Los Angeles, over 1,000 tons having been shipped. The Tipton and Earlimart districts are also shipping large quantities of hay.

Artois, Colusa County, has doubled its rice crop each year for four years

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL

For the Human Body — It is penetrating, soothing and healing, and for all Old Sores. Bruises, or Wounds, Felons, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.75 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet B.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

PREVENT
BLACKLEG

VACCINATE WITH
BLACKLEG VACCINE
(BLACKLEGOIDS)
BLACKLEG AGGRESSIN
(GERM-FREE BLACKLEG VACCINE)
BLACKLEG FILTRATE
(GERM-FREE BLACKLEG VACCINE)
WRITE FOR FREE BOOKLETS.
ANIMAL INDUSTRY DEPARTMENT OF
PARKE, DAVIS & COMPANY
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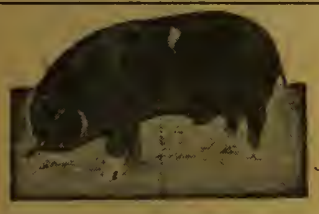

Size and Type

Are combined in the unusual lot of Poland Chinas I am now offering. Both sexes and all ages. I readily refund the money to any dissatisfied purchaser. Write me what you want —I have it—priced reasonable.

R. J. Yates, Orland, Cal.

The Leading Live Stock Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References. The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

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QUALITY distinguishes Guernsey Products

The highest natural golden yellow color, delicious individual flavor, and high content of butter fat combine to make Guernsey milk in greatest demand by discriminating consumers. Write for our free booklets.

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Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holstein Cattle

December 18. A. W. Morris & Sons.
December 20. J. E. Walker, Winton.
January 30. C. F. Mohnike, Anglola.
April 8. Breeders Sale, Tulare.

Herefords

During last week of February, Pacific Coast Hereford Cattle Breeders' Association.

Shorthorns

April 17, Butte City Ranch, Butte City.

Berkshire Swine

February 14. J. Francis O'Connor, Santa Rosa.
February 15. F. J. Sandercock, Sacramento.
February 16. Muddux & Son, Sacramento.
February 18. Western Berkshire Congress, Davis.
April 17. Butte City Ranch, Butte City.

Duroc-Jerseys

January 14. State Duroc-Jersey Breeders Association consignment sale, Davis.
January 15. Harvey M. Berglund, Dixon.
January 28, Diamond Bar Ranch, Spadra, Los Angeles County.
January 29, Winsor Ranch, Bonlta, sale in Los Angeles.
January 30, Ireland Ranch, Owensmouth, Los Angeles County.
February 4. Fresno County Duroc-Jersey Breeders Association, Fresno.
February 10. Glenn County Duroc-Jersey Association Sale.
February 18. Tulare County Duroc-Jersey Association Sale.

Poland Chinas

January 10. Fred Gatewood, Fresno.
January 17. Bassett, Ross and Crawshaw, Hanford.
January 24. H. D. McCune, Hanford.
January (date later). Chas. Gatewood, Fresno.
January 27. Geo. V. Beckman and Sons, Lodi.
January 31. Hale I. Marsh, Modesto.
February 3. Les McCracken, Ripon.
February 6. Tulare Poland China Breeders Association, Tulare.
February 12. San Joaquin Poland China Breeders Association, Lodi.
January 13. Glenn County Poland China Breeders, Orland.
February 21. Merced County Poland China Breeders Association, Merced.
February 21. McSwain, Merced.
February 28. Kings County Poland China Breedrs Association, Hanford.
March 13. Haag & Bernsteln, Hanford.

Shropshire Sheep

April 17. Butte City Ranch, Butte City.

Shetland Ponies

April 17. Butte City Ranch, Butte City.

Carnation Segis Colantha, the fine two year old heifer purchased in the March Guaranty Sale by T. J. Gist & Sons, Tulare, from Carnation Stock Farms, Seattle, recently dropped a fine bull calf by the $106,000 bull Carnation King Sylvia, and placed on official test made the very creditable record of 17.81 pounds butter in seven days. She is unquestionably a heifer of great promise and her son should develop into a bull of real herd heading qualifications.

Hartog Gerben Hengerveld, a four year old Holstein heifer owned by Carnation Stock Farms, Seattle, recently completed an official record of 30.62 pounds butter from 726 pounds milk in seven days. She is sired by Ollie Johanna Sir Fayne, and is therefore half sister to the 39.74 pound four year old owned by W. J. Higdon, Tulare.

The twelfth daughter of Matador Segis Walker to freshen in the Carnation Stock Farms herd at Seattle has recently completed an official record of 23.24 pounds butter in seven days at the age of two years four months. The daughters of this sire are a remarkable lot of individuals and are showing uniformly high production as they freshen.

On January 30 C. F. Mohnike, Angiola, will disperse his herd of about 50 registered Holsteins and 25 very high grade Holsteins. The herd is an exceptionally attractive one and is headed by a son of a 32 pound cow. The sale will be under the management of California Breeders Sales and Pedigree Company, Sacramento.

Idleaze Pontiac Lass, the great 42 pound four year old daughter of King of the Pontiacs, dropped a bull calf in July by Champion Echo Sylvia Pontiac, son of May Echo Sylvia, and his average of 857.9 pounds milk and 41.74 pounds butter is possibly not exceeded by any bull yet born within the breed. The dam and her wonderfully bred son are owned by Carnation Stock Farms, Seattle.

The Hereford breeders are already

McCune Has the Right Type

in Poland Chinas—along with type is found size, smoothness and quality —all necessary in the production of high class breeding animals. When you buy a McCune Poland China you get these outstanding qualities along with individual merit.

These worth while boars are in use in my herd—King's Massive Orange, McCune's Buster by Giant Buster and a son of Surprise Prospect.

My sale in Hanford, January 24, 1920, will consist of the right type, well bred, well grown Poland Chinas.

H. D. McCUNE LEMOORE, CAL.
CATALOG READY JAN. 1st

What Counts?

More Pork or Show Ring Records—I raise Poland Chinas that produce pork quick—they are also show hogs—but first they must be prolific and mature early.

BIG MODEL FELLOW

my herd boar was reserve grand champion at state fair. He is the sire of the prize winning barrows. Write me if you want this kind.

J. F. McSwain Merced, Cal.
BRED SOW SALE FEB. 21, 1920

Experience Has Taught

us that if we make money out of hogs we must have prolific sows bred for quick maturity. They must be of the type producing the highest quality of pork. A careful survey of my herd will convince you that I am breeding the kind you want to breed. I have breeding animals—both sexes—for sale at reasonable prices.

Les McCracken *Ripon, Cal.*
Bred Sow Sale, on farm, Feb. 3rd, 1920

TAKE NOTICE! THE HIGHEST PRICE paid for a car load of fat hogs at the California International Livestock Show came from the

BASSETT
Herd of Advance Type Poland Chinas

Many firsts, seconds, senior champion sow and GRAND CHAMPION SOW were won in the open classes, proving without a single doubt we are breeding the kind the packer wants and the farmer should raise. Animals of all ages, high class young boars, bred sows and gilts for sale at reasonable prices.

M. Bassett & Son Hanford, Cal.

Stop, Look and Listen!

An offering consisting of bred sows, gilts, open gilts and herd boars sired by or bred to, MATCHLESS BIG BOB, LAKESIDE DEFENDER, MAJOR HADLEY WONDER and LIBERTY BOND, will be obtainable.

WHEN ? ? ? Watch for further particulars
WHERE ☞ LAKESIDE STOCK FARM

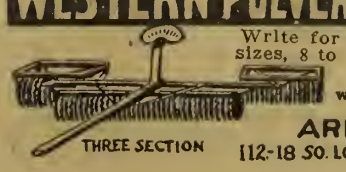
Geo. V. Beckman & Sons Lodi, Cal.

Blood Will Tell

In the show ring, in the feed lot or on the butcher's block. The Poland Chinas bred by me fulfill all these requirements. They make money for me and they will for you. My prices for good breeding animals are always reasonable.

Eugene Miner Lodi, Cal.

WESTERN PULVERIZERS PACKERS AND MULCHERS


THREE SECTION

Write for complete catalog, describing all sizes, 8 to 21 feet in width. Write today.

Call and see these machines when in the city.

ARNOTT & CO. Inc.
112-18 SO. LOS ANGELES ST-LOS ANGELES

STRAIGHT SHAFT

-the solution of the Alfalfa problem!

Germain's

PROVEN HAIRY PERUVIAN ALFALFA

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(THE PROVEN STRAIN)

After a thorough investigation the Southwest Cotton Company purchased 50,000 pounds of Germain's Proven Hairy Peruvian Alfalfa to plant on their own Arizona ranch. What MORE proof of the SUPERIORITY of Germain's Proven Hairy Peruvian Alfalfa do you need?

Buy NOW—before the supply is gone.

Write for free folder and testimonial letters.

Germain Seed & Plant Co.
Established 1871
N. E. Corner
Sixth & Main Sts.
Opp. P.E. Depot
Los Angeles, Cal.

LAST CALL

FOR THE GREAT

TAGUS RANCH SALE

TULARE, CAL. **Dec. 16 and 17**

Tuesday, Dec. 16
Commencing 9:30 A.M.

Gang Plows, Walking Plows, Subsoilers, Grain and Alfalfa Drills and All Kinds of Implements Like New, Too Numerous to Mention, Being the Modern Equipment on one of America's Largest Farms. Implements sell first on Tuesday Morning.

25 Farm Wagons,
20 Sets Harness.
15 Registered Percheron, Belgian and Shire Stallions and Mares.
5 Registered Jacks.
30 Work Horses.
25 Mules.
25 Unbroken Saddle Horses.

Wednesday, Dec. 17
Commencing 9:30 A.M.

58 Registered Shorthorn Cows and Heifers, Bred to Scotch Topped Bulls.

25 Registered Shorthorn Scotch Topped Bulls.

13 Registered Milking Shorthorn Cows and Heifers.

6 Registered Milking Shorthorn Bulls.

30 Unregistered Hereford Two-Year-Old Bulls.

THE LARGEST AUCTION OF THE YEAR

Shorthorns Herefords Percherons Belgians
Shires Jacks Work Horses Mules

Great Assortment of Implements

MERRITT-BOWERS CO., TULARE, CAL.

Ord L. Leachman, Auctioneer and Sales Mgr., Sacramento

busy with plans for their entries in the spring sale to be held the last week in February. It is planned to sell about 40 bulls and about 40 females in this sale, and especial effort is going to be made to offer a high class lot of bulls suitable for range purposes. The sale will be under the auspices of Pacific Coast Hereford Cattle Breeders Association, of which J. I. Cazier, Wells, Nevada, is president, and J. A. Bunting, Mission San Jose, secretary. C. L. Hughes, Sacramento, will manage the sale.

A very select small herd of registered and grade Holsteins will be dispersed at public auction on Saturday, December 20, by J. E. Walker on his farm near Winton, Merced County. The sale will be managed by C. L. Hughes, Sacramento, with Col. Ben A. Rhoades, Los Angeles, on the block.

Preliminary arrangements are being made for the Holstein Guaranty Sale at Sacramento late in March, and reports indicate an offering that will still further increase the fame of these feature sales. It seems safe to predict that the Holstein breeders are going to completely surpass their previous efforts in the matter of offering high record breeding and high class individuals.

Geo. W. Bell, Tulare, auctioneer of pure bred livestock, and who handled so successfully the recent sale of Poland Chinas for Wm. Bernstein of Hanford, reports the booking of a number of sales for the coming year and that the interest in pure bred livestock is steadily increasing.

The boys of the Inglewood union high school boys' pig club have just purchased from Geo. A. Stingle, Lark Meadow Ranch, El Monte, seven pure bred Berkshire bred gilts and four open gilts. They started out to get grade pigs, but concluded that if there was money in grades there was more money in pure breds. They will hold an auction sale of pure bred Berkshires in May, when they expect to have about 40 head to sell. Mr. Stingle is donating a pure bred gilt to the boy that makes the best record with his hog. The Inglewood union high school also bought an Ames Rival brood sow and a Masterpiece boar from the same herd.

At the sale of Herefords held during the week of the American Royal Livestock Show, Kansas City, R. C. Jacks of Monterey was one of the liberal buyers. Included in his selections was a son of Paragon 12th and a daughter of Bocaldo 6th at $2,000, a daughter of Beau Picture at $1,400, a son of Gay Lad 9th at $1,150 and a daughter of Bright Stanway at $1,000. At private treaty he secured practically the entire herd of O. F. Wilson & Son, Burlington Junction, Missouri.

One of the greatest Holstein cow counties of the United States is Waukesha, Wisconsin. Besides pure breds the county has a vast number of grade Holsteins which are fifteen-sixteenths pure bred. Owners of these cattle are reducing their stock and centering on registered stock. The J. A. Roberts Stock Farms of Oconomowc have engaged part of their activities in distributing five weeks heifer calves from this stock to dairies in all parts of the country. A uniform price is made on these. In order to secure more general distribution the Roberts Farms have established a western branch at Hollywood in this state.

Fresno is building a million dollar high school.

HOPKINS BUYS HIGH CLASS SHORTHORNS

C. Harold Hopkins of Woodland, who is establishing a select herd of Shorthorns, is now in the East for the purpose of securing a number of high class females. Hopkins attended the great sale held at Anoka Farms, Waukesha, Wisconsin, and purchased the richly bred heifer Anoka Gloster 5th, a daughter of the imported bull Rusper Champion, and out of a Duchess of Gloster dam.

Hopkins also attended the International sale and was a bidder on the choicer lots. He selected the white senior yearling heifer Silver Bud, a daughter of Maxwalton Stamp 2d and out of a daughter of Avondale, for $3,500; Collynie Missie 2d, a roan senior heifer calf by Regal Stamp and out of a Marr Missie dam, at $1,550, and Lancaster Lady, a white two year old by Cottonwood Sultan and out of a Mary Anne of Lancaster dam by Burnbrae Sultan.

Hopkins expects to purchase several mares before returning. Hopkins has recently purchased a 500 acre tract just west of the University Farm, Davis, and plans to maintain his herd at that location.

NEW HEREFORD BULL FOR BARNGROVER

H. M. Barngrover, San Jose, proprietor of the Veramont Hereford herd, is now in the East visiting the leading herds. Barngrover attended the American Royal Livestock Show at Kansas City and the International at Chicago. While at Chicago he purchased from J. C. Robinson of Evansville, Wisconsin, a seven months old bull calf sired by Bonnie Brae 8th and out of a Domino dam. A full sister to the Barngrover calf sold in the Taylor sale for $7,000.

Better Than a Thirty Pounder

Eldorado Winifred, 30.21 lbs. butter in 7 days as a junior four year old, owned by Alex Whaley, Tulare.

GUILFORD ELECTED SHROPSHIRE DIRECTOR

At the annual meeting of the Shropshire Record Association held at Chicago during the International, W. S. Guilford of the Butte City Ranch, Butte City, was elected to a directorship.

The election of Guilford was a well earned recognition of the services he has rendered the Shropshire breed on the Pacific Coast.

MOLASSES FOR STOCK

One of the helps of the livestock feeder which is being used more generally every day is the crude, or low grade, molasses from a sugar mill. The value of this feed has been found to be not only in the actual nutrition content, as indicated by the analysis, but because of its quality—not exactly succulency, but akin to that—which makes it an appetizer. Especially is it valuable where the cows are not permitted to run on pasture or where they are not permitted to exercise. The molasses acts both as a digester and tonic and takes the place of green feed which tends to keep the cows healthy and increases all their normal functions, such as the milk producing powers. Then, too, dairy cows which are confined in small areas often lose their appetites, and when they do milk production naturally drops off. By adding a little molasses to the ration they will regain their appetites and besides eat more than they did without the molasses, which of course increases their milk production.

Farmers in Kern and adjoining counties are fighting the proposal of the Miller & Lux estate to form an irrigation district.

The Tulare Holstein Sale

The offering of registered Holsteins at Tulare on November 25 was greeted by a crowd of buyers of very satisfactory size and the sale was entirely successful in spite of the fact that no catalogues were on hand, due to loss in the mails. The offering presented a wide spread in values, from choice individuals of substantial breeding down to plainly bred young stuff in very poor condition. The cattle were widely distributed among 20 buyers, and many good bargains were secured. The top of the sale was a three year old heifer consigned to J. P. Phillips, sold to R. L. Holmes for $900. The averages of the various consignments tell something of the differences in age, breeding and condition that influenced prices. Col. Ben A. Rhoades did his usual effective work on the block, with Col. Geo. W. Bell in excellent form in the ring. The sale was managed by California Breeders Sales and Pedigree Company, Sacramento, with C. L. Hughes in the box. Following is a summary of the various consignments, with names of buyers and prices paid:

Consigned by J. P. Phillips, Fresno

Lady Cristena Mechthilde, Mack L. Borrer, Tipton; $500.

Lady Mechthilde Gertrude Burke, R. L. Holmes, Modesto; $405.

Queen Nika Pietertje, R. L. Holmes, Modesto; $900.

Total, $1,805. Three head averaged $602.

Consigned by R. C. Sturgeon, Tulare

Lady Rue Alcartra, H. G. Ball, Tulare; $500.

Odette of Sleepy Hollow 2nd, J. A. Knight, Tipton; $455.

Total, $955. Two head averaged $478.

Consigned by W. J. Higdon, Tulare

Lady Joy Korndyke Hengerveld, W. W. Johnson, Tulare; $325.

Aaggie DeKol Acme Segis, R. L. Holmes, Modesto; $330.

Prilly Queen Meadmore Segis, H. G. Ball, Tulare; $440.

Leda Hartog Ormsby 2nd, H. G. Ball, Tulare; $660.

Aaggie Artis Fobes, W. W. Johnson, Tulare; $810.

Segis Ormsby Pietertje 2nd, H. G. Ball, Tulare, $400.

Model Rose Abbekerk America, Robt. T. Curtis & Son, Exeter; $725.

Total, $3,690. Seven head averaged $527.

Consigned by Post-Card Ranch, Corcoran.

Post-Card Princess Pearl, J. A. Knight, Tipton; $165.

Post-Card Pet, Frank Martin, Visalia; $165.

Alta Carnotha, J. A. Knight, Tipton; $180.

Princess Aralia Juliana, J. A. Knight, Tipton; $200.

Princess Pearl Nephele, J. A. Knight, Tipton; $375.

Maid Manona Pauline, J. A. Knight, Tipton; $150.

Charlotte Mercedes McKinley, Robt. T. Curtis & Son, Exeter; $200.

Queen DeKol Mary Wayne, A. Williams Jr., Fresno; $250.

Post-Card Queen Aileen, J. A. Knight, Tipton; $150.

Nancy Netherland of Twin Pine, H. E. Vogel, Fresno; $410.

Mechtchilde Ormsby 2nd, R. L. Holmes, Modesto; $525.

Floria Burke Hartog, R. L. Holmes, Modesto; $360.

Total, $3,130. Twelve head averaged $261.

Consigned by Alex Whaley, Tulare

Eldorado Helena, R. L. Holmes, Modesto; $105.

Eldorado Countess, J. A. Knight, Modesto; $200.

Rose Burke of Eldorado, Mack L. Borrer, Modesto; $270.

Eldorado Beryl, H. E. Spires, Carruthers; $3,000.

Helena King Segis, R. L. Holmes, Modesto; $335.

Lady Canary Zenobia, D. H. Storm, Tulare; $310.

Mennonite Maid, R. L. Holmes, Modesto; $290.

Total, $1,810. Seven head averaged $258.

Consigned by L. Y. Montgomery, Fresno

King DeKol Jetze Burke, W. A. Duncan, Tulare; $105.

Welch Pietertje, R. L. Holmes, Modesto; $255.

White Juliana DeKol, H. Halff, Tulare; $280.

Nancy Korndyke daughter, Frank Martin, Visalia; $110.

Oleander Burke, H. E. Spires, Carruthers; $260.

Canary Nancy Korndyke, H. E. Spires, Carruthers; $140.

Roma Canary 2nd, H. E. Spires, Carruthers; $100.

Not sold:

Romeanna Douwe, W. J. Higdon, Tulare; $390.

Dora Aconeth Korndyke, W. A. Duncan, Tulare; $120.

Nancy Canary, J. A. Knight, Tipton; $120.

Douwe Burke, H. E. Spires, Carruthers; $235.

Lassiejean Pietertje 2nd, H. Halff, Tulare; $225.

Continued on Page 811.

Duroc-Jerseys

Bred and raised under right conditions. Correct as to type and size.

D. C. Cummins & Son

VISALIA, CALIF.

CLOSING OUT

Public Auction Sale

Wednesday 10 A.M. **DEC. 17th**

Having sold my ranch and entered other business, I will sell to the highest bidders my entire herd of

REGISTERED O. I. C. SWINE

Together with stock, implements and miscellaneous articles. My ranch is

Two Miles South and 3-4 Miles West of Wasco Union High School

HOGS

Herd of hogs consists of 12 brood sows that have just weaned their fall litters. These sows are all proven breeders and have raised an average of eight pigs.

Nineteen gilts from 6 to 9 months old.

All selected from the spring litters.

The sows and oldest gilts will be bred to my new herd boar, recently purchased from Oregon.

One hundred pigs ranging from six weeks to three months old. Some dandy sow pigs in this lot.

One 8-months'-old boar; one 1-year-old boar; one 1½-year-old boar.

Certificates of Registration given with all sows, gilts and boars.

Pedigrees furnished with all young pigs where requested.

Any stock purchased by buyers from a distance will be crated and put F. O. B.

Terms Cash **Free Lunch at Noon**

JAS. LITTLE, Owner **Col. O. S. Grant, Auctioneer, Wasco**

The Pride-Prize-Profit-Breed

JERSEYS

If you never owned Jerseys—you've never received "paid in full" value for your feed bills. Jerseys are the most economical cows ever bred. They feed for their udder — not beef and bone.

They produce the richest quality of milk, a butter fat average of 5.37%. They thrive in the cold Northwest or hot Texas. Jerseys are truly the investment breed because they are the most adaptable and most economical.

Ask breeders for pedigrees and prices and let us send you some interesting facts about the money-making Jersey.

The American Jersey Cattle Club
324-C West 23rd Street
New York, N. Y.

Venadera Herd

Offers two Register of Merit cows. Bred to Altama Interest and Jap's Perfection Owl. Due Dec. 13 and Jan. 1.

Guy H. Miller
R. 1, Modesto, Cal.

All My Records
Are made under ordinary dairy conditions
The Farmer's Cow is
The Jersey
YOUNG BULLS FOR SALE
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Modesto, Cal.

Young Jersey Bulls
For Sale
One at the head of your herd will pay big dividends on his cost. Write to
W. J. Hackett
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Jersey Bull
FOR SALE
A fine straight one, bred right, priced right.
S. F. Williams
Chico, Cal.
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JERSEYS

3 BULLS — No. 1 born Mar. 1, 1919. Sire, Our Noble Mayfair Hero. — **3 BULLS**

No. 2 born Oct 1, 1919. Sire our Kathie's Eminent. — All from high record cows in Arden herd — No. 3 born Dec. 20, 1918. Sire same as No. 2.

ARDEN DAIRY CERTIFIED. EL MONTE, CALIF.

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The Wonderful Qualities of Our Senior Herd Bull

United with those of his wonderful dam Gertie Abbekerk Maid (a twice 34 lb. cow and whose sire has 27 A.R.O. daughters) are exemplified in his sons and daughters

Not a loafer among them—loafers don't pay—his first ten daughters made 18 lbs. of butter in 7 days from 54.4 lbs. of milk. His sons are proving their ability to transmit these great production qualities to their get. We are offering young bulls at very reasonable prices. Purchase one of these bulls from a family of producers. You will not be disappointed.

Rosamaines Ranch, Stalder Bros Owners **Riverside, Cal.**

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The Famous OilPull in a Smaller Size

The 12-20 was brought out to answer the demand for a small size, light weight tractor of the same durability and efficiency as the other OilPulls. It is an OilPull through and through and you know the reputation these famous tractors have earned.

The 12-20 has proved to be an exceedingly desirable tractor for use in California.

The OilPull is built in four sizes — 12-20, 16-30, 20-40 and 30-60 H.P. Send for catalog.

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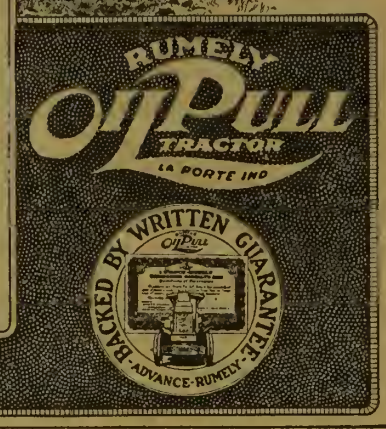

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Duroc-Jersey bred sows and gilts. These are the kind you have been wanting to get and we still have some of the real good ones left. Farmers and dairymen start now with the profit making hogs. We deal fairly and our prices are reasonable. Duroc-Jerseys from the Key Herd of the Pacific Coast make good everywhere. Write today for full particulars.

H. P. Slocum and Son
Willows, California

3 Sensations 3

Winsor's Giant Orion — The Largest Boar on Pacific Coast
Great Sensation 3rd — The Largest Boned Boar. for Age on Coast
Great Model — The Most Popular Sow Sire on the Coast

We can supply Duroc-Jersey sows or gilts bred to these boars that will return three dollars for every dollar invested. We will be pleased to answer your inquiry.

Winsor Ranch R. K. Walker Manager **Bonita, Cal.**

WE ARE READY

to ship you a Duroc-Jersey gilt, boar or pig and guarantee it to please you. Size, breeding, quality and rapid growers are predominant in our herd. Write for what you want—you'll be satisfied with the results.

The Gardiner Ranch **R.F.D. 4, Sacramento, Cal.**

YOUR FUTURE DEPENDS

on your selections now. In Duroc-Jerseys we have some gilts and boars of type, breeding and conformation that we guarantee to satisfy and at reasonable prices. Write for full description.

Greenwood Farms
H. C. Witherow, Mgr. Live Oak, Sutter Co., Cal.

Why Not

get just what you want and need when you buy Duroc-Jerseys?

Orion King Gano is a proven sire of Duroc-Jersey swine—the kind you will eventually buy so why not now? Our prices are reasonable and worth the price.

Donald H. Graham **Lancaster, Cal.**

Words that Spell P-R-O-F-I-T

Good Duroc-Jersey swine. I have sows and gilts bred to King Orion Jr., grand champion at San Francisco, also to a son of Great Sensation and a son of Pathfinder—bred to farrow in March and April. These are the kind that return a profit and are priced that you may make a profit. Write for further particulars.

F. M. JOHNSON NAPA, CAL.

Dairymen, Stockmen---Notice!

GROW MELILOTUS ALBA
on Alkaline or Any Poor Soil
AGGELER & MUSSER SEED CO.
620 South Spring Street LOS ANGELES, CAL.
Write for our Bulletin on Grain

Natural Growth the Test

There is slight question but that many livestock producers are inclined to overlook the importance of selecting their herd material on the basis of natural growth rather than upon the basis of forced development.

In the last analysis the great bulk of our pure bred livestock finds its way into the hands of large and small operators who have been convinced of the efficiency of better blood and who expect to cheapen their production costs and increase their net profits by the use of well bred sires and dams. To them the whole proposition is cold blooded and unless pure breds can justify themselves under practical conditions the general expansion of the industry will be retarded and values affected.

What the average man wants is breeding stock that proves its merit over plainer sorts without the need of too great assistance from the feeder. In other words, the average man does not care to invest in breeding stock that has been forced and crowded from birth, but, after a few experiences with pampered breeding material, he prefers to make his selection from herds where natural growth, along with other practical essentials, is found to highest degree.

In every herd will be found certain lines of breeding that are responsible for the better productions — young things that seem to grow away from the balance of the herd without being accorded any extra care. This superior natural growth constitutes one of the most valuable features that can be developed and herds or flocks that have been built around those lines of breeding invariably produce a class of material that seldom fails to make good under average conditions.

The writer does not in any way minimize the importance of proper feeding and care—any kind of livestock is entitled to both—but he feels that more breeders should recognize the practical importance of natural growth and make their selections with the idea in mind that quality, supplemented by good feeding and management, will result in raising the general standard and give added economic value to pure bred livestock and go far toward correcting the idea held by many that registered livestock lacks hardiness and tends to "go back" when handled under ordinary conditions. That idea from time to time bas been justified because not a few men who style themselves breeders seem to believe that because an animal happens to be sired by a registered sire and out of a registered dam it must he right regardless of whether the progenitors have been selected with due stress on natural growth. An inferior animal can very often be "fed out" until it appears to have exceptional size but it takes real inherent merit to demonstrate its superiority under ordinary methods of management.

There is another point that suggests itself in this connection—an animal loaded down with fat may have a number of faults obscured, but faulty conformation usually can be detected in animals in moderate condition—a fact that buyers should keep in mind when selecting herd material. — R. P. R.

New State Record in Higdon Herd

A great official record has been made by the registered Holstein heifer Ruby Pietertje of Forest Hill 2nd, owned by W. J. Higdon, Tulare. Freshening as a senior four year old she has to her credit 39.74 pounds butter from 667.5 pounds milk, and is now milking 105 pounds per day. She was sold in the last Guaranty Sale at Sacramento by Carnation Stock Farms, Seattle. She comes rightfully by her great production, being sired by Ollie Johanna Sir Fayne, son of the 31 pound show cow Ollie Watson Prima Donna, and out of a 27 pound granddaughter of Hengerveld De Kol. Her sire already has several other daughters with records from 30 to over 33 pounds butter in seven days. She is a beautiful individual of unusual size, and will this year be given an opportunity to make the large yearly record of which she is capable. She made her big record with the greatest ease, and in the total of 12 days that she has been on test has made 66.50 pounds butter, an average of five and one-half pounds per day.

Another good record recently made in Mr. Higdon's herd is that of Fay Tritomia Hengerveld, a daughter of the richly bred show bull Mutual Fobes Longfield De Kol. In seven days she made an official record of 30.39 pounds butter, while her junior two year old daughter, by Prince Riverside Walker, made 17.16 pounds butter in seven days and is making a nice 30 days' record. These records were all made under the care of Harry L. Redd, and supervised by men from California agricultural college.

Remarkable Year's Record

The Guernsey heifer, Minnehaha's Papoose 67732, leads all dairy heifers of her age of any breed with her record.

This remarkable young heifer started her record May 25, 1918, when she was 22 months of age. From that time until May 24, 1919, she produced 11,623.6 pounds of milk and 678.37 pounds of butter fat.

She originally started her test on April 1, when she was 21 months of age, but as she was served on May 7, 1918, her record was continued so that she not only produced this remarkable amount of milk, but she also carried a calf 265 days during her record. She dropped her second calf February 14, 1919, not being dry a day during her test, and during the short month of February, in which she calved, made 44.97 pounds of butter. She affords an interesting illustration of the ability of a cow to carry a calf during test and to come back after giving birth to a strong healthy calf, and without being dried off for a day.

She holds the world's record for a heifer starting test under two years of age, not only of the Guernsey breed, but for all dairy breeds.

Minnehaha's Papoose 67732, because of her extreme youth, was started on test more for the purpose of keeping her growing than any expectation of getting a big record from her. The result of the experiment was that she gained nearly 400 pounds in weight during the year; she dropped two large, healthy calves within ten and one-half months of each other.

Frank Anderson Sale of Berkshires

Frank B. Anderson held his sale of Berkshires on the state fair grounds, Sacramento, December 2. The day was cold and rainy but even with this handicap a sufficient number of buyers were present to absorb the offering at very satisfactory prices. Fifteen bred sows and gilts were sold at prices ranging from $100 to $240 and the open gilts and spring pigs brought from $40 to $75. A number of young boars were sold, including two old enough for service, at from $35 to $140. The top of the sale was the bred sow Natomas Beauty, by Riverby Prince 9th, the sire of a grand champion sow. She was bred to Ideal Royal Lee, the sire of the grand champion sow at the Southern Berkshire Congress Show 1918. She was purchased by E. S. Train, San Francisco, for $240. Mr. Train also purchased four other sows, paying from $145 to $225. J. Francis O'Connor, Santa Rosa, purchased a number of open gilts, includ-

Take Good Care of Your Live Stock

DO NOT let them suffer from neglect. Keep up their efficiency and value now, when so much is dependent on them.

Keep them free from the pain of strained tendons, the aches and tortures of *swellings, lameness, bruises*—with Sloan's Liniment. Its use for 38 years recommends it to you.

Apply Sloan's Liniment to the throbbing part and let it *penetrate without rubbing.* Prompt relief will follow, the pains and aches will subside, better work and better worth will be your reward.

Three sizes—the bigger the bottle the greater the thrift. Get *yours* today. 35c., 70c., $1.40

Sloan's Liniment *Keep it handy*

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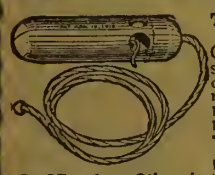
CHECK by return mail! Ship your furs—all kinds—today while market is active! Small shipments get same attention as large. Experts grade every pelt and give you top prices. **Write for FREE book of Trapping, Shipping Tags, Market Reports, Etc.**



Taylor Smoke Torpedo Gets every skunk in the den. Drives animals out Price post-paid $2.00

Trap Bargains! Look! No. 1 traps $1.35 a doz. Others just as low. Get our price list. Write today!

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Stephens' New Trappers' Book tells you how. **Coyotes, Muskrats, Skunks, Wild Cats** and all other Western Furs are selling in Denver this year at the highest prices ever paid.

DENVER COLORADO is the Closest and Best Market on earth for Western Trappers and Fur Shippers. **Stephens** of Denver is the largest exclusive buyer of Western Raw Furs in the world.

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When Writing Advertisers, Mention The Cultivator.

ing Natomas Duchess 4th, an outstanding animal by Winona Lee Champion 6th. Other liberal buyers were H. C. Muddux and Son, Sacramento; Butte City Ranch, Butte City; G. Meister, Sacramento, and the Whitney Estate, Rocklin. Ord L. Leachman, Sacramento, was the auctioneer.

Mr. Anderson is well pleased with the results of his first sale although the weather was against him. He has associated with him John A. Fogarty, formerly with the university farm at Davis, and their efforts will be confined to the breeding of Berkshires and Holsteins.

PUBLICITY FOR THE HORSE

Wayne Dinsmore, secretary of the Percheron Society of America, writes:

The horse needs, not sympathy and protection, but publicity. The world needs to know how much it owes to the horse; how production and transportation costs are increasing through attempts to displace the horse in agriculture and commerce. To collect, verify and make known facts which will educate the public in general to an appreciation of and respect for the horse is the work that has been undertaken by the Horse Publicity Association of America, which was organized October 30, 1919, at a national meeting of horsemen and allied interests in New York City. Fred M. Williams of New York City was elected president and Geo. S. Hoovey of Kansas City, Missouri, treasurer. Directors from all allied interests, 24 in number, were elected, and all parts of the United States are represented.

Veterinary

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Musty Hay

Will feeding musty hay or hay that has gone through the thresher to remove the seed and is almost ground and very dusty decrease the milk supply? The hay is also full of sand burs. I have a cow that has dried up very suddenly. I have been feeding straw or hay that has gone through the thresher. — Subscriber, Parker, Arizona.

Such hay as you describe is not fit to feed to anything and is hardly fit for bedding. Such hay is not much better than sawdust only it does not contain rosin nor acids that are found in sawdust. When hay is left standing until thoroughly ripe for seed it contains very little that is digestible except the seed and that was taken out by the thresher; beside the hay being ground fine prevents the cow forming a cud out of it and a cow will not thrive on feed that will not form a cud. If you change to good feed at once and keep up the milking you may get her started again.

Lumps in Udder

I have a cow that has a large lump in her udder. It has a rough feeling as if it had knots and bumps on it. It is not sore and the cow makes no fuss when being milked nor while rubbing the udder over the lump. Nothing shows on the outside. We first noticed stringy milk coming from one quarter but that has long since ceased. The lump remains and does not break up with rubbing with turpentine. What treatment would be best for it?—Subscriber, Arizona.

Such lumps are often tubercular. Have her tested if possible. I surely would not use milk from that quarter.

COFFEE IN GUATEMALA

Harry Johnson, a Los Angeles boy, writes from Tucurn, Guatemala, that they are in the midst of coffee picking (November 15) and can get but 275 hands, though needing 600. The company he is with has 17,000 acres of lands in three "fincas" or plantations, and more than a half million coffee trees. He describes the plant life as "luxuriantly wonderful." While living in Los Angeles Mr. Johnson was an expert plantsman in the employ of the park department.

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If Interested Telephone or Write Us

PURE HAWAIIAN CANE MOLASSES

By actual test it will increase pork production half a pound daily over a barley and tankage feed yet it sells for less than half the price.

By actual test it will increase milk production 15 per cent.

Seventy-five per cent of the Blue Ribbon Winners at the Livestock Show were owned by people who are feeding molasses.

If you want increased production at lower costs feed molasses.

Write us at once for prices and interesting booklet telling how to reduce feeding costs.

W. H. Young Company

58 Sutter Street San Francisco

SMOKE YOUR MEAT THE "WRIGHT" WAY

Thousands of Farmers are Using Wright's Condensed Smoke (made from seasoned *Hickory Wood*). A small brush, thirty minutes and a $1.00 bottle **Wright's Smoke,** smokes a barrel of meat. *Smokes it thoroughly and gives the meat a delicious flavor.* No fooling with fires. No danger of meat spoiling. No drying out or shrinkage. Easier, Cheaper, Quicker and better than using a smoke house.

Curing Meat Before Smoking is very important. Wright's HAM PICKLE is a scientifically prepared sugar cure that gives perfect results. A $1 jar and 27 pounds of salt cures a barrel of finely flavored hams and bacon.

Wright's FARM BUTCHERING SET (Nine regular butchers' tools, including saw and cleaver) should be on every farm. We buy in carload lots and **Re-sell at Cost—$3.95.** Send for instructive booklet: *"The New Way of Smoking Meat."*

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McKAY POWER LIFT DISC PLOW AND SUB-SOILER

Especially designed for hard ground; subsoil attachment breaks up the hard pan; furnished with power lift; 1 to 4 disc for field or orchard use. This plow conserves moisture—pulverizes the soil. Write for complete description. Call and see these plows when in the City.

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For Sale—Orange Cove, Tulare County. 20 acres navels, 5 Valencias, 3 lemons; 5 year old and good crop now on trees. Good well and new pumping plant. All under ground 8-inch cement pipe line and 12-in., 4-gate valve stand pipe for each tree row. On paved boulevard, and one mile to town, school and packing house. Orange Cove is one of the live young towns of the valley and the safest place for oranges in California. Not frostless, but safe for oranges. For price and information see M. S. ROBERTSON, 313 Story Bldg., Los Angeles, 63724.

170 A. FARM $5000
WITH 3 HORSES, 16 COWS AND other stock, full list implements and tools, quantity oats, potatoes, wheat, corn. ¾ mile town, near R. R. 100 acres tillage, 30-cow pasture, choice fruit. 10-room house, basement stock and horse barns, hay barn, poultry houses, etc. Aged owner sells everything $5000, easy terms. Details page 26 Strout's Fall Catalog Farm Bargains 23 states; copy free. E. A. STROUT FARM AGENCY,, 831 A. G., N. Y. Life Bldg., Kansas City, Missouri.

Will Sell 80 acres undeveloped from my 320 acre alfalfa, pear and apple ranch in Antelope Valley, 8 miles east from Lancaster, identically the same soil and water conditions and adjoining the 240 acres now developed; 70 to alfalfa, 20 to apples and 10 to pears, balance to barley, kaffir and rye; 28 foot water lift, rich silt soil. See or write W. B. Stirdivant, 909 Baker-Detweiler Bldg., Los Angeles.

Snohomish County, Washington — 6,000 acres of the finest dairy, berry or general high grade farm lands in the northwest; rapidly improving section; no drouths, bumper crops; tracts, 1 to 80 acres; ten yearly payments. This is your opportunity. Send for literature. Brownell Land Co., Birmingham, Washington.

For Sale or Exchange—6 acres Washington navels, 4 miles east of Porterville. In frostless area. Never has been damaged by frost. 2½ acres 12 years old; 2½ acres 8 years old; 1 acre 4 years old. Ideal home place. Reason for selling, living outside of state. Write Chas. Wentworth, 1721 Faraon Street, St. Joseph, Mo.

For Sale—56.48 acres in famous Natomas bean, pea, pear and alfalfa district. Abundance of water for irrigating. Barn and domestic well. Twelve miles from Sacramento on paved boulevard. Only $250 per acre. No agents. Box 1850 Motor Route A, Sacramento, California.

For Sale—240 acres good alfalfa and orchard land; good climate; 58 miles from Los Angeles. All fenced and cross fenced. Also have some improved land nearby. John Rouff, Palmdale, California.

35 Acre Improved Ranch adjoining Orland $300 per acre. Government irrigation; alfalfa and oranges; frost damage unknown. Owner at 5630 East 16th Street, Oakland, California.

For Sale—Relinquishments from $50 to $1,000; also well drilling rig for sale or lease. Proven water district; fine opportunity for contract water well work. A. C. Vestal, Wagner, California.

Fine Alfalfa Land Northern Los Angeles County, easy water lift; $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

Cheap—80 Acres best land in San Bernardino County. One mile from Hinkley. Water abundant. Close by school. Belle Warren, Paradise Valley Sanitarium, National City, California.

Best Land Buy in the State—For particulars and description refer to this column of Cultivator of November 8th and write: Wm. H. Overholtzer, Coachella, California.

For Sale—46 acres of land near Compton on Long Beach Boulevard corner Orange Street. Two Holt caterpillar plow engines, 1-45 H. P.; 1-75 H. P. practically new. R. Mangold, Compton, California.

For Sale Cheap—40 acres improved, good irrigated land ¾ mile from Gridley. D. L. Smith, Gridley, California.

SEEDS AND PLANTS

The Garden Beautiful in California by Ernest Braunton; a 200 page book fully illustrated tells you how to beautify your home grounds and the proper trees and shrubs to plant; also best methods of gardening. Cloth binding $1.00 postpaid. Cultivator Publishing Company, 115 No. Broadway, Los Angeles.

Cory Thornless Blackberry—Extra strong, well rooted tips. No order too small and none too large. Send for descriptive price list now. Place your orders early. Ekstein Nurseries, Modesto, California.

Cory Thornless Mammoth Blackberry good rooted plants, ready for shipment, direct from Tuolumne County where they originated. G. S. Wills, Jamestown, California.

For Sale—Fancy Recleaned amber Sorghum and Sudan grass. Also hand-picked seed beans; any quantity. Stock pumpkin seed 20c per pound. Aurora Seed Mill, Stockton, California.

R*O*S*E*S 50c per dozen. Fruit and ornamental trees, plants, vines, etc. Write for catalogue. KAVAN BROS. & CURRIER, San Bernardino, California.

Burbank's Thornless Blackberry Plants—Orders taken for Spring delivery. Price reasonable. Variety Farm, Clovis, California

Write for Circular and Prices of Seeds. Wanted Sudan, Hairy, Smooth, and common Alfalfa Seed in car loads. Box 501, Fowler, California.

Avocado Seed Wanted—Mather's Avocado Nursery, P. O. Box 585, Pasadena, California.

CATTLE

Dairy Cows—Are putting in long staple cotton and will sell fifty or more finest New York grade Holstein cows. Excellent producers and as good grade cows as money can buy; 1,100 to 1,500 pound. Price $175.00 per head. Telegraph J. G. Peterson, Mesa, Arizona.

The Lewis Company Baywood herd of registered Holsteins. Herd sire Ormsby Segis Marie Lad, whose dam has produced in two years, beginning as a three year old, 57,481 lbs. of milk and 2,243 lbs. of butter. First National Bank Building, San Jose, California.

Two Holstein Bull Calves out of extra good sires and dams. Will please you if you want an especially good calf, priced very reasonable, herd free of tuberculosis. E. M. Morrow, Modesto, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—20 Head Registered Holsteins bred to King Riverside Mead, 1003 lb. bull. A. B. Comfort (owner), Guernsey, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced, California.

Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Golden Glen Stock Farm registered Jerseys and Shropshires. Geo. W. Thomas & Sons, Riverside, California.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Nuevo, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

For Sale—70 head of thoroughbred Cotswold sheep, year clip, 16 pounds; 14 head Bucks, March, 1919; 17 Ewe lambs March, 1919; 39 head varying 4 years. Will sell all at $50 a head. Young ones will average 85 to 90 pounds apiece. Edward Myer, Orland, Calif.; R.F.D. Box 32.

50 Thoroughbred Persian Fat-Tail Sheep for sale. Mutton and fur. C. P. Bailey Sons Company, San Jose, California. Importers and breeders of Angora goats and Persian sheep.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

Milk Goats for sale. Also registered buck Saanen and Toggenburg. Ernest Harrison, Arroyo Grande, California.

TREES

Nursery Stock. Apples, pears, peaches, cherries, prunes, plums, berries, etc. OURS IS MAIL ORDER SYSTEM. IT SAVES YOU MONEY. Write us now for Planters' list. 20 years in business. Carlton Nursery Co., Carlton, Oregon.

Wanted—Black Walnut seedling nursery. Will buy or graft on shares. Have my own scions, Eureka and Placentia Perfection. The Walnut Nursery, W. A. Litten, Prop., Whittier, California. Phone 6294.

For Sale—Unrooted Grape Cuttings; also a limited supply of rooted Tokay and Cornichon grapevines, and several thousand almond trees. Burke's Nursery, Lodi, California.

For Sale—Orange seedlings, sour and sweet. Budded valencias, lemons, navels. Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena, California.

For Sale—French Prune, 4x6 and 3x4, on almond and peach root; some Myrobolin root. Write for prices. W. M. Burton, Box 43, Porterville, California.

For Sale—3,000 select orange trees. Also 3,000 lemon trees; first class trees; 20,000 seedbed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—3,500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

HOGS

Registered Hampshires Cholera Immuned. Weanling pigs at very reasonable prices. Blood lines of Pat Maloy, Mose Messenger, Hawkeye Lad, Blythedate Jim and Lookout. Their dams sired by Draper Lad, Captain Kenton, Lookout Cherokee, Gold Mine and Director. Uneda Hampshire Swine Farm, Gardena, California.

Billiken Chester Whites—Entire herd for sale. Every animal listed and priced to move rapidly. Herd boars and sows. Young service boars. Seven fall litters of pigs ready for weaning, by four different sires. Write for special price list. C. B. Cunningham, Mills, California.

BERKSHIRES

"ACHIEVER"
THE BOAR

BERKSHIRES BERKSHIRES

ANCHORAGE QUALITY

We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Oriand, Cal.

BARON DUKE 201ST PIGS
are in demand. They have consistently won during 1919 the highest honors in the Show Ring. Baron Duke 201st is a yearling champion; he is the sire of champions. His fifteen month old son was Grand Champion at Sacramento and San Francisco. The San Francisco judge said he was the best boar for his age he had ever seen, and it is said that he won the Grand Championship at the National Swine Show. I have three of his spring boar pigs for sale. SANDERCOCK LAND COMPANY, 23 Montgomery Street, San Francisco, in charge of Natomas Land Sales.

BERKSHIRES
are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. Bred and open gilts from most popular strains for sale now.

GEO. A. STINGLE, El Monte, California

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Solano Berkshires. Choice stock for sale, service boars of varying ages, bred gilts, unrelated pairs and trios. Reasonable prices. Write for information. R. C. Gruhike, Dixon, Solano County, California.

For Real Good Berkshires, cholera immune, write for my catalog that gives complete information. Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

"May Rose" Duroc boars have been first and champions at the California state fair and L. A. shows, where the competition was the hottest. We have a few boar pigs sired by them out of our great "May Rose" sows ready for sale. Grab one while they last. Also booking limited number of services for approved sows for our champion boar "May Rose King." Take a look at them. Seeing is believing. Elliott-Brant Rancho, Owensmouth, California.

Weaned Pigs For Sale—Pure bred Duroc-Jersey. Sired by Long Model Defender, a first prize boar and son of Great Model, the most popular boar on the Pacific Coast and Defender Ohio Maid, my wonderful big sow and the centre of attraction at this fall's fairs. No fancy prices. Green Canyon Ranch, Fallbrook, California.

Duroc-Jersey Swine for Sale. Anything you want. Spring boars and gilts from 800 pounds. O. C. K. breeding. Bred and open gilts, same blood lines, 12 great brood sows. The best breeders herd on the coast. Jersey Queen Farm, San Jose, California.

Duroc-Jerseys at Ireland—Sows sired by Cherry Volunteer 2nd and Reformer, bred to Ireland Joe Orion at public sale January 30, 1920. Write for Catalogue, 1219 Brockman Bldg., Los Angeles, California.

I Will Offer a dozen first class young Duroc sows bred for spring litters to my crack yearling boar Nutmeg Gana 292547. Worth investigating. L. R. Hitchcock, Van Nuys, California.

Am Over Stocked and will sell at little better than pork prices 50 head of very fine registered Duroc-Jersey spring gilts. First come first choice. Green Canyon Ranch, Fallbrook, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

For Sale—One Yearling Boar, Duroc-Jersey. Wonder Model No. 265707. Big Type, satisfaction guaranteed. Address A. R. Bardrick, P. O. Box No. 5, Oceano, California.

Pure Bred Duroc-Jersey pigs of both sexes. Also one yearling boar, best blood lines in state. Address: J. A. Culp, R. F. D. No. 1, Fillmore, California.

Durocs — Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co.. Address: R. K. Walker.

For High Class Durocs write Leest & Mounier, Van Nuys. Blood of Orion King Gano.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

POLAND-CHINAS

Wondergerst, California's leading Poland China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland Chinas, Tipton, California.

Ready for Service Boars—Big—smooth—stretchy pigs. Good feet and good backs. Sired by King's Big Bone Leader, grand champion at State Fair 1918. Also I have a few Pedigreed Airdale pups seven weeks old, for sale. J. S. Rogers, Chowchilla, California.

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Big Type Poland China open and bred gilts sired by A. Price a 1,000 lb. boar. A few bred sows to farrow in December. Address: W. S. Adams, Gridley, California.

Weanlings—Gilts open or bred to a son of Great Wonder I Am. Service boars. Derryfield Farm, Capital National Bank Building, Sacramento, California.

Big Type Poland Chinas—900 lb. grand champion El Profito heads herd—line bred Big Timm. Viola L. Renwick, Santa Barbara, California.

Two Big Long March boars $50.00 each. Registered. Crated and transferred f. o. b. Gridley, California. N. M. Lester.

Poland-Chinas—Registered and well developed. Ranch adjoins town. Moramarco Bros., Van Nuys, California.

Pure Bred Poland-China pigs for sale J. R. Carhart, Fullerton, California

WANTED

Wanted—A man of very small family to work, must be thoroughly efficient in irrigation, handling of stock, farm tools and all kinds of orchard work. Steady job for the right party. Wm. Berkenstock, Fullerton, California. Pacific Phone Placentia Exchange 7W.

Wanted—Good experienced poultryman, must understand hatching and raising chicks, Good wages and permanent position to right party. Universal Poultry Farm, E. Kiss, Prop. Lankershim Blvd., cor. Second Street, Lankershim, California.

Wanted—Budded citrus trees in exchange for 80 acres Coachella Valley date land one-fourth mile from R. R. station. Might consider walnuts or other deciduous trees. Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena.

Wanted—Position by ranch foreman, married man, experienced in alfalfa, hogs, grain, etc., all around, used to handling men. San Joaquin Valley preferred. References given. Box H. R., Care of Cultivator.

Wanted—Two carloads seed potatoes—White Rose, Irish Cobbler, Triumph or Red Rose. Submit samples together with prices. Tucson Seed & Floral Company, Tucson, Arizona.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted—Everybody to read SPECIAL NOTICE in Cultivator of December 6th, 1919. Page 770 under heading—Cattle.

Wanted to hear from owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minn.

TURKEYS

For Sale: Turkey Eggs, from Wild-Domestic crosses. Raise more turkeys. Introduce wild blood into your flock. Get hardy, vigorous poults. Mammoth Bronze eggs also. Write for circular with directions how to raise 90 per cent of all you hatch. Orders booked now for future delivery. The Wild-Domestic Turkey Home, R. D. Box 26-A, Hemet, California.

Mammoth Bronze Turkeys—Order now for immediate or future delivery. Choice young stock from prize winners. Prices reasonable. A. W. Ganger, Dos Palos, California.

Turkey Eggs—Orders booked now and shipped in laying season. Bronze, also Mammoth Bronze. Robinson Turkey Ranch, San Dimas, California. Covina Phone 902.

For Sale—White Holland turkeys. S. C. Rhode Island Red cockerels, Guinea roosters. One Golden Seahright cockerel. Send stamp. E. A. McKinley, R. F. D. Box 91, Ukiah, California.

M. B. Turkeys—Breeding stock for sale W. L. Roosters 290-300 egg strain $2.50 Will exchange for hens. Mrs. G. E. Rasdall, Shawmut, California.

Mammoth Bronze Turkeys, Embden Geese and Collie Dogs for herding purposes. John G. Mee, St Helena, California.

GOVERNMENT LAND

300 Million Acres of "Free" land in U S. "The New Homeseeker" a 100-page book describing millions of acres of vacant public homesteads, timber, mines or grazing lands contains township plats and illustrations. Founded on historical facts. DOES NOT MISLEAD. Read warnings "official," eliminates crooked land agents. Tells the whereabouts of government land in Arizona, New Mexico Nevada, California, Idaho, Oregon, Montana, Washington, Utah and Old Mexico Describes water, soil and climatic conditions, all the principal U. S. land laws A marvelous publication just off the press. Mailed anywhere, $2. Address "THE HOMESEEKER," Dept. M., 3rd Floor Grant Bldg., Los Angeles, California.

FOR EXCHANGE

City Income Apartments, flats, houses, San Francisco, Oakland, Berkeley bay section, for exchange for good ranches Satisfaction assured. Incomes certified Quick results. HORACE G. HAMILTON 703 Market Street, San Francisco.

POULTRY

Baby Chicks For Sale—200,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock; 252-294 egg strain for delivery during November and December. November prices; 25, $5.00; 50, $10.00; 100, $18.00. Special prices 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition; no money in advance; pay on delivery. Now booking orders for Spring 1920 chicks. Established 1898. Must Hatch Incubator Co., 438 Seventh St., Petaluma, California.

We Are Specialists in production of high grade S. C. White Leghorn Baby Chicks. Thoroughbred heavy laying strain of America's choicest Leghorns fill our pens, and my personal attention is given to all details, assured each customer of highest grade stock. All baby chicks guaranteed and only healthy baby chicks shipped; if not satisfactory on arrival your money returned. Catalogue free. F. C. Rhode, Vineburg Hatchery & Poultry Yards, Vineburg, California.

Ever Increasing Trade finds us better prepared than ever before to take care of our Day Old Chick business. New concrete building—100 Jubilee machines hatching eight breeds. We sell Hyde's W. L. Cockerels from trapnested stock. Great stuff—shipped on approval; $5.00 to $7.50. Some Buff Orpingtons also. Interesting folder ready. B. W. Archibald, Soquel, Santa Cruz County, California.

W. M. Marquam's Heavy Laying S. C. Reds and S. C. White Leghorns. Vigorous Red cockerels directly descended from winners at New York and Los Angeles, $10. Leghorn cockerels of good type and color from 223 egg trapnested hen mated to son of 279 egg hen, $10. I ship C. O. D. on receipt of $2.00. W. M. Marquam, Bishop, California.

Mahajo Farm, P. O. Box 597, Sacramento, California, offers highest class, standard bred, breeding stock in White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Plymouth Rocks. Prices: Leghorns, males $5.00; females $3.00; Rocks, males $7.50; females $5.00 and upwards.

Thoroughbred S. C. White Leghorn Chicks—In 100 and 1000 lots from our Hoganized and Trapnested Stock. Order now for spring delivery. Inventors and Distributors of "Forbros" Separator and Trapnest combined. Write for circular. Forster Brothers, 2918 Otis Street, Berkeley, California.

Barred Plymouth Rocks and White Leghorns — Fourteen years of specialty breeding, exhibiting and shipping these fowls. They have been bred for and are paying in egg production TODAY. Specializing in hatching eggs at moderate prices. Golden Rule Poultry Farm, Porterville, California.

Two 600 Chick Hot Water Brooders, divided four sections, each section 9 sq. ft. Iron pipe heater, copper boiler. All crated to ship at $35. One 224 Petaluma good order $20. Two Schofield incubators 300 egg $30. We want to buy Pioneer incubators, all sizes. Pioneer Hatchery, 320 S. Spring Street, Los Angeles.

Finest Hatchery in the World—Chicks, White Leghorns, Rhode Island Reds. Settings, 100's, 1000's—hatched right in $60,000 Brick and Concrete Hatchery from our Quality Heavy Layers. Reasonable prices. PEBBLESIDE POULTRY FARM, Sunnyvale, California.

Baby Chicks—Order now for 1920 and get what you want when you want them. White and Brown Leghorns, R. I. Reds, Barred Rocks. Safe arrival guaranteed. Write for free circular. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto.

Chicks—Eggs—Hoganized White Leghorn, Buff and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas, Blue Andalusians. Free circular. McDonald Poultry Ranch, Route 1 Box 246, San Jose, California.

White Leghorn Baby Chix—Heavy laying, hoganized stock. March $15.00 per 100; April and May $13.50 per 100. Safe arrival of strong live chix guaranteed. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Breeding Cockerels—Barred and White Rocks, Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Day old chicks in season. Enoch Crews, Seabright, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

"Eastman's Bred-to-Lay," Hoganized and trannested Barred Plymouth Rocks, Eggs, Cockerels. JANUARY CHICKS. Fairmead Poultry Farm, Fairmead, California.

Blue Andalusian Cockerels—There is no better BLUES to be had. From heavy laying strain. Get your orders in early. Prices reasonable. J. R. Huddleston, 342 Edgeware Road, Los Angeles, California.

White Wyandotte Cockerels, pure bred, good laying strain, early March hatch, order now. D. M. Light, Patterson, California.

For Sale—Thoroughbred S. C. R. I. Red cockerels. Extra fine stock. Extras $7.50. Choice $5.00. L. M. Kniffen, Wasco, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

Pit Games the Kind That Win. Cocks, Stags, Hens and Pullets. Prices reasonable. R. H. Crane, Route 3, Santa Rosa.

A Few Silver Campine males this week, $5.00. Roy Ward, Lindsay, California.

RABBITS

Beat the Butcher—Raise your own rabbit meat and know it is healthy. Our magazine tells you how. One year for 12 one-cent stamps. After January 1st 25c so get it now. SANDERSON, Eagle Rock, California. Dept. CC.

N. Z. Reds Registered pedigreed from first prize winners. A few fine red utility does, wt. 9 to 10 lbs. $3.50 bred. E. Pennin, 86 Cambridge, San Leandro, California.

Pedigreed Flemish Giants; also utility stock. No fancy prices. Maud Beeching, 1578 W. 46th Street, Los Angeles.

MISCELLANEOUS

For Sale—One 10,000-gal. galvanized iron oil tank and oil. Also 1500 3-gal. Hamilton orchard heaters and about 500 7-gal. citrus heaters. Tank wagon and frost alarm signal. Will make a very low price on entire lot. Address Box 1, Tustin, Orange County.

Leaf Tobacco—We are growers of Tennessee Red Leaf Chewing and Smoking, aged in bulk, limited supply, order quick. 3 lbs., $1.80; 6 lbs., $3.30; 10 lbs., $5; Postpaid. Address Murphy Company, Martin, Tennessee. Reference, Peoples Bank.

For Sale—Lima bean splits from cleaning 46 sacks, 3,230 lbs., and hand pickings 36 sacks, 2,444 lbs. for stock feed. I. Tawa, R. D. No. 2, Box 213, Los Angeles or phone Boyle 3381.

For Sale: Rare books and papers on silk culture.' Choice mulberry seeds from Europe. Drawings for the filature. Mrs. S. R. Bellamy, 256 5th Ave., San Francisco, California.

Beautiful Mahogany and Oak Cabinet Victrolas and 40 selections. Some Red Seal, $95. Taken in trade. Guaranteed like new. DEMMITT IMPLEMENT CO., upstairs, 120 N. Main, Los Angeles.

Beautiful Fumed Oak Victrola XIV and 90 selections, many Red Seal, all like new, $195. Why buy new and pay more when this can't be told from brand new? 2101 E. 1st, Los Angeles.

MACHINERY

Tanks, Pumps, Windmills, Ranch Tools Rebuilt, guaranteed do same work as new, save half. No profiteering. Compare prices and material. Make new galv. tanks, 100 to 2000 gals., save 20 per cent. Why pay more? See bargain prices ads L. A. Sunday papers. DEMMITT CO., upstairs, 120 N. Main, Los Angeles.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

For Sale—Bargain in used Triplex Pump, practically good as new. 1800 G. P. M. belt drive, at one-third new price. H. E. Carse, Consulting Engineer, 704 Washington Building, Los Angeles.

For Sale—Bean Track Pull Tractor. Latest type; fine running order; $500. Cost new $1370. A. T. Hannah, Box 810, R. F. D. 2, Inglewood, California.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

For Sale—Caterpillar, two 75 horse power Holts, bargains. C. A. Myers, 1119 Haas Bldg., Los Angeles.

For Sale or Exchange. Holt Caterpillar Tractor, 60 H. P., $2,500. 922 W. 6th Street, Los Angeles.

For Sale—Nelson Tractor in good condition. Mrs. Lena Clendenon, Palms.

Poultry Queries

Conducted by J. A. Koethen

Spotted Liver

I have lost two hens from spotted liver and now have a third affected the same way. Please tell me the cause and the remedy. Am feeding bran mash, dry bran, wheat, Egyptian corn, and have had plenty of alfalfa, also giving them oyster shell and charcoal. No one here seems to know anything about the disease. — Subscriber L. R. M.

In "Poultry Diseases and Their Treatment," a bulletin issued by the Maine station, which is the most comprehensive work of its kind that has been published in this country, we read: "In general when post mortem examination shows the liver larger or smaller than normal or congested with blood or marbled or spotted, we may assume that the bird had some form of liver disease," and J. H. Robinson gives the following advice: "Just as soon as it is suspected that there is liver trouble in the flock one or more indisposed birds should be killed and examined. If examination confirms the suspicion prompt measures should be taken to counteract bad tendencies. These should look first to good diet. Make the mash, if mash is used, light and bulky; feed green and vegetable foods liberally; compel exercise in scratching for food. Then get the fowls out a little every day and if sanitary conditions in the house are at all objectionable correct them. When the conditions to which a flock is subjected are such that a number of bad cases of liver trouble develop, it cannot be expected that corrective measures will arrest development and restore to health in every case."

Your ration looks all right, but it may be you are feeding too heavy a scratch ration and that the hens are not getting sufficient exercise. You do not mention your dry mash. If you are feeding only bran and no meat meal in it, your hens are getting too much starchy food and too little protein. They need a balanced mash containing several ground grains and about 20 per cent of beef scrap and vegetable meal. Fifteen per cent beef scrap and five per cent soy bean meal added to equal parts bran, middlings and corn meal would give them a good nourishing egg mash. It is well to increase the proportion of green feed until there is improvement in the general health of the flock.

Copious rains throughout Washington have made the soil tillers happy.

Big Profits in Cavies

Join Us in the Business

Because of our inability to supply our customers with guinea pigs, otherwise known as cavies, we have opened a California Branch and offer one of the most unusual money making opportunities to men and women, boys and girls, that was ever announced.

We want to enlist the services of several hundred responsible people to raise guinea pigs for us. You will find if you will investigate us, that we have one of the most reliable and best known breeding farms and laboratories in Wisconsin—The Dr. J. A. Roberts Laboratories and Stock Farms at O-con-o-mo-woc.

OUR GUARANTEE IS THIS

We agree in writing to buy all the guinea pigs that you can raise from stock purchased from us or their descendants and will pay you $1.20 a pair for animals weighing over 8 ounces delivered. We sell them to laboratories, hospitals and colleges.

This guarantee does not mean that you are compelled to sell your stock to us—you can sell it wherever you choose. The demand for guinea pigs is growing so rapidly that you can often get better prices—but if you cannot, our guarantee stands and you will have a dependable, profitable market at all times.

Few industries offer such profit at so slight cost in money, time and material as raising guinea pigs. A few hours each day would be sufficient to care for several hundred which nets a handsome profit. Children can care for a good many and have great fun doing it.

Guinea pigs increase very rapidly—one is often known to have as many as twenty young in a year while many of these will in turn produce more offspring before the end of the year. It is possible for one pair to have as many as fifty descendants in a year. They may safely be kept in a dwelling house without fear of offensive odors. Most people construct hutches in their back yards and breed them in large numbers. The guinea pig is a hardy animal living outside if kept dry and out of drafts. Children are in no danger of being bitten or scratched with guinea pigs and they are subject to few, if any, diseases. That is one of the principal reasons they are desired by hospitals. Guinea pigs do not require artificial heat. The climate of California is ideal for raising them.

COST. EXPENSE. PROFITS

The cost of raising guinea pigs to salable age is about 5 cents per head. Feeding cost is practically nothing as the little animals eat scraps, cabbage, lettuce, etc.

U. S. Government Says, Bulletin 525, "Guinea pigs sell at various prices, depending on supply and demand. The average price for several years has been about seventy-five cents, but laboratories now report suitable stock is scarce and that they have been paying from one dollar to one dollar and a half for their supply of young.

"Ordinarily five litters may be expected in a year, averaging about three young each. A female in her breeding prime may be expected to raise twelve to fifteen young each year.

"The rearing of guinea pigs requires no extraordinary knowledge and no great outlay of capital. Little space is needed to accommodate the animals, which are hardy and easily managed."

Figure out the profits for yourself. The Dep't. of Agriculture states that from 12 to 15 young may be expected in a year, which at from 75 cents to $1.50 gives returns of from $9.00 to $22.50 each or an average of $15.75 on each female annually. The highest cost per female per year should not exceed $1.20 leaving profits that would average well over $14.00 on each female in a year.

Even a few pens should make profits that would be well worth the time and small investment required.

YEARLY ESTIMATE OF EARNINGS

Number of pigs	Earnings should be
10	$ 100.00 a year
20	200.00 a year
30	300.00 a year
40	400.00 a year
100	1000.00 a year
500	5000.00 a year

Care should be taken in the selection of stock. Animals that have been used for hospital tests or their offspring should not under any circumstances be used for breeding purposes. These animals are worthless for future tests. The animals we sell you are guaranteed never to have been used for experimental or laboratory purposes or the offspring of such stock. We buy only stock that has been raised from the original stock furnished from our pens. We cannot afford to take chances nor can you. Look at the small investment and the large profits reasonably to be expected.

A HOLIDAY GIFT FOR CHILDREN

As an inducement to children to make money—something in which they will be interested—few opportunities are offered like this. Why not buy at least three females and a male for a Christmas present for some child.

We have 500 guinea pigs coming direct by express from Wisconsin to our Hollywood, California Branch at regular intervals and can supply this pure bred stock on short notice in any quantities. The guinea pigs can be shipped wherever there is an express office, in small crates. Full instructions for care, breeding, building hutches, etc. go to each new breeder. We will trade pure bred males with you to prevent inbreeding and assist you in every reasonable manner to make a success of your business.

We absolutely guarantee all stock ordered from us to reach you in good condition. We will replace any that are not satisfactory on arrival free of charge.

It is impossible in the space allotted here to go into further detail about this attractive profitable business. Write us for more information. You can start with an investment as low as $5.00. We have a booklet telling about the breeding, care and money making possibilities offered with guinea pigs that we will send to anyone on receipt of 10 cents to apply on expenses of printing, postage and mailing. Write today.

Dr. J. A. Roberts Laboratories, Hollywood, California

High Class

White Plymouth Rocks

Birds of great vigor and fine exhibition quality. The result of ten years of careful selection. As egg producers they have no superiors and in the show room they have demonstrated their merit. At the recent Southern California Fair my birds were awarded four out of a possible six first premiums.

Fine utility birds with good standard markings, cocks, cockerels, hens and pullets at $5.00 each. Hens and pullets in lots of four or more $4.00 each. Exhibition birds of fine show quality, males and females, $10.00 each.

Geo. I. Lytle **Perris, Cal.**

Finding the Layers With Trapnests

By Jean A. Koethen

IT'S a long road, but the only sure one. George C. England of Inglewood is demonstrating its certainty.

"George England is a very clever man," declared one of his neighbors when I asked the way to his ranch. Rumors of his successful work with poultry had reached me from other directions, and I was hardly prepared for the youthful face which greeted me nor for his boyish enthusiasm. One would pick him out for a college boy instead of a man who is studying his way through one of the big problems of breeding.

"Just wait till I get these hens out of the nests," he interrupted me as a loud cackle warned him that at least one hen had finished her morning's work, and then for a few minutes there was a flurry of wings and legs as two or three industrious biddies were drawn from the nests, their band numbers examined and noted on the record tacked on the wall. When a hen cackles George England has ears for no other sound.

When I say that Mr. England is pedigree breeding the fourth generation of 200 egg hens I am making a statement which bespeaks for him the respectful attention of everyone interested in poultry breeding. This is a task very few Southern California breeders have had the courage to even attempt. For the most part we fall back on the much easier expedient of Hoganizing, or, if we are very strenuous, we cull according to color. "I have no use at all for the Hogan system," declared Mr. England, emphatically, as he dropped the last pullet on the straw. "They needn't tell me they can come in here and pick out my best layer by the thickness of her pelvic bones or the number of fingers between them and her breastbone. I had a letter last week from a man who wanted to buy a breeding male. He said he must be four fingers from keel to pelvic bones, with the bones an eighth of an inch thick, and so forth and so forth. Why, it would take $20 worth of my time just to find him, if I had such a bird. I just wrote back that I didn't believe I had anything that would suit."

Blood Will Tell

These 18 daughters of 24RX are full sisters and granddaughters of old 593, the original 242 egg hen. Not one of them laid less than 200 eggs in her pullet year.

Pedigree breeding on the England ranch dates back to old No. 593, the original 242 egg hen. She is still in the flock and will remain till she dies of old age, shabby and disreputable looking as she is, hardly fit to associate with her beautiful granddaughters. No. 593 was mated to a male purchased from a breeder of heavy laying stock. Whether or not he was the son of a high producer is not known, but the sequel justifies the suspicion that he was. Ten daughters of 593 from this mating laid 217 eggs or more in their pullet year, the highest record being 254.

The four best of these ten daughters of 593 were mated to a son of another 217 egg hen (not their sister) and 16 pullets from this mating laid over 200 eggs, the highest record being 283. This was in the first 12 months of their pullet year. Fourteen of these 16 pullets will be used as breeders this coming season.

Twenty-eight out of 31 granddaughters of 593, the 242 egg hen, laid over 200 eggs in their pullet year. This is strong evidence in favor of the sometimes disputed fact that the daughters as well as the sons of high producers inherit fecundity from their mothers. To be sure, the sire of these 31 pullets was known to be the son of a high producer, but there is every reason to believe that the mothers' fecundity was not without its influence.

In this flock there are nine hens that laid over 300 eggs in their pullet year, that is, from the time they began to lay till they went into the molt the following fall. The best of these laid 331 eggs in 14 months and 21 days, 266 of these being laid in 12 months. Another hen, old 24 R X, laid 296 eggs in 12 months. Out of 18 daughters of 24 R X, five have laid over 70 eggs apiece between August 1 and November 1 of this year.

So much for the story the trapnest tells. Without it, how would 593 or 24 R X have been picked out? They would have Hoganized, perhaps, as hens of large capacity, and by the color system would have been segregated among the best layers, but who is to know how many eggs a hen lays unless he trapnests?

No-Yard System

Mr. England is another poultryman who believes in the no-yard system of housing. "Hens lay more eggs without yards," he insists, and where is the sense in bare yards anyway when they are soon trampled hard as cement? His long houses are built in sections 16 by 20, with 80 to 85 hens in a house. This allows about four square feet of floor space for each hen. The board floors are covered with straw, which is removed and replaced with clean litter every two months. The litter which is removed sells for seven cents a foot, which goes a long way toward paying for the straw.

On the three acres which this ranch occupies are three or four of the long houses, housing altogether over 4,000 birds, young and old, and a new house, 140 feet long, for special pen

It's not fat—it's EGGS you want

Are your hens just boarders? Fat and lazy? All their food going to flesh? Nothing left for egg production? Madam,—Your hens' egg organs are dormant, and if you are going to be satisfied to let nature bide its own time to revive these dormant egg organs, it will be Spring eggs, not Winter eggs, for you. But why wait on nature?

You can speed up egg production—you can make your hens lay now by feeding

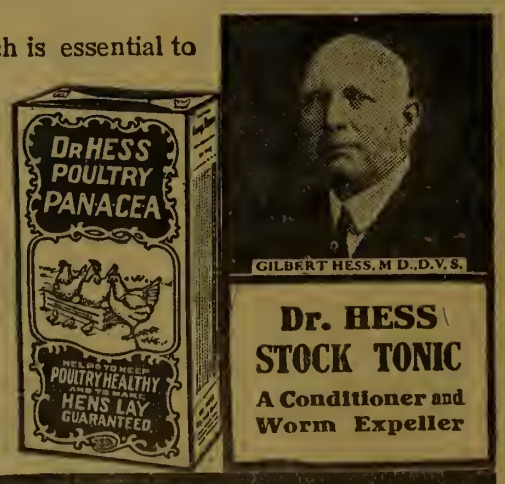
Dr. Hess Poultry Pan-a-ce-a

It contains *Nux Vomica* and *Quassia*, the best nerve, appetizing and digestive tonics known to the *Materia Medica*—tonics that promote a hen's digestion—tonics that tone up the dormant egg organs so that the proper amount of food goes to egg production, and not all to flesh, and fat, and laziness, when it's action, and eggs you want.

Pan-a-ce-a supplies the additional iron for the blood, which is essential to the speeding up process. It contains certain forms of lime that supply the needed material for making egg shells.

Dr. Hess Poultry Pan-a-ce-a insures a healthy, singing, laying, paying poultry flock, Winter as well as Summer.

Always buy Pan-a-ce-a according to the size of your flock. Get it from a reliable dealer in your own town. Tell him how many fowls you have, and he will supply you with the proper sized package, which is guaranteed. 30c, 60c, and $1.25 packages. 25-lb. pail, $3.50; 100-lb. drum, $12.00. Except in Canada.



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Dr. Hess Instant Louse Killer Kills Lice

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KRESKY'S 1920 VENTILATING brooder stove forces proper ventilation in spite of the operator and sweeps the room with FRESH AIR. PETALUMA'S latest sensation and result getter. TRY it. Keep it if you like it, or send it back if you do not.

Catalogue No. 3, free for asking.

KRESKY BROODER STOVE CO.
Petaluma Cal.

Get More Eggs; Save Feed

Egg prices are high and going sky-high—higher than ever before. Those who know how and what to feed to get the most eggs all winter and spring will reap big profits. Improper feeding methods will result in fewer eggs, wasted feed—loss and disappointment. Prof. T. E. Quisenberry, Director-in-Chief of the great American Egg Laying Contest, and officially recognized as one of the world's greatest poultry authorities, has just completed a 16-page bulletin on "How to Get More Eggs and Save Feed." He will mail this bulletin to readers of California Cultivator who will write him without delay. Send no money. Over a thousand hens under Quisenberry's direction laid from 200 to 304 eggs each per year. He just finished making a profit of $6.15 per hen in nine months on commercial eggs from one large flock. Write him today for his free bulletin, addressing care of American Poultry School, Dept. 1411, Kansas City, Mo.

PLANS for POULTRY HOUSES
All Styles, 150 ILLUSTRATIONS Send 10 cents
Inland Poultry Journal, Dept. 53, Indianapolis, Ind

Place Your Order NOW for Nitrate of Lime

Guaranteed not less than 13 per cent Nitrogen—almost 100 per cent Pure.

Nitrate of Lime supplies Nitrogen in the most available form. Packed in solid wooden casks about 240 pounds.

Ask for prices, delivery from warehouse, Los Angeles and San Francisco, or steamer, January, 1920.

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Best Varieties, Best Plants
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Big orders a specialty; small orders appreciated.
Write V. R. ALLEN, Seaford, Sussex Co. Del.

ings, is in process of construction. I was glad of an opportunity to verify my figures in a recent article as to the cost of building and found that I had understated instead of overstating. I estimated that a modern poultry house would cost from $1.50 to $2 for each hen it houses. Mr. England says this new house of his will cost from $2.75 to $3.25 per bird.

Electricity Ad Libitum

Electricity is used to a limited extent in the laying houses, but only to a limited extent. "You cannot expect highly fertile eggs from a hen that is being forced to the limit," is this poultryman's dictum. Lengthening the hen's working day by turning on electric light morning and evening can easily be overdone. When the hens in question are not intended for breeders it is worth while to sacrifice vigor for the sake of increased egg production. With breeders such a sacrifice makes for loss rather than profit.

"Keep a good hen till she dies" is another of Mr. England's maxims. Hens that have passed the trapnest test are kept two years more or perhaps three if they are very good. In four years one hen that laid 242 eggs in her pullet year laid 752 eggs in spite of the fact that she lost four whole months on account of an accident. This was an average of 188 eggs for the four years.

All pullets are carefully culled before they are placed in the trapnest houses, then they are left there a full year. A White Leghorn pullet that does not lay before she is seven months old is not considered worth keeping, but most of these pullets begin at four and a half months. Any laggard that escapes the first culling is caught by the trapnest. In November pullets were averaging 50 per cent and pullets and hens together 62 per cent.

Breed and Feed

The secret of a good yield, in Mr. England's opinion, is twofold: First, breed only from high producers, mated to the sons of high producers. Second, feed all layers and all breeders a good, full ration, with all the green feed they can consume. A prepared mash is kept before the birds in hoppers, and the night feeding of grain has included wheat ever since it became available. It is impossible to prevent January and February pullets from molting lightly in the fall, but by generous feeding their egg yield is kept from dropping below 50 per cent.

Every inch of the ranch that is not occupied by buildings is planted to some kind of green. Kale, chard, mangel beets and barley are the standbys, but every kind of green that can be raised or bought is utilized. Daily at noon the green feed racks are filled, and the birds peck and nibble till supper time.

Does all this care is trapnesting, mating and feeding pay? The fact that these hens average over 60 per cent when eggs are retailing at 85 cents and that all the chicks that can be spared before the middle of April are already engaged at 25 per cent above the regular price speaks for itself. The care of such a flock is tremendously exacting and takes all Mr. England's time as well as that of two hired men, but there is no question about profit.

A Merced subscriber writes: I see an article in your paper inquiring about chicken ticks. They are hard to get out of buildings, but here is a sure remedy for killing them on your hens and roosters: One tablespoon of sheep dip in one-half gallon of warm water.

Dip your chickens in it but do not let their heads get in it so they can swallow any. Do it on a warm day. I use a big pan and to every tablespoon of dip I put in one-half gallon water until I get enough in pan to dip them. Rub feathers well so it will get to the skin. Your hens will start laying but you can't eat the meat of the chicken for three weeks as it will taste of the dip.

I use crude oil in the buildings, spraying with a spray pump. I dip my chickens about three times a year, or any time they want to set and I do not want them to. I dip them when I let them out of coop.

Semi-Solid Buttermilk

Makes 'Em Grow Fast

Feed your hogs and poultry semi-solid buttermilk. It keeps them healthy and gets them to market earlier.

Semi-solid buttermilk is pure creamery buttermilk, with nothing added—only the water is taken away. It is not modified by the addition of sulphuric acid or any other preservative its own NATURAL LACTIC ACID keeps it fresh.

We Guarantee Every Barrel of Semi-Solid Buttermilk.

We guarantee that semi-solid buttermilk is pure and unadulterated, sterilized and pasteurized. It is a SAFE feed, and you will be satisfied with the results from feeding it.

Saves Grain, Saves Time, Saves Money

Saves GRAIN, because it balances the grain ration. Saves TIME because hogs and poultry fatten quicker when fed semi-solid. Saves MONEY because you don't pay freight on the water content of the buttermilk, and you don't have to feed so much high-priced corn.

Semi-Solid Buttermilk Is Essential

for BABY CHICKS; raises every one; keeps them healthy and vigorous. No sickly or dead chicks.
TRY IT

FOR LAYING HENS—The egg production increases at an astonishing rate. Keep accurate account, and TRY IT.

POULTRY FOR MARKETS—Milk-fed chickens reach market first, with choice, firm, white flesh. TRY IT.

We know what SEMI-SOLID BUTTERMILK will do. Don't be skeptical, but try it, to be convinced.

A carload per week is consumed in the Petaluma District alone.

Semi-solid buttermilk is put up in 500-lb. barrels, half barrels, quarter barrels and 10-gal. kegs. Have buttermilk when you want it. Semi-solid keeps in any climate, any length of time.

Order from your dealer. If he can not supply you, send your order to Dill-Crosett, Inc., 235 Pine St., San Francisco, and we will supply you direct from our factory at Benicia, California. You pay on receipt of the goods.

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The Reliable Blue Flame Wickless Oil Heated Hover

This Hover Represents Our 30-Inch 42-Inch and 52-Inch Sizes.

THE MODERN HOVER

This hover has the same chick capacity as the coal burning brooder. They are made in four sizes, 18 inch, 30 inch, 42 inch and 52 inch hover. A few of the special points on this oil heated hover are as follows:

- Burns Coal Oil
- Steady Blue Flame
- Comfortable and Easy to Operate
- Economy of Operation
- No Wick to Trim
- No Oil Fumes
- Visible Oil Feed
- Convenient and Safe
- No Coal, Smoke or Gas
- The Flow of Oil Is Regulated Automatically

Abundance of Heat

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Why not put your Automobile to Work?

HESSE TRAILERS
designed and Constructed to Answer Your Requirements
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WAGNER'S IMPROVED
Plant Now and over per acre annually. Splendid results in six months. Special prices for immediate planting. Also berries and small fruit, etc. Write to the originator, J. E. WAGNER, Rhubarb and Berry Specialist Pasadena Calif.

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Member American Society Mechanical Engineers, Washington Bldg., 3rd and Spring, Los Angeles.
Ranchers contemplating water developments, construction of irrigation plants, water systems, wells, reservoirs, or drainage system, write for detailed information regarding services that have proven satisfactory to many others for such work and a saving through our knowledge of and arrangements for purchasing. Projects developed and carried through to successful completion.

Los Angeles Markets

Los Angeles, December 10, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 67 cents.

Dairy Exchange prices last week on extras:

CHEESE

Dec.	3	4	5	6	8	9
'19 ...	67	67	67	67	67	67

Brokers prices:

California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 74 dozen; case count, Produce Exchange closing price 62 dozen; pullets, Produce Exchange closing price 62 dozen; pewee pullets, 53.

Dairy Exchange prices last week on extras:

Dec.	3	4	5	6	8	9
'19 ...	77	76	76	76	77	74

POULTRY

Prices to producers: Hens, lt. 31; heavy, 33; colored over 4 lbs., 33; broilers, 40@42; fryers, 35; roasters, 32; old roosters, 19; ducks, old, 23; ducklings, 30; ducklings, Pekin, 3½ up, 33; geese, 25; turkeys, live, young tom, 37; dr., 43; old, live, 35; dr., 41; hen turkeys, live, 35; dr., 41; squabs, 45@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Hogs (hard-grain fed) 125 to 150 lbs., 13.50; 150 to 175 lbs., 14.00.

Cattle (on foot, gross weight): Steers, good, 10.00@10.50; medium, 9.00@9.50; heifers, good, 8.00@8.50; fair, 7.50@8.00; cows, fair to good, 7.50@8.00; bulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00@13.00; 175 to 225 lbs., 10.00@11.00.

Sheep: Ewes, 8.00@8.50; lambs, 13.00@14.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock December 9, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement good, market stronger. New stock: Stockton, Burbanks, fancy, 4.00@4.25; choice, 3.50@3.65 per cwt. Salinas, Burbanks, sacked per cwt., fancy 4.00@4.25; Russets, 4.00, few 3.50@3.60. Local: Lug boxes, mostly 1.35.

Sweet potatoes: Market dull, supplies increasing. Lugs, 75@1.00; per cwt., 2.75@2.85.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, lug 1.25@1.40; cwt., 4.50@5.00, some low as 4.00. Yellows and browns mostly 4.90@5.00, some low as 4.50; lug boxes White Globes, 1.25@1.40, few 1.10; Yellows, 1.50@1.60; Yellows and Whites, in boxes and lugs, fancy, 5 per pound.

VEGETABLES

These are the actual prices obtained December 9, by Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans, green, lb., best, 16@18; poorer, 9@13; Limas, 13@14½.

Beets, doz., 40@60; lb., 4@5; sk., 2.50.

Cabbage: Per lb., 3½@4½; cwt., 4.00@4.50; cr., 3.50@4.00; sacks, 2.35@2.50.

Carrots, dozen, 35@45; lb., 3; sk., 1.50@1.85.

Cauliflower: Local stock, per dozen, best, 1.50@1.60; others, 1.00@1.35; field crates, best, 3.00@3.50; others, 2.50@2.75.

Celery: Local stock, per dozen bunches, 90@1.00; extra fancy, 1.00@1.25; crates, 4.00@5.00; fancy shipping stock, 5.00@5.25; celery root, 1.10 per dozen.

Cucumbers: Local stock scarce, lug boxes 2.50@3.00; some best high as 3.25; 1.25 per dozen.

Chicory, dozen, 40@50.

Eggplant, lb., 4@6; fy., 9@10.

Peas, local, lb., stock scarce, 14@20.

Lettuce: Local stock, market stronger, per dozen, 90@1.00; others 85; crates, 3.00@3.50; other 2.40@2.50.

Peppers: Lug boxes, wide range. Bells, 90@1.00; Chilis, best, 50@60; poorer low as 35; per pound, Bells, 8@10; Chilis, 5@7; shipping stock, per pound, best Bells, 9@13; others, 8@9; best Chilis 9@10.

Pumpkins, 1½@2 lb.

Parsnips, lug, best, 75@1.00; sk., 1.65@2.50; dozen, 50.

Romaine, doz., 40; cr., 1.50@2.00.

Rhubarb: Local, box, best, 1.25@1.50; others, 1.00@1.25.

Squash: Hubbard, 1½@2¼.

Spinach, doz., 35@40

Tomatoes: Demand and movement moderate, supplies lighter. Market stronger. Lug boxes, ripes, best, 1.10@1.50; others, 90@1.00; poorer, over-ripes, 45@50; shipping stock, 1.50@1.75.

Turnips, doz., 40@45; others, 30@35.

FRUITS

These are the actual prices obtained December 9, by Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California: 4-tier, Bellefleur, 1.85@2.00, mostly 1.90@2.00; 3½-4½ tiers, 1.75@1.85; loose, 4@4½ lb.; Glen Seedlings, 2.25@2.75; White Pearmains and Yellow Newtown Pippins, 2.25@2.50 box; Delicious, loose, 5@7½ lb; Baldwins, 4@5 lb.; Newtown Pippins, 4@5; Pearmains, 4; Winesaps, 6; Northern: Jonathans, extra fancy, 3.10@3.50; fancy, 3.00@3.10; choice, 2.50@2.60; loose, 6@7 lb.; Spitzenburgs, extra fancy, 3.25@3.50, mostly 3.40@3.50; fancy, 3.00@3.10; 6½@7 lb.; Delicious, boxes, 3.50@4.00; Ben Davis, lb., 5; Ganos, 6@7; Pippins, 6.

Bananas, 8@8½.

Coconut, doz., 2.75.

Cranberries: Barrels, 17.00; lb., 16@17½; Oregon, boxes, 4.50@5.00.

Grapes: Supplies scarce. Demand and movement good, market stronger. Local and Northern, from storage, per pound: Tokays, 14@16; Malagas, 14@15; Black Cornichons, 13@15; Red Emperors, wide range, 9@14.

Pears: Northern Bartletts, No. 1, 11; No. 2's, 9@10 per lb.; poorer, 5@7; lug boxes, 2.00@2.50; best packed boxes, 3.25@3.50.

Persimmons, lb., 8@15; mostly 12@14.

Pineapples, lb., 19@20.

Pomegranates, lb., 6½@9.

Quinces: Local lug, 1.10@1.35; lb., 4@5

Lemons: Fancy packed, 4.50@4.75; loose, 3.50@4.00; juice, 2.50. Local: Packed, 3.50@4.00; best, 4.00@5.00; loose, 2.00@3.50; lb., 3.

Oranges: Valencias, medium fancy 4.00@5.00; Navels, box, 5.00@5.50; local pack, 2.50@3.75; Ariz. fy., 150's-176's bx. 6.00.

Grapefruit: Arizona: Seedless, per box, 3.50@4.00; Cal. bx., 4.00@4.25; poorer 3.75; lug, 1.75; local, box, 2.25@2.50.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.

No. 2, 26.

Diamond Brand Buds, 34.

Golden State Buds, 34.

1918 No. 1 price was 28; fancy budded, 31½.

BEANS

California Lima Bean Growers' Association fixed prices October 6: Limas, 14½; baby, 13.

GRAIN AND FEEDS

Price bid local grain exchange, December 2:

Oats, Cal. seed, 3.16¼.

Oats, Eastern White, 3.00@3.05.

Corn, Yellow, 3.40@3.50.

Egyptian, 3.52½.

Kafir, Eastern, 2.87½.

Feterita, 3.35.

Hygeria, 3.12½.

Eastern Milo, 2.97½.

Wheat, 4.95@5.60.

Alfalfa molasses, 33.00.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	22.00@25.00
Barley	19.00@24.00
Alfalfa	22.00@27.00
Barley Straw	10.00@12.00

San Francisco Markets

San Francisco, December 9, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 67½

Prices extras last week and year ago

Dec.	2	3	4	5	6	8
'19 ...	68	67	67	67	67	67½
'18 ...	63	63	63	63	..	..

Rcts. wk. ending Dec. 9., 2,085 centals.

CHEESE

Dairy Exchange quotations:

Cal. Flats	30@40
Ore. Y. A.	39
Ore. Triplets	34
Jack, full cream	33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	87½
Extras, pullets	77
Undersized	73½

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago

Dec.	2	3	4	5	6	8
'19 ...	91½	90	88	89½	87½	87½
'18 ...	81½	81½	82	82½	..	..

Rcts. wk ending Dec. 9, 254,280 dozen.

POULTRY

Wholesale prices are:

Leghorn, 30@33; colored, 34@35; roosters, young, 30@31; old, 20@22; broilers, 35@37; fryers, 33@34; turkeys live, 40; dressed, young 45@48; geese, 23@25; ducks, Indian Runner, 18@20; Pekin, 24@26; squabs, 50@60.

Belgian hares, live, 16@17; Jack Rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle—Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10@11¼, do, 1,200 to 1,400 lbs., 10¼@10¾; do, second quality, 9@9½; do, thin, 7@8.

Cows and heifers—No. 1, 8½@9¼; second quality, 7½@8; common to thin, 4@6.

Calves—Light weight, 12½@13; medium, 11@12; heavy, 8@10.

Lambs—Yearling, 10@11; milk, 12@13.

Sheep—Wethers, 9@10; ewes, 6@6½.

Moran & Co. quote:

Cattle—Good steers, 1,000 to 1,200 lbs., 10@11; good heifers, 1,000 lbs. and over, 8¼@9; good cows, 1,000 lbs. and over, 8@8½; canner cows, 4@5; good bulls, 5@6½. Calves light, 12.

Hogs—Top packer, hard and well-finished, 150 to 225 lbs., 16; 225 to 300 lbs., 15; over 300 lbs., 14.

Usual dock and price discounts for other weights and kinds.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs., Rivers, fancy 3.00@4.00; choice, 3.00@3.25; Oregon Gems, 3.50@3.75; Salinas, 3.75@4.25; Sweets, lb., 3½@4.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 4.00@5.00; choice 3.75@4.00; Yellow, 4.00@4.25; Whites, 3.50; Garlic, lb., 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 15@20; Lima, 12½@15

Carrots, per sack, 1.00@1.25.

Cauliflower, doz., 1.25@1.45.

Cabbage, doz., 40@55

Celery, doz., 45@50; cr. 6.00@6.50.

Cucumbers: Per box, 90@1.50; hothouse, 2.25@2.50.

Eggplant, lb., 7@10.

Lettuce, cr. of 3 doz., 1.25.

Peppers, Bell, lb., 8@10; Chili, lb., 7@8.

Peas, lb., 12½@18.

Pumpkins, per sack, 75@1.25.

Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 25@1.00; L. A. cr., 75@1.00.

Squash: Summer, bx., 1.50@2.25; Hubbard, sk., 1.25@1.50.

Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:

Apples: Bellflowers, 1.75@2.25; Newton Pippins, 2.15@2.50; Jonathans, 2.50@3.00; Spitzenburg, 2.25@2.75 ch.; fy., 3.00@3.50.

Avocados, small California, doz., 75@2.00.

Bananas, 8½@10.

Cranberries, 5.00@5.50 per standard box; barrel, 15.00@16.00.

Figs, double or single layer, 1.00@1.50 box.

Grapes: Malaga, 2.00@2.50 per box; Muscats, 2.00@2.50; Tokays, 1.25@2.50; Isabellas, 1.25@1.75 per crate.

Huckleberries, lb., 18@20.

Pears, box, 1.50@3.00.

Persimmons, box, 1.50@1.75.

Plums, 1.00@2.00.

Pineapples, doz., 4.50@5.00.

Pomegranates, 1.50@1.75.

Quinces, box, 75@1.50.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 5.00@5.50; choice, 4.50@5.00; standards, 2.50@3.00; lemonettes, fancy, 3.25@3.50; others, 2.00@2.50; grapefruit, fancy, 2.50@3.00; choice, 2.00@3.00; oranges, fancy, 4.00@5.00; navels, 4.00@5.00; limes, 1.50@1.75 per crate; tangerines. 1.50@3.00 cr.

ALMONDS

California Almond Growers Exchange opening prices:

Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HONEY

Jobbing prices: Extracted, Water White and White, 18@20 lb.; Light Amber, 16@18; Amber, 13@15; Comb, 25@28 for White and Water White and 23@25 Light Amber.

HOPS

1919 contracts per lb. around 75@90.

BEANS, PEAS

Jobbing price per cental:

Beans: Small white, 6.50@6.75; large white, 6.50@6.60; cranberry, 7.50@8.00; red Mexican, 7.00@7.25; pink, 6.35@6.50; California Bayou, 9.00@9.50; blackeye, 6.00@6.50; red kidney, 12.00@13.00; Lima, 13.75@14.25; Garvanza, 9.50@10.50; Kotenashi (in bond), 5.35.

Dried Peas: California, 6.50@7.00 per cental for green, recleaned.

RICE

Prices per 100 lb. bag:

California: Fy., 10.50; ch., 10.25; flour, 6.25.

DRIED FRUITS

Prunes:

Prune prices announcel by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.

Peaches:

Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1 1920, are as follows:

Standard yellows, 14¾c; Muirs, 15c.

Choice yellows, 15½c; Muirs, 15½c.

Fancy yellows, 16½c; Muirs, 17½c.

Extra fancy yellows, 17¾c; Muirs, 18¾c

Slabs, yellows, 14½c.

For "practically peeled" add 1½c per pound (any grade).

Prices above are all bulk basis.

For packing in 50 pound or 25 kilo boxes add 1 cent per pound.

25 pound or 12½ kilo boxes, all 1¼ per pound.

10 pound boxes, add 2c per pound.

Blue ribbon peaches packed 2 pound cartons, 12 per case, $10 per case.

Blue ribbon peaches packed 2 pound cartons, 24 per case, $10 per case.

Bakers' special, "practically peeled," 16¾c per pound, bulk basis.

Apples:

Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; fancy (in 50s), 23@23½.

Figs:

White: Cooking (in 50s), 15@16; choice (in 50s), 17@18; extra choice (in 50s), 19@20; fancy (in 50s), 21@22; extra fancy (in 50s), 23@24; bricks, 12 No. 10s, 1.60@1.67½; bricks, 24 No. 8s, 2.55@2.65; bricks, 50 No. 6s, 4.00@4.15; bricks, 70 No. 4s, 4.25@4.35; layers, No. 10, 2.50@2.80. Calimyrna: Cooking (in 50s), 19; choice (in 50s), 23; extra choice (in 50s), 24; fancy (in 50s), 26; extra fancy (in 50s), 27; bricks, 10 1-lb., 2.75; layers, No. 10, 2.95@3.20. Black: Standard 14, choice 17@18, extra choice, 18@19; fancy, 19@20.

Pears:

Standard 20, choice 22½; extra choice 24; fancy, 26@27.

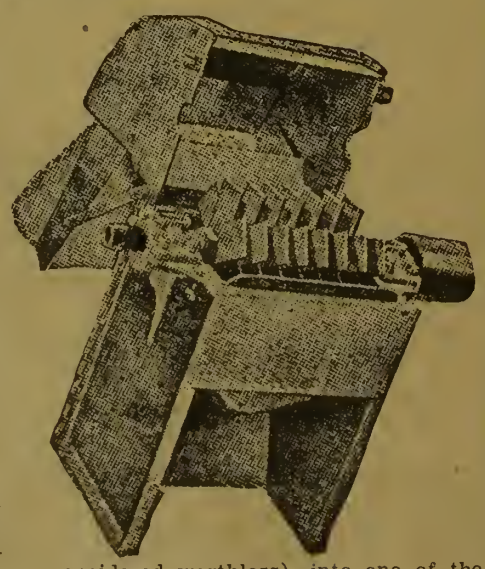
Raisins:

California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package, 15; fancy 16s, package, 15; fancy, 12s, package 11¾; choice, 16s, package, 14¼; choice 12s, package, 11¾; bulk, fancy in 25s, 14¼; bulk, bakers, in 25s, 13½; bulk, Mid

The "W-W"

(Hammer Principle) ALL PURPOSE FEED GRINDER

Utilizes Waste Products that being ground with a "W-W" are Valuable Stock Foods.



Many valuable foods for stock are being wasted in California because heretofore it was impossible to convert the waste products into safe food for stock.

But with the "W-W" All Purpose feed grinder that is having such remarkable sale since introduced by us, everything of food value to stock can be saved. Many feeders have made back double or three times the small cost of a grinder in the saving on feeds and the best part of it is the "W-W" Grinder is still working and working better than any grinder or beater (this is the hammer principle), that was ever sold in California, grinding the feed so it goes farther and does the stock more good.

One user has been converting almond hulls (not long ago considered worthless), into one of the very best and most valuable of ground foods for stock.

You can pulverize hay, cotton bolls, hulls, any kind of grain, fertilizer, shavings, poultry, rabbit and goat feeds into any degree of fineness.

Built in a wide range of sizes for horse and engine power. Write for information about W-W Mills and economical, efficient feeding, stating what raw material you have available and tonnage required. "W-W" grinders quickly pay for themselves.

E. P. Bosbyshell Co.

125 North Los Angeles Street

Los Angeles, California

agas and Feherzagos, in 25s, 13. Loose Muscatels: 4-crown, in 25s, 14¼; 3-crown, in 25s, 13¾; 2-crown, in 25s, 13¼; 1-crown recleaned, in 25s, 14. Seedless: Thompsons, 16s, 15½; Thompsons, 12s, 12⅛; Thompsons, bulk, recleaned, in 25s, 14½; Thompsons, bulk, bakers, in 25s, 15½. Bleached Thompsons: Choice, in 25s, sulfur, 18; fancy, in 25s, sulfur, 18½; extra fancy, in 25s, sulfur, 21; soda dipped, in 25s, 17¾; oil dipped, in 25s, 17¾, Sultanas, 16s, 15¼; Sultanas, bulk, in 25s, 14¼. Layers: 6-crown, flat pack, 20s, per box, 4.05; 6-crown, flat, 10s, per box, 2.20; 6-crown, flat pack, 5s, per box, 1.20; 4-crown, flat pack, 20s, per box, 3.20; 4-crown, flat pack, 10s, per box, 1.75; 4-crown, flat pack, 5s, per box, 1.00; 3-crown, tray pack, 20s, per box, 3.10; 3-crown, flat pack, 20s, per box, 2.95; 3-crown, flat pack, 10s, per box, 1.60; 3-crown, flat pack, 5s, per box, 95; clusters, 20-1s, cartons, 3.45; clusters, 12-2s, cartons, 3.80; clusters, 4-5s, cartons, 4.50; vineyard run, 100s, 13.00.

GRAIN

Wheat: The prices are based upon federal grades and standards at the terminals in San Francisco Bay and Los Angeles, and are as follows, per bushel of 60 pounds:

Hard White—	Per Bushel	Per Cental
No. 1	$2.20	$3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.13	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51½
Club and Sonora—		
No. 1	$2.16	$3.00
No. 2	2.13	3.55
No. 3	2.09	3.48½

The above are minimum prices.

For sacked grain add 4½ cents per bushel of 60 pounds to above prices. Deductions of three-fourths of a pound made for weight of standard grain bags. Wheat grading under No. 3 mixed or smutty wheat will be purchased according to merit.

Oats: Red feed, 3.05@3.10; black, 3.15@3.25.

Corn: California yellow, 3.00@3.10 per cental; Egyptian, 3.50@3.60; milo maize, 3.20@3.30.

Rye: 3.30@3.40.

Barley: Spot feed, per cental, 3.42½@3.45; brewing, 3.55@3.60.

HAY

Under date of December 6, Scott-Magner & Miller says:

Receipts past week 1,002 tons, evenly divided between rail and water. The car situation throughout the state is still deplorable. During the week we have had general rains whose value cannot be estimated. This is especially the case with the stockmen, as feed from the ranges was practically gone and without rain would have resulted in a long spell of feeding to maintain their stock.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay (light 5 wire bales)	24.00@26.00
No. 1 Wheat or Wheat and Oat Hay	21.00@25.00
No. 2 Wheat or Wheat and Oat Hay	20.00@22.00
Choice Tame Oat Hay	23.00@26.00
Other Tame Oat Hay	20.00@23.00
Wild Oat Hay	19.00@22.00
Barley Hay	19.00@23.00
Alfalfa Hay	21.00@26.00
Stock Hay	16.00@19.00
No. 1 Barley Straw, bale	.50@ .80

Citrus Markets

Los Angeles, December 10, 1919.

Occasionally spectacular prices are received but as a rule slightly easier condition prevails. The large holdover of Valenclas has been very acceptable to the Eastern rade but it has interfered somewhat with the demand for Navels. However, Navels have been exceptionally rich in sugar and solids so that they have proved satisfactory to the trade. Florida oranges are going to market at the rate of about 100 cars daily.

Lemons are commanding from $3 to $4 f. o. b. according to grade.

Shipments

Shipment of oranges from Southern California to date since November 1, 1919: Oranges, 2.491 cars; lemons, 449; total, 2,940. To same date last season: Oranges, 448; lemons, 701; total, 1,149. Central California: Oranges, 2,369; lemons, 81; total, 2,450. To same date last season: Oranges, 1,738; lemons, 149; total, 1,887. Northern California: Oranges, 178; lemons, 2; total, 180. To same date last season: Oranges, 115.

AT THE AUCTIONS

December 3

New York: 18 Val., 1 Nav., 4 lem. Val., 2.35@7.95; Nav., 5.30@6.60; lem., 85@3.35.

Boston: 10 or. Val., 2.60@6.00.

Philadelphia: 2 or., 2 lem. Val., 2.20@4.00; lem., 2.20@3,65.

St. Louis: 1 or., 1 lem. Val., 5.15@5.75; lem., 1.55@2.15.

December 4

New York: 10 Val., 1 Nav., 2 lem. Val., 3.60@7.20; Nav., 5.05@6.40; lem., 1.85@2.75.

Boston: 4 or., 1 lem. Val., 2.40@6.15; lem., 3.35@3.70.

Pittsburg: 3 or., 1 lem. Val., 3.35@4.85; lem., 2.20@5.50.

December 5

New York: 7 or., 2 lem. Val., 3.30@7.15; Nav., 4.05@6.50.

Boston: 6 or., 1 lem. Val., 1.75@5.40; Nav., 5.35; lem., 3.00@5.50.

Philadelphia: 7 or. Val., 2.90@6.35; Nav., 4.80.

Cleveland: 5 or., 1 lem. Val., 2.80@5.05; lem., 1.50@2.10.

Cincinnatai: 1 or., 1 lem. Val., 2.50@2.95; lem., 1.10@1.40.

December 8

New York: 31 or., 4 lem., 1 car Ariz. Navels. Val., 3.20@8.40; Nav., 3.95@6.05; Ariz. Nav., 3.25@5.55; lem., 1.50@3.25.

Boston: 16 or., 2 lem. Val., 2.50@5.50; Nav., 5.05; lem., 1.95@5.80.

Cleveland: 5 or., 1 lem. Val., 3.40@5.85; lem., 1.80@4.65.

Philadelphia: 13 or., 1 lem. Val., 2.30@6.40; lem., 2.20@2.95.

St. Louis: 3 or., 1 lem. Val., 3.70@4.75; lem., 2.50@3.00.

December 9

New York: 20 or., 3 lem. Val., 1.75@7.75; lem., 1.10@3.30.

Philadelphia: 8 or. Val., 2.10@4.65.

LOS ANGELES MARKET NOTES

Cabbage shows sharp upward trend owing to scarcity of storage crop in the East. In the last two or three weeks prices have advanced more than 100 per cent or from $30 per ton to $65 and $70 f. o. b. at present.

Ordinarily at this season cauliflower is going down but owing to recent cold weather the tendency is sharply upward, prices to producers being $1.75 to $1.85 a crate.

The tomato season is about closed, lug boxes bringing $1.50 to $2.00.

Lettuce is high, selling for more than it is worth as compared with other vegetables, California lettuce bringing $7.00 to $8.00 a crate in New York and none of it fancy. Locally it sells for $3.85 to $3.90 for straight carload lots and $4.00 in mixed cars, all of very ordinary quality.

One noticeable novelty on the local market is several tons of "Italian celery," the blanched centers of the artichoke plant, three to four feet high. Such tops sell readily at $1.50 each.

Hubbard and other squashes and pumpkins are in largest tonnage and plenty of watermelons and casabas still coming in. Lug boxes filled with large choice ripe olives were seen in a few stalls. Pears and persimmons were few and

TULARE HOLSTEIN SALE

Continued from Page 803

Mally Duchess Extra, B. H. Storm, Tulare; $225.

Nancy Korndyke of Riverside, J. H. Scott, Tulare; $125.

Colantha Mutual Lass, J. A. Knight, Tipton; $155.

Oleander DeKol Eva 2nd, Frank Martin, Visalia; $260.

Major Romeanna, Antonio Carriera, Tulare; $70.

Mary Roma Canary, H. Halff, Tulare; $225.

Griselda Canary, Frank Martin, Visalia; $265.

Roquetta Paula, J. H. Scott, Tulare; $75.

Total, $3,845. Twenty head averaged $192.

Consigned by H. J. Stevens, Visalia

Jennie Karen Sarcastic, R. L. Holmes, Modesto; $295.

Queen Karen of Windsor, Robt. T. Curtis & Son, Exeter; $170.

Jennie DeKol, J. A. Knight, Tipton; $125.

Queen of Windsor, R. L. Holmes, Modesto; $145.

Colanthus, J. A. Knight, Tipton; $150.

Jennie Karen 2nd, J. A. Knight, Tipton; $125.

Total, $1,010. Six head averaged $168.

WEATHER REPORT

San Francisco, December 6, 1919.

Stations.	Wk.	Season.	Norm.	Temp. Max.	Temp. Min.
	Rainfall——				
Eureka	1.54	5.58	11.07	58	36
Red Bluff	1.44	2.50	6.38	56	36
Sacramento	1.59	2.31	4.25	56	38
San Francisco	1.70	2.37	4.76	57	45
San Jose	2.15	2.73	3.68	58	42
Fresno	.37	.97	2.27	66	42
San Luis Obispo	3.44	4.08	3.83	64	36
Los Angeles	1.70	4.01	2.66	66	44
San Diego	.18	1.92	1.55	62	42

An Opportunity to Share in the Profits of

MONTGOMERY WARD & COMPANY

INCORPORATED

The Great Mail Order House

You have probably been a customer of Montgomery Ward & Co. for years. You have probably sent hundreds of dollars by mail to this concern. Perhaps it has never occurred to you that some day YOU might be able to own a few shares of stock in Montgomery Ward & Co.—be able to share in its profits. Here is such an opportunity.

510,000 Shares Common Stock at $45 Per Share

when, as and if issued and received by us.

The great Chicago mail order house is expanding—increasing its capitalization. It expects to do a greater business than ever before—to earn even larger profits. If this proves true Montgomery Ward & Co. common stock should steadily increase in value and earn handsome dividends.

On Monday, December 8th, 1919, 510,000 shares of the new common were offered to the public for the first time at $45 per share. Indications on that day were that it would all be quickly sold—that to secure any of it, you will have to place your order immediately.

Write NOW for Circular!

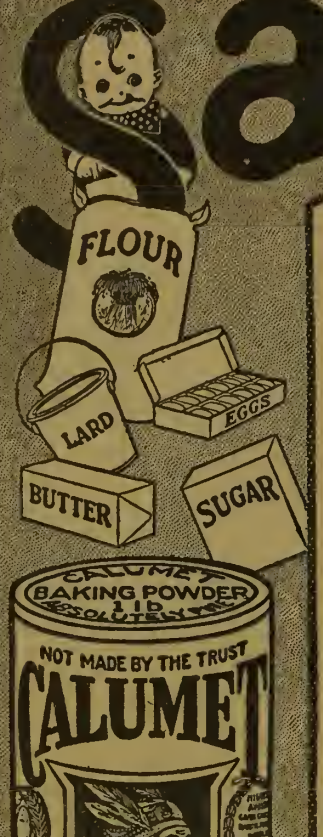
A circular fully describing this stock issue has been prepared. It tells of the gigantic nature of the business—the earnings of the company—of the dividends that have been paid. Write for this circular TODAY. Learn how YOU may become a partner in the business of Montgomery Ward & Co. Write for the circular NOW!

John Burnham & Company

41 South La Salle Street Chicago, Ill.

The statements in this advertisement, while not guaranteed, are based upon information and advice which we believe to be accurate and reliable.

CALUMET Saves



Calumet Baking Powder forms the very foundation of kitchen economy. It is the best way to reduce the high cost of living.

There's nothing you can do, nothing you can use that will help so much in keeping down food expense.

CALUMET is so perfectly made—so perfect in keeping quality — that bake-day failure is impossible. Nothing is wasted or thrown away. Everything used with it—flour, sugar, eggs, flavoring—is converted into wholesome bakings.

Makes Most Palatable and Sweetest of Foods

You save when you buy it—moderate in cost. You save when you use it—has more than the ordinary leavening strength — therefore you use less. You save material it's used with.

Made in the world's largest, most modern baking powder factory. Contains only such ingredients as have been officially approved by U. S. Food Authorities.

Order today! Conserve! Economize! SAVE.

All Baking Materials

Old Mission-Balloon Route Trolley Trip

Two Dollars' Worth of Pleasure
Two Days' Travel Reduced to One for **$1.00**

Many Free Attractions En Route and Novel Sights Each Mile and Each Turn of the Road

PACIFIC ELECTRIC — COMFORT-SPEED-SAFETY

Your Visiting Friends Will Appreciate This Trip

Procure New Illustrated Descriptive Folder Today

O. A. Smith, General Passenger Agent Los Angeles

Pacific Electric Railway

Last Car 9:A.M. from the Main St. Station, Los Angeles

When Writing Advertisers, Mention the Cultivator.

Household Department

SANTA CLAUS IS COMING

Old Santa Claus is coming—
The time is very near—
Before we realize it
Old Santa will be here.

He'll bring us sleds and wagons,
And nuts and sugar plums,
And dolls, and furs, and dresses,
And balls, and swords, and drums.

He'll come when we are sleeping,
Tucked in our bed so white,
And all the stars are peeping
At this, our Christmas night.

He'll come with smiles and blessings
Along the milky way,
And stop at every dwelling
Where little children stay.

He'll garnish trees with presents
And, while the world is still,
With gifts the children asked for
Each stocking he will fill.

But, better than all presents,
He'll bring to us again
The heartfelt Christmas wishes
Of "Good will unto men."

—Martha Coleman Sherman in Chicago Inter Ocean.

THE EVOLUTION OF SANTA CLAUS

It used to be, quite long ago, Old Santa
walked from door to door,
He carried his pack upon his back and
gave alike to rich and poor;
So many asked that he would call there
was no end to it 'twould seem,
His presents, therefore, he must haul
each Christmas with a reindeer
team.

It used to be, quite long ago, Old Santa
had his good reindeer,
With curling whip and jingling bells and
old-time sleigh, so quaint and queer.
The world moved on at such a pace; the
dear old man watched from afar.
And knew he'd one day lose the race
unless he got a motor car.

It used to be, quite long ago, Old Santa
thought his car quite swell,
But things were changing, so you see
Old Santa had to change, as well.
'Twas for the best 'twas cast aside—
'twill ne'er be used by him again
For Santa's very modern now—he
travels in an aeroplane.

—Orange Judd Farmer.

THE ALTERED CHRISTMAS

"NO" said Mrs. Stephens decidedly, as she poured her husband's tea and spread a slice of bread for Gertie, her youngest child; "I don't believe in poor folks like us spending a lot of money for Christmas. Anyway, we can't do it this year because we haven't got it to spend."

"Couldn't we spare just a little?" asked her husband hesitatingly.

"I don't see how we can do it and keep up the payments on this house," she replied firmly.

"Of course you know best, but I thought mebbe just a little," he murmured apologetically.

"Then ain't we going to have any Christmas at all—no presents, or dinner, or anything?" asked Laura in alarm.

"You'll have dinner all right, and a good one, too; pork an' beans, and apple pie is Christmas dinner enough for poor folks." Here fat little eight-year-old Gertie began to cry and had to be chided. Laura and Gertie White were Mrs. Stephens' children by a former marriage, for she and Mr. Stephens had been married less than a year. At the table also was Marie Stephens, and while the two little White girls kept up a lamentation regarding the decree of "no Christmas," she preserved a silence that made Mrs. Stephens uncomfortable.

'Hush," she said, but not sternly, to her own progeny. "Think of last year and be thankful that you are so much better off than you were then." Her eyes rested on Mr. Stephens' commonplace figure in unwonted tenderness. "Last year," she said simply, "we were living in two rooms, and were glad to have a fire and enough to eat. Some of the time there wasn't a bite left after a meal, but I always managed to get something before the next one. Do you wonder, though, that I look after those payments before anything else?"

"No," replied her husband, "and you're right about it. I'm glad you're so practical-minded. But we'll all feel so proud when we get a home paid for that we ought to be willing to go without other things. I guess we're all more comfortable than we were last year. Marie and I was boarding with ol' Mis' Green, and it wasn't much like this, was it Marie?" He did not pause for any reply from the child but went on, "I ain't going to work tomorrow, and we'll do something to have some fun—go a-sliding on the hill while Ma's getting dinner, and mebbe she'll let us make candy and popcorn in the afternoon."

Mrs. Stephens smiled her consent, and the children looked glad again. Mr. Stephens put on his overcoat and kissed them all around before he went back to his work. The children donned their outdoor garments, and each kissing her hastily ran off to school. Mrs. Stephens dreaded to have Marie kiss her. She fancied that the child hated it, and only did it because her father told her to. She was always in fear that some day Marie would refuse, and then it would be harder for them both than if the habit had not been begun. Marie seemed to her stepmother to be always watching and judging her. The child was quiet and docile, but underneath her docility Mrs. Stephens was aware of a great strength of character. She wanted to love her husband's child and already favored her more than she did her own, but she could not seem to win the child's open confidence.

In one thing only had Marie opposed her stepmother. Mrs. Stephens, intensely practical as she was, considered the name "Marie" as fanciful, and sometimes addressed her as ""Mary." Marie, with the utmost politeness, always corrected her. "My mother called me 'Marie,'" she said each time until Mrs. Stephens adopted that pronunciation.

In her first matrimonial venture, Mrs. Stephens had been very unfortunate. The neighbors spoke of her as "a good manager, but married to a poor pervider." Mr. White had rapidly drunk himself into the grave, and for three years his wife had had a hard struggle to provide for herself and her two children.

Mr. Stephens, on the other hand, had been a good provider married to a poor manager. He was a shoe cobbler by trade, and had a little business of his own where he earned good wages. He never referred to his first wife's extravagances but his life with her had been one long struggle to keep out of debt. She had been dead a little more than a year when he asked Mrs. White to marry him, and in the country town everyone expressed satisfaction at the suitability of the match. Already they were established in comfort in the house they would soon own, and the worries that they had each had were gone.

Sometimes it seemed almost too good to be true to Mr. Stephens that he and Marie should be so well cared for, for like many extravagant women, Marie's mother had been a careless and untidy housekeeper. She was subject to long fits of sulks, too, when she neglected her child altogether. If his wife now seemed almost too practical regarding Christmas, he thought of his former troubles and concluded to let her have her own way.

As she cleared the table, Mrs. Stephens looked thoughtfully at a piece of cold meat that was left. "I could make a bit of mincemeat out of that," she thought, almost guiltily, "and surprise 'em with a mince pie, instead of apple. 'Twon't do no harm to give 'em that much extra for dinner." When one has taken a stand it is sometimes hard to back down, but her husband's lack of opposition helped her to give in this much.

Somewhat to her surprise the children were talking. There was a rule that there should be absolute quiet as soon as the lamp was out, a rule that Laura and Gertie often broke, but never before had Mrs. Stephens known of Marie's doing so; this time, however, she was the offender. With a consequent reluctance to reprove her, the mother stood there for a moment thinking that perhaps she had happened to go to the door just as the child spoke and that it would be quiet again in a moment. But no, Marie was telling them about her former Christmases. When she was six years old her mother had made her a pink silk dress, with spangles all over it, and had taken her to a real grown-up party where folks danced all night

"And did you have a perfectly grand time?" inquired Laura.

"Not after the first," admitted Marie. "I was sleepy and cried to go home, and Pa took me; and then Ma was mad and wouldn't ever take me again."

After this bit of intimacy, Mrs. Stephens hated to speak more than ever, so she still stood there in doubt waiting for the conversation to change, or stop entirely.

"Tell us what else your Ma got you," demanded Gertie.

"One year she got me a doll that was a yard long, and it could say 'Mama' just as plain as anything. And she got me a cab to wheel it in. And one year she got me a toy piano, only it got broke awful quick, and a set of furs. And the last year she was with us she bought me a bracelet and a locket—you've seen 'em, you know."

(Continued next week.)

CHRISTMAS STORY CONTEST WINNERS

First Prize, Eleanor Clarke, Visalia, $2. Second Prize, Beatrice Fuller, Fairmead, $1. Award of one year's subscription to the Cultivator: Ruth Kelley, Los Angeles; Florence Greenough, Merced; Stella Haverland, Santa Barbara; Emma Lehnhardt, Santa Ana; Bernice Husted, Van Nuys; Dwight Husted, Van Nuys; Elvira Rodrigues, Santa Maria; Mildred Mitchell, Fairmead; Mildred Cornell, Delano; Wilma Kemp, Cupertino.

First Prize Story.

THE CHRISTMAS I LIKE

By Eleanor Clarke, Visalia, 12 Years Old.

We were living with grandmother while father was building a house on our new ranch. Mother paid my little sister and me for doing the dishes and helping grandmother. This money we saved for Christmas. Oh, how much fun we had spending it! We decided to buy useful things.

There were some small stores near by. In passing one of them mother saw a glass pitcher that would hold a large piece of ice, so I bought it for her.

For father I bought a pair of socks, and stockings for both grandmothers, several handkerchiefs and quite a number of Christmas cards.

My sister bought all the bright colored pencils in the corner store. She also bought some candy canes.

Mother said we could have a tree if we would trim it ourselves. We made red bells and paper ornaments, popped corn and strung it with cranberries. We put up a sign to keep the people out, that said, "No admittance until Christmas eve." Sister thought her pencils and her candy canes looked beautiful on the tree.

We could hardly wait until Christmas eve when father came and we had the tree. There were lots of presents and everyone had a good time. We always have had a tree Christmas, but I liked this tree best because I trimmed it myself.

Christmas day we had a big dinner at my uncle's, more presents and an automobile ride.

This year we are living on our ranch. Our folks are coming up in the machine to spend Christmas with us. We have some puppies and little calves to show them, and mother has lots of good things put away in the cellar that she made from recipes she found in the Cultivator.

Second Prize Story

WHAT I LIKE BEST FOR CHRISTMAS

By Beatrice Fuller, Fairmead.

Christmas eve my sister and I hang the stockings for the family. Seeing we haven't any fireplace, we hang our stockings on the backs of each person's chairs, so the bulky presents can be put on the seats of the chairs. Then we children put our gifts in the stockings and go to bed and wait patiently for morning.

If it is cold mother always has a fire in the front room so we children can dress and look at our presents at the same time. I love to put my hand in the stocking and wonder what I'm going to pull out next. It is sure to be something I want.

We always get lots of presents. Last Christmas my brother got home from the army on the 24th of December and did not have much time to get anything. But he went to town that night and bought what he could, but everything was so high. But he got lots of good things just the same.

Something else I like, too, and that is Christmas dinner. Mother generally gets up a big dinner. We always have a big turkey gobbler with lots of dressing and gravy, mashed potatoes, salad, cranberries, two kinds of bread and butter, mince pie, plum pudding, raisins, nuts, apples, oranges and grapes. We raise most of what I have mentioned in the menu. We always have plenty to eat at our house on Christmas. I wish I could share part of my dinner with some poor person. We most generally have some one who cannot have any Christmas dinner.

There is my father, mother, brother, sister and I that will be here this Christmas, and whomever we ask.

A CHRISTMAS LETTER

By Ruth Kelley, Los Angeles

Dear Cousin: I am writing you today to thank you for the beautiful hair ribbon you sent me. I know you want to hear about the good time I had on Christmas.

We were very anxious to go to bed on Christmas eve so morning would come soon, but we did not go before hanging our stockings over the fireplace. We could hardly wait for morning to come. We were up very early but mother makes us eat breakfast the first thing because we would not want any after getting into the candy. The living room doors were all closed and no one could get a peep at the tree. After breakfast we all formed in line according to age, starting with the youngest. There was great excitement in the air. Everybody was shivering with delight waiting for the doors to be opened. After what seemed a long time the doors opened and we were told to look at our stockings first. There were fruits, nuts and some raisins in them. At the bottom was a large chocolate cream. Next we looked at the tree. Besides the usual decorations of tinsel, strings of popcorn, colored balls and electric lights, the tree was trimmed with frosted animal cookies mother had made and cornucopias filled with candy. Underneath the tree the presents were piled. Suddenly there was a jingle of bells and someone cried, "Look at Santa Claus!" Then Santa came in. He distributed the presents to everybody. Then we all sat down to look at them. Our presents this year were all useful. I think I had a very pleasant Christmas, don't you?

Lovingly your cousin, Ruth.

THE PART OF CHRISTMAS I LIKE BEST

By Bernice Husted, Van Nuys, age 13

The most joyful part of Christmas to me begins with the selecting of an appropriate Christmas tree for our family gathering.

When the tree is placed in the corner nearest the fireplace and we proceed to decorate it with popped corn, cranberries, apples, candy, tinsel and candies and then neatly arrange the presents on and around the tree, and when all is complete, and every member of the family is gathered together in their places in the room, all the lights turned out, and candles are lighted, the supreme moment comes when the jingling of bells outside is heard, and Santa Claus (Daddy) comes bounding, laughing, talking into the room, making all hearts glad with excessive joy. After this joy has partly subsided Santa Claus proceeds to pass out the presents, but suspense and excitement still reigns until every package has been opened and everyone has seen each other's gift.

To me, this is the part of Christmas I like best.

WHAT PART OF CHRISTMAS I LIKE BEST

By Stella Haverland, Santa Barbara, age 11 years

I think Christmas is one of the jolliest times of all the year. From counting my money to spend to opening the presents taken from the beautiful Christmas tree, decorated with strings of popcorn and ornaments galore, to eating Christmas dinner with its turkey, cranberry sauce and other things, or the ride and games after dinner, I think there is no nicer time than buying the presents and wrapping them to give to my friends and relatives.

A book that father has been longing for is purchased and put away,

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ready to be wrapped and put on the Christmas tree. A sofa pillow for Aunt Jane is put away with father's present. Next a toy train for brother Dick is put away with them. Then Little Sister's present is purchased, a silver thimble, something that she has been longing for ever since she could sew. A warm kimono for mother, a pair of house slippers for grandmother, and other gifts complete the list. A few days before Christmas I wrap the presents in tissue paper, tie them with Christmas ribbon and tie the Christmas tags on them. The gifts are then ready to be put on the Christmas tree at home or taken away to other houses.

The reason I like to give so much is first, it is nicer to give than to receive, and, second, because if I can give only a small present it is better than giving nothing in return for what I receive.

Soon Christmas will be here and gone and we will look forward to its coming again next year with much eagerness.

WHAT PART OF CHRISTMAS I LIKE BEST

By Dwight Husted, Van Nuys, age 8

I like to be sitting around the Christmas tree and have Santa Claus pass out the presents and to sit at the table eating turkey and quackless duck and pie and cake, and then play with my toys when we all get through eating.

TRIMMING THE CHRISTMAS TREE

By Emma Lehnhardt, Santa Ana, age 10 years

I like the time when we trim the Christmas tree. When we children were smaller father and mother trimmed the tree after we were in bed. Now we are older and have the pleasure of decorating the tree ourselves.

In the afternoon of the day before Christmas my brothers go out to hunt up a tree, which is usually a small cypress. They fit it in the tree holder and stand it upon the table in the living room, because the baby would get it if it were on the floor.

Now we prepare the trimmings. We string popcorn; we get animal crackers and tie them onto the tree, also candles wrapped in waxed paper to keep them from getting dusty. Then we put on the festoons of popcorn and strips of red tissue paper. Last we put on the candles. We enjoy trimming the tree and afterwards we eat the decorations.

In the evening when we light the candles we sit around the tree and sing "Silent Night, Holy Night."

OUR CHRISTMAS

By Florence Greenough, Merced

Dear Friend:

Of course you know that the Christmas spirit is to give to others who have less than yourself. I belong to a club which adopted a war orphan last year. I sent some money for her last year and will this year, too. This year I began to think what to get for Christmas about a month before. I think to plan for Christmas is about as nice as having it.

We usually have a small tree, and I just love to pop and string popcorn and to put it in and out among the branches. I like to put on the tinsel and help hang on the ornaments. Then it is ready for my mother and father to put on the presents, hang up the sheet and it is ready for Christmas morning.

We children like to get up on Christmas, get our stockings, go back to bed and find the nice things that are in them. We like the dinner, and if the day is nice we go for a ride afterward.

THE CHRISTMAS TREE

By Elvira Rodrigues, Santa Maria

The best thing I like is the Christmas tree its own self, I think everybody does too. The tree is liked because the beautiful decorations make it beautiful and the gifts upon it too. The drums and soldiers make it pretty too. I like to hear the Christmas bells ring at Christmas Eve but I don't like them as well as I like the Christmas tree. I think everybody in the world likes the Christmas tree too. And I guess the California household department likes it too.

CHRISTMAS DAY

By Mildred Mitchell, Fairmead, age 1

For my part I prefer Christmas day. With what expectations you open your eyes in the morning! How eagerly you dress and run to see what Santa has brought. Then, when all have gathered around the Christmas tree, the opening of packages begins. Baby has a new doll; brother, a gun; father, a book; mother, a ring; and big sister finds a box of candy from the dearest boy in the world. Oh! what shouts of joy are heard as each new wonder is displayed.

The morning wears away and noon comes. Mother announces dinner. The children do not need to be called twice. Each one finds his place and what a jolly bunch they are, mother, father, children, grandmother, grandfather, uncles, aunts and cousins, each one laughing and talking. How good the dinner tastes! How amusing the stories! Grandmother's eyes are bright with excitement. At last the plum pudding is brought in. The dinner would not be complete without the pudding. Each one is given his share. Was there ever such a pudding? Will there ever be another like it? No, there will not.

After dinner friends come to exchange greetings and to gossip. Some one suggests a game. All become excited. Before we realize the fact it is tea time and then the long, cozy evening about the fire. Father or mother tells a story; sister brings the popper and soon each one is eating popcorn. Just before bedtime Cousin Kathryn goes to the piano and begins to play, first some of the songs of today and then into the sweet songs of long ago. Soon everyone is singing. At last father says: "Away to bed, children, it is very late." And so ends Christmas day, to me the happiest day in the year.

THE PART OF CHRISTMAS I LIKE BEST

By Mildred Cornell, Delano

I am going to describe which part of Christmas I like best.

When we hear Santa's bells early Christmas morning we jump out of bed and dress. Oh, what a sight when we enter the big front room and look around at the walls all decorated with holly and bells, and look down and see the toys all around the floor, but best of all look at the Christmas tree, all decorated with presents.

Then comes jolly old Santa, all dressed in his red cloth suit and white fur. He goes over to the tree and distributes the presents. The presents are all tied up with pretty ribbons. Then he begins to distribute the presents on the floor.

Then we turn around and see the fireplace and the empty stockings that we hung there the night before, and now just chuck full of candies and little things and we begin to take out the things to see what is in the very toe. Then we begin to unwrap the packages, very eager to see what is inside such funny shaped bundles. Mother blows out the candles and we all go in to breakfast, and such a breakfast, all hot and ready to eat and just think what a merry Christmas we do have!

Don't you think that is the jolliest part of Christmas?

GRANDMA'S CHRISTMAS

By Wilma Kemp, Cupertino

The part of Christmas that I enjoy most is Christmas eve. Our Christmas tree is gayly lighted with many bright candles. It also contains bells, tinsel, popcorn strings and other pretty decorations, the result of much work and care. The room is filled with a woodsy odor from our tree which stands in the center of the room. We all sit around it, the only light being from its glowing candles. Nuts, apples and popcorn are passed around, and a Christmas story is told by Grandma. She tells us a story from her childhood days. It is like being taken back many years as we listen to her.

"When I was a little girl of about ten," she begins, "good times were few and far between, but Christmas was never forgotten by anyone, whether young or old. The day before Christmas Bob and I drove out horse to the woods for a tree. The

The Cultivator Patterns

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3044. Misses Dress. Cut in 3 sizes: 16, 18 and 20 years. Size 16 will require 3¼ yards of 44 inch material. The Skirt measures 1 2-3 yard at the foot. Price, 10 cents.

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2657- Child's Short Clothes Set. Cut in 5 sizes: 1, 2, 3, 4 and 5 years. Size 4 requires 3¼ yards of 27-inch material for the dress, 1¾ yards for the petticoat and 2⅞ yards for the combination. Price, 10 cents.

3046-3048. Business Costume. Waist 3046 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 will require 2⅝ yards of 36 inch material. Skirt 3048 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Size 24 requires for a one-piece skirt, 2⅝ yards of 48 inch material if cut crosswise, and 2⅛ yards of 54 inch material if cut lengthwise. With front and back seams—2¼ yards of 54 inch material will be required if cut with front edges straight, and 2¾ yards if front and back edges are cut bias. The Skirt measures about 2½ yards at the foot. Two separate patterns, 10 cents for each pattern.

3051. Girls' Coat. Cut in 5 sizes: 6, 8, 10, 12 and 14 years. Size 12 will require 4¼ yards of 44 inch material. Price 10 cents.

3045. Ladies' Envelope Chemise. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size Medium requires 2⅝ yards of 36 inch material. Price 10 cents.

3062. Boudoir Set. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size Medium requires ⅝ yard for the cap, and 3⅜ yards for the sack, of 32 inch material. Price 10 cents.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles.

was a drive of three miles. We picked out the tree we thought prettiest and put it on our sled. We didn't have the bright decorations that you children have tonight. We strung berries and popcorn and made our own candles. This was certainly tedious, but we enjoyed it greatly. After we had added the finishing touch to our beautiful tree, mother covered over the fire and told us to scamper off to bed. I went to bed only to lie awake trying to think of what I would get. When morning came, I was the last to awaken. Father called us into the parlor where our tree was and told us to get our presents. Mine consisted of a corn cob doll and some other trifle, but I was very happy and thought my presents two of the finest in the world."

THIS WEEK'S PATTERNS

The graceful misses dress 3044 has what the best makers of dresses strive always to secure—lines. In fact that is all there is to it, simply a soft material which depends on fitting, neat making and carriage of the wearer for its effect. In silk or wool jersey, any of the popular knit weaves, tricolette, tricotine, any soft wool or silk it will be charming. And remind daughter not to slump too much when she wears it. The number of round shouldered young girls is painfully increasing due to the ungainly "debutante slump" recently popular.

A good coat style for little girls is shown in 3051. A plain pattern such as this developed in substantial material is good until it is grown out of. Don't be tempted by new material unless it is all wool and closely woven. The shabby and shoddy materials which have been foisted upon us by unscrupulous manufacturers with "war and labor" excuse are fit only to be left on the shelves and turned back to those manufacturers with request for honestly made cloth. There is good material to be had—and even at reasonable price—but shoddy is expensive if it is given away.

The boudoir set 3062 is exquisitely dainty and would be dear to the heart of any girl—that means girls of all ages. It is graceful, simple, washable and becoming. The simple embroidery is characteristic of the "smartest" of this season's wear. We would suggest georgette, pussy willow, flannel, challis, soisette, chambray in plain material with embroidered edge in dark contrasting color. Soisette is a very satisfactory material by the way—and cheap. It is very soft and silky in texture, wears well and may be purchased in soft dainty shades.

The child's set, dress, petticoat and combination, will appeal to any woman.

HOUSEHOLD QUERIES

Thousand Island Salad

I noted in a recent number of the Cultivator that you asked for a recipe for Thousand Island salad so I am sending you mine which calls for a new variety of French dressing. Cut lettuce in eighths lengthwise. Arrange for individual service and pour over the following dressing: Put in pint glass jar one-half cup olive oil, juice of one-half lemon, the juice of one-half orange, one-half teaspoon of grated onion, one tablespoon of finely chopped parsley, eight olives (from which stones have been removed) thinly sliced lengthwise, one-half teaspoon of salt, one-fourth teaspoon of paprika, one-fourth teaspoon of mustard and one teaspoon of Worcestershire sauce. Cover and shake vigorously until smooth and slightly thickened. Chill thoroughly and shake again just before using. If Southern lettuce is not at hand this dressing is good placed on any salad green.—Mrs. Ross Sloper, Kerman.

Another

Some reader inquired in recent issue of this paper about Thousand Island Dressing, and as I noticed the suggestion of the editor and feel that it does not cover the subject I hasten to give you recipe as it is used by leading hotels here and abroad: One cup mayonnaise, two teaspoons chili sauce, chopped green pepper and chives, two chopped eggs (hard boiled), little taragon vinegar, two drops Worcester sauce. With best wishes to your useful paper.—Mrs. R. Blazek, Bishop.

HOW TO CLEAN LACE

Measure before washing it, as in the case of curtains or collars, it is important to keep the original size and shape. Very delicate lace should be basted carefully on a piece of cotton cloth and washed on that to prevent straining the lace. Wash in lukewarm water and soap solution, squeezing rather than rubbing out the dirt. Bleach by setting in direct sunshine and keeping moist with soap or borax solution. Rinse thoroughly. Restore a faded cream or ecru color by rinsing in clear coffee or tea and stretching immediately; the color of the liquid as seen through a tumbler held up to the light should be the same as that desired in the lace. In drying, stretch on a padded board and pin into its original shape and size. Net or lace curtains may be pinned to a sheet on the floor or, better, placed on a curtain stretcher adjusted to the desired size.

Lace may sometimes be cleaned by covering it with warm French chalk, allowing it to stand overnight and then shaking thoroughly.

CLEANING WITH GASOLINE AND BENZINE

Never let a careless person use these inflammable cleaning fluids.

Use out of doors; in the shade; away from flame or fire; in a cool place; never store in the house.

GROWING OLD

It sounds paradoxical, but the way to stop growing old is to grow.

Most of us stop growing, wilfully, deliberately and unnecessarily. Then we begin to grow old.

We let the mind follow the body, let our thought processes get fat, flabby and gray haired.

The mind was not meant to do anything of the kind.

The mind can hop and jump just as well at 60 as at 16.

The mind can dance, even though the legs get rheumaticky.

Not enough of us realize this.

We think we must stop reading when we have left school, and that there is no need of continuing to learn once we have acquired a trade or profession.

Youth is a state of development. So long as we have something ahead to develop for, we will remian young.

Bodily growth furnishes us inspiration for the first twenty years or so. After that we must produce it from our own intellects.

If we fail to produce it, we come to a standstill and begin to grow old. — Houston Chronicle.

Mark spots with white thread; otherwise they are hard to find after the whole garment is wet.

Immerse the whole garment in the bath. Take out spots by rubbing very lightly between the fingers.

Wash as you would with water; a hand washing machine is excellent.

Rinse in clean liquid, changing it until it remains clear. If too little is used, the garment will look grimy.

Dry out of doors.

Used gasoline may be strained through muslin and used again for the first washing but never for the final rinsing.

DRY CLEANING WITH POWDERS

Powders used in dry cleaning are French chalk or magnesia, fuller's earth, corn meal, sawdust, etc.

Warm the meal or powder.

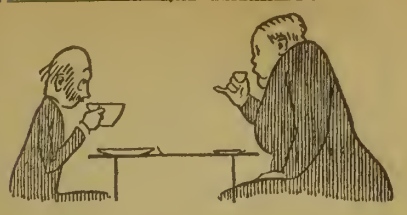
Spread it on the material and rub it in either with the hands or with a brush. Let it remain at least several hours.

Renew the powder or meal as it becomes soiled.

If one treatment is not enough, cover again with warm powder or meal and let it stand overnight.

Be sure to brush all powder or meal from the garment.

This method is especially good for collars or other parts which show soil before the rest of the garment.



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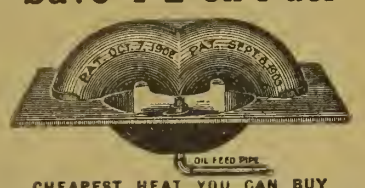

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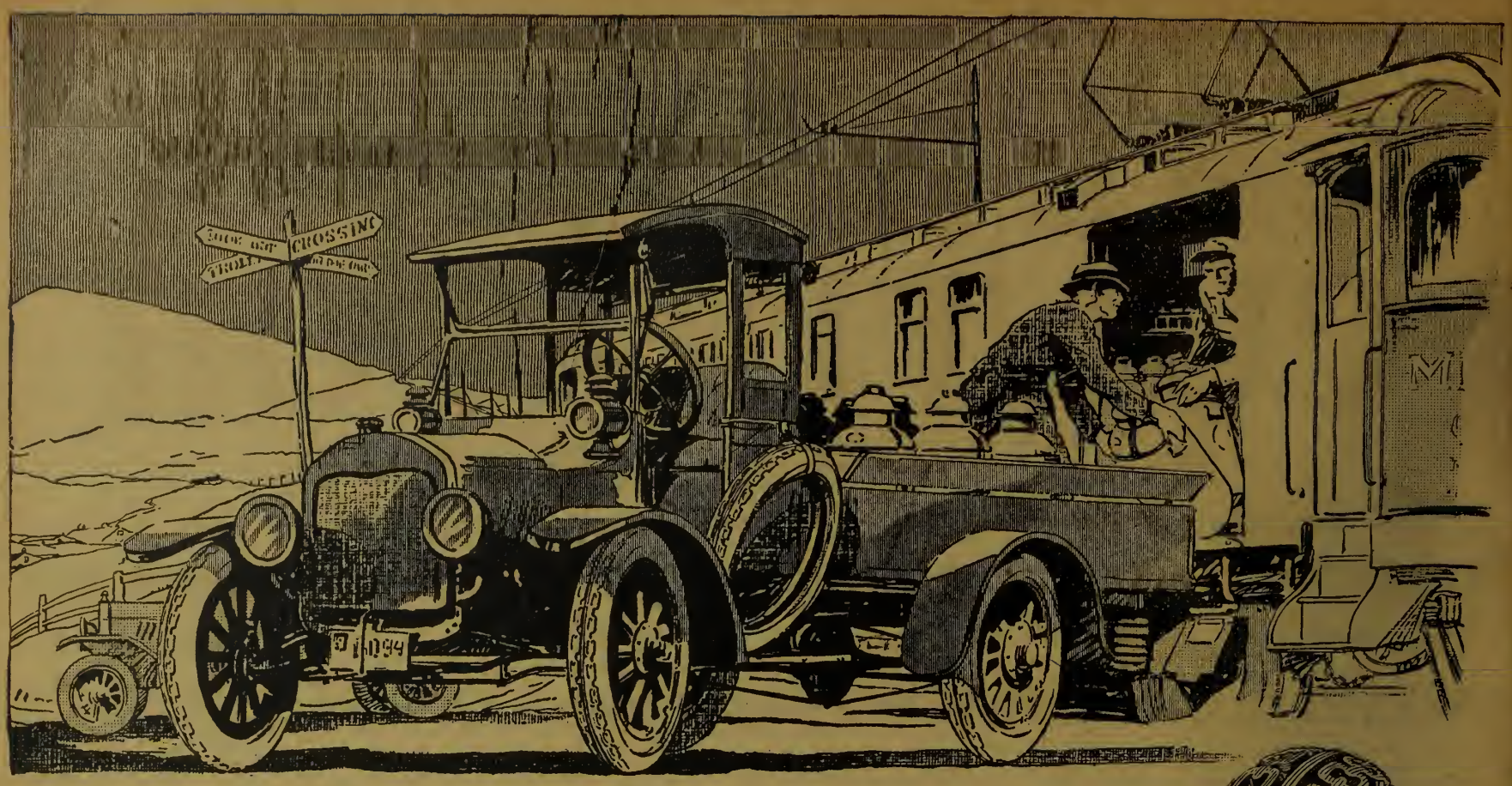

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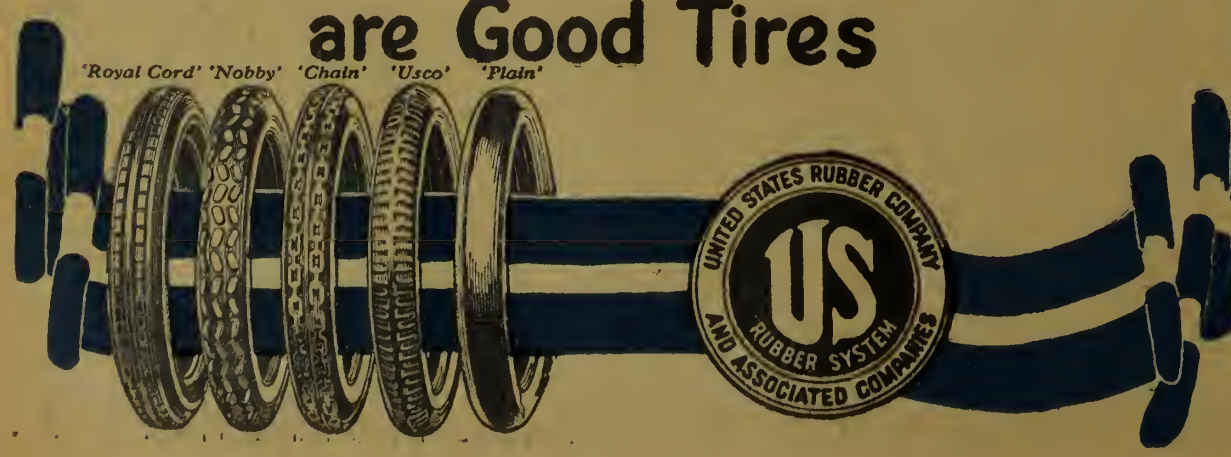

CALIFORNIA CULTIVATOR

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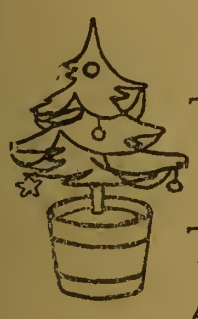
Vol. LIII — December 20, 1919 — No.25



THE EARTH HAS GROWN OLD

The earth has grown old with its burden of care,
But at Christmas it always is young;
The heart of the jewel burns lustrous and fair,
And its soul full of music breaks forth on the air,
When the song of the angels is sung.

It is coming, old earth, it is coming tonight!
On the snowflakes that cover thy sod
The feet of the Christ-Child fall gentle and white,
And the voice of the Christ-Child tells out with delight
That mankind are the children of God.

The feet of the humblest may walk in the field
Where the feet of the holiest have trod,
This, this is the marvel to mortals revealed
When the silvery trumpets of Christmas have pealed,
That mankind are the children of God.

—Phillips Brooks

Established 1877 Forty-second Year

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and LIVESTOCK and DAIRY JOURNAL

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OUR ADVERTISERS RELIABLE

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THIS WEEK'S COVER

This week's cover is dedicated to the greatest anniversary day of the Christian world. "The earth has grown old with its burden of care, but at Christmas it always is young," and we are all young as at no other time of the year. May this be the brightest and happiest and holiest of all Christmases for Cultivator readers.

A GOOD TURN

The Boy Scouts have for one of their slogans "Do a good turn daily." To which we may add "Then forget all about it and do several more."

ANDY LOVEJOY

Andrew J. Lovejoy, one of the first and largest breeders of Berkshires, died recently at his home in Roscoe, Illinois. He was a graduate of the University of Hard Knocks and began without a penny but hammered out a successful career for himself. He has many a warm friend in California.

CANNED FOLKS

The Youth's Companion says:

"There are people in the world for whom self-preservation is a process of canning."

This is rather a reflection on the canning process which is so extensively used with California fruits, and there is considerable difference in the value of canned fruits and canned people. The process of canning extends the usefulness of the fruit, while these self-preserved folks have little of usefulness to extend.

GROW WOOD

Even in California a bit of fire occasionally adds comfort, more, it gives cheer, especially where it is California grown wood on the open hearth. Stove wood is one of the easiest crops to grow in California. The wonder tree eucalyptus gives very rapid growth and its wood gives one of the cheeriest of fires. There is scarcely a farm in the state but can devote a little space to a woodlot. Even in the form of a windbreak pruning out gives opportunity for increasing the woodpile. Grow trees.

Apropos the season, grow a Christmas tree. No tree is easier to grow and none will give more delight to the kiddies.

BROKE

We all enjoy jollying each other, and especially ourselves, with the idea that we have spent large sums foolishly in Christmas buying. We have even enjoyed the joke sprung by the wag who when asked if he expected to spend a happy Christmas, replied with: "I ought to; that's all I have left to spend." Notwithstanding some foolish spending and even some bargaining with ourselves as to presents received and presents given, it is still a wonderful festival season, and we may well pass on all the happiness we can.

Dont' worry if we are broke. We'll soon recover.

OUR RESPONSIBILITY

Word occasionally comes from some of the larger peach producing sections that the dreaded "yellows" is making deliberate but persistent advance. California has fought the entrance of this disease and the state is yet free, but growers persist in knocking on wood. Only recently a dispatch from Delaware, whose peaches were at one time regarded as the best of the country, stated they have all but disappeared, succumbed to the plague of yellows. As yet there is no cure, and the only method of handling is to prevent entrance of the pest through continuance of our efficient quarantine.

Meantime, better grown fruit, more carefully packed, and marketed with fairness to producer and consumer is the problem which confronts California.

CHRISTMAS GREETINGS

Heartiest Christmas Greetings,
Happiness, Joy and Cheer,
Love and Good Luck attend you
Throughout the Coming Year.

BUILD FOR TOMORROW

A believer in good roads has said: "Roads must be built with the requirements of ten years in the future in mind. Low cost of road building that means high cost of transportation is penny wise and pound foolish."

It has taken the road builder, in fact all of us, some time to appreciate the above truth. Or, if we did build for tomorrow our conception of tomorrow's needs was woefully restricted, and today we are talking of passing ordinances to prevent trucks of large tonnage from passing over our improved highways. Let us provide for the future so as not to unnecessarily handicap farm operations.

THE GOLD OF CALIFORNIA

The state is finishing its shipments of fresh decidduous fruits and beginning a new year with its citrus shipments, and the grand total of these shipments of our fruits comes close to 80,000 cars. Of these the citrus amount to nearly 50,000; grapes, almost 18,000; pears, 4,200; plums, 2,900; fresh peaches, 2,700; apricots, 400; cherries, 335. Now come 25,000 tons of walnuts and almost unnumbered thousands of tons of dried fruits, raisins, prunes, etc. In addition out of the earth we are pulling nearly 300,000 barrels of petroleum every 24 hours. The gold of California is not all in the foothills of the Sierra Nevada. It is surely a wonderfully blest state.

NEXT WEEK

The next issue of the Cultivator will be one which every reader will want to file away. In the first place, or rather the last place in the paper, there will be an index of Volume LIII, and there have been a number of good things in that volume which the reader will find profit in referring to in later months and later years. In the next place, or rather in the first pages of the paper, there will be from a number of Cultivator readers estimates of the past and the coming year, not prophecies, for these men are not prophets, but we have appealed to them to give us help in answer to the question which every day is presented: "What of the future, and how shall the farmer proceed to serve his own family and his country best?" We may say in advance that those who are responding for help along this line are taking a most optimistic view of the future and they are sustaining their optimism by many good reasons for their hopefulness. As a rule, the successful farmer, the successful merchant or the successful industrialist is an optimist.

APPLES OF PARADISE

A remarkable showing of highly colored Delicious apples and other varieties was made at the recent State Fruit Growers Convention at Chico. The display was made by C. M. Burkett of Paradise, Butte County. This beautiful fruit spoke for itself, but had Mr. Burkett needed corroboration of his stories of the productiveness of the Paradise section it would have been afforded by that California pioneer, a 59'er, Byron O. Clark. But the perfection of these apples from Paradise is not mentioned so much to stand out that section as superior to all others, but to draw the lesson of production of various fruits in the section fitted to their culture. In sections producing wonderful apples and pears, in planting stick to those fruits; where the almond flourishes, let it be planted; and in the protected foothills grow the orange or the olive if they have been proven successful. Take the lessons which our pioneers have taught us.

BETTER COTTON

Imperial Valley people are concerned because of the difficulty in securing best strains of cotton seed. Cotton expert Cook of the United States department of agriculture has been investigating the cotton situation in the Southwest for some years. He recently met with representative cotton growers and a committee was appointed to investigate as to conditions in Imperial and Palo Verde Valleys and in Arizona, this committee to learn especially as to seed available for this year's planting and as to methods of improving Southwest produced seed. The cotton boll weevil situation of the South adds a complication. This state is determined to introduce no cotton boll weevil in car lots of seed. It is also thought that if the Imperial Valley can produce clean and dependable seed a great trade will be opened up in supplying seed to Southern cotton growers.

WHO'S TO BLAME?

The National Grange has taken up the matter of profiteering and is calling attention to the present conditions and to the fact that if the consumer wishes cheaper food he is proceeding along the most unfortunate lines in hammering away at the producer as a profiteer. Those who read Mr. Swett's article in a recent Cultivator recall the extremely small proportion of the consumer's dollar which ever reaches the producer. Again, in the city of Los Angeles an effort is being made to reduce the price of milk and this in face of the fact that the dairyman is paying for hay and feed prices never before dreamed. The dairymen through the farm bureau came back at the agitators with the claim that in supplying water to the dairymen to grow feed the city of Los Angeles is making a charge far greater than that of any other section of the state. The Grange sent out a statement, a couple of paragraphs of which we quote:

"Under this condition the demand of people not engaged in agriculture for cheaper food is ill advised, untimely and may defeat its own purposes. The cause of high prices is not out on the farms. There is no relaxation of effort to produce by those who remain on the farms, but a steady drift of people away from the farms. This is due to the inadequacy of return on capital invested, and labor and ability used in agriculture. The Grange demands that pressure directed against food producers in the effort to reduce the cost of food be stopped before it results in such acceleration of the decline in agriculture as will leave the farms and farmers unable to feed the nation. The Grange demands that the complaint against high prices be directed to the place where high prices are caused, the cost of labor and the high profits in food manipulation and distribution and the high cost of the labor, equipment and necessities which the farmer must buy."

Electricity on the Farm

By Arthur L. Dahl

IN the old days many dwellers on our farms found that the nearby town or city beckoned them because of the superior living conditions to be found there, and many farmers did move their families into town and carried on their farming operations at long range. But industrial progress has meant more for rural than urban inhabitants, for the things that make life comfortable have been brought to the farmer and it is no longer necessary for him to go to the city for them. The telephone, the automobile, improved roads, rural delivery and a score more of modern conveniences have emancipated the farmer and his family from isolation, solitude and stagnation, and today our farming community is as much a participant in public affairs as the largest cities. Power farming is lightening the labors of the producers, shortening the periods of labor for man and beast, and insuring greater crops through prompt performance of each phase of farm routine. The tractor engine or the smaller gas engine for belt work are doing the heavy work in the feed lot, the dairy and the wash room, and the lot of the country dweller is gradually being improved.

Even electricity is lending its energy toward helping the farmer, and in spite of the universal adaptability of the tractor the electric motor is superior for use on the farm. The use by farmers of electricity for light and power has until recently been limited on account of the difficulty of securing current, but now the transmission lines of town and city power plants, as well as electric railways, have spread a network of electric feeders over a large part of the country, thus bringing electricity to the gates of many farms widely distant from the centers of electric distribution.

Electric motors, because of their greater flexibility, are more desirable for farm use than gasoline engines or any other form of power. Motors have a smaller number of moving parts and consequently are in less danger of getting out of order, and the one or two bearings require attention only about once in six months. The motor is unaffected by extremes of weather conditions and requires much less attention than a gasoline engine; no mechanical adjustment whatever is required and all problems of fuel or water supply are eliminated. For use around the farm house electric motors are ideal, for by throwing a switch the power is instantly available for operating the cream separator, washing machine, or other apparatus to be used.

Motors have also a greater overload capacity, a more constant speed, and can be easily controlled from a distance. They are also more economical in the space they occupy, as they can be attached to walls or ceilings, or if placed on the floor will occupy only one-eighth as much floor space as a gasoline engine of four times the weight and equal horse power. By using electric motors fire risks are reduced to a minimum, not only because of the absence of boilers, pipes, flues, fire or gasoline, but also because motor driven pumps insure an ever ready water supply, under pressure, for emergency use. Motors are cheaply installed, they cost less to operate, are always available for instantaneous service and are a dependable source of power.

Where there are a number of machines on the farm that are used at different times, it is possible to belt one motor to a series of machines. By this method a single motor of comparatively small horsepower is often sufficient to run alternately one or more machines whose work permits of group installation. For instance, a cream separator can be run after the milking machines have been used, and the bottle washer after the butter has been churned or the laundry mangle has been operated, as is done on many dairy farms. In other cases the dairy farmers mount their motor on a truck and it is moved from one place to another and connected to a particular machine for supplying power. By having the buildings wired at different points, with connecting sockets, it is possible to use the motor where needed.

The type and size of motor suitable for farm use will vary according to the scope and character of work to be done and the kind of electric current available. For alternating current the induction motor is excellently adapted to many kinds of service, and due to the absence of moving contacts is proof against fire risk. Due to the possibility of sparking at the brushes, direct current motors, if used in the barn or where dust or inflammable material is present, should be enclosed to prevent fire danger.

While at first glance it may seem that electric power is too expensive to use on the farm, the cost of this power is found to be reasonable when all factors involved are considered. To arrive at a correct comparison of the cost of the different operations requiring power it is necessary to weigh against the actual expense of electricity such important advantages as saving the time of hired hands, the increase in quantity and betterment in quality of the farm product, the greater convenience, comfort and safety which invariably follow the adoption of electric power. As statistics show that the average horse on the farm works on an average of but three hours a day during the entire year, at a cost of eight or nine cents an hour, and that the average cost of manual farm labor is 15 cents an hour, any power that will do the same work at less cost is justified. Where electric power is available from a central source it can be purchased at prices varying from one to 12 cents per horsepower hour, depending on local conditions, size of plant and the amount of power consumed. The electric motor will run continuously for 24 hours a day and the average life of a well-built motor is considerably longer than that of the average horse.

The average cost of a one horsepower motor is between $50 and $75, that of a horse from $150 to $250; the average operating cost of the motor will be about six cents per horsepower hour, animal labor about eight cents. Manual labor will cost about ten times as much as either horse or motor per horsepower hour.

A one horsepower motor will operate a small cream separator, milking machine, butter churn, bottle washer, water pump, washing machine, vacuum cleaner, grindstone, horse groomer, corn sheller or refrigerating plant. Other motors, ranging from three to 100 horsepower, will operate shredders, ensilage cutters, hay balers, threshing machines, etc.

Electricity is especially suited for dairy farms, and many of the large dairies throughout the country use this power almost exclusively. Vacuum pumps are driven by motors and connected with milking machines; the pumps are also used for distributing the milk, which can thus be kept free from contact with the air until bottled or run through the cream separator and churned into butter, the buttermilk or skimmed milk being fed to the calves and hogs through one continuous system of piping. One dairy reports that by the use of an electrically driven system seven cows can be milked and the milk transformed into its various products in seven minutes. The skimmed milk is fed to the calves before it has lost its natural heat.

In the modern dairy electric motors are used to operate cream separators, water pumps, churns, refrigerators, milking machines, milk cooling circulating pumps, bottle washers, cream testers, milk clarifiers, cream ripeners, milk mixers, butter tampers, milk shakers, curd grinders, casein grinders, etc.

Where an electric motor is available in the farm barn a number of jobs can be performed with it. It will operate water pumps, feed grinders, corn shellers, fanning mills, grain elevators, corn crackers, oat crushers, alfalfa mills, horse groomers, horse clippers, sheep shearers, hay cutters, grain graders, root cutters, bone grinders, hay hoists, cider presses, electric brooders or incubators, tool drills, band saw, or a score or more machines.

In the field an electric motor mounted on a truck can be used for threshing grain, and if operations are desired to be continued at night the motor will supply the necessary light. With an electric motor all fire danger is eliminated in threshing.

Electricity furnishes the safest, cleanest, most effective and convenient system of artificial lighting. It is especially adapted to farm houses, stables and barns where danger of fire is ever present, when oil, gas or acetylene are used. Where the modern farm house is wired for electricity not only can the lighting problem be solved, but the housewife will find that now she can enjoy all the conveniences of her city cousins, for the electric iron will supplement the washing machine and enable the family wash to be done with a minimum of trouble and in record time. The early breakfast can be made palatable by the electric toaster, which supplies crisp, hot pieces of toast while you wait. The dampness of a cool, rainy day can be eliminated by the electric stove that casts a cheery radiance as well as warmth around the room, and a motor driven sewing machine will enable the clothes making and mending to be done quickly and pleasantly.

While it may not be possible, or advisable, to install electricity on many of our farms, yet where the power is available there are a great many advantages to be derived therefrom if the matter is but given careful thought.

Walnut Growers Meet

THE walnut growers of the West Covina-Puente-El Monte section met at the West Covina schoolhouse on December 15 to the number of 30 and listened to an interesting and enlightening program.

The first speaker was Prof. L. J. Fletcher of the college of agriculture, Berkeley, who held the attention for an hour or more on selection of the orchard tractor. He was followed by Prof. Ralph E. Smith, also of the college of agriculture, on the application of fungicides and insecticides by the dusting method. Prof. Smith said in part:

"The application of dry powder spray is not new, for it has long been used in sulphuring for red spider, mildew, etc. Of late the devotees of this method have claimed so much for it that with many it has fallen into disrepute. But in spite of these unwarranted claims it has many advantages over liquid spray, especially in the handling, because of the lighter weight of the materials. Liquid sprays for walnuts would require 25 gallons for a large tree, with a weight of about 200 pounds, while dry spray for the same tree would weigh but 60 to 75 pounds. The dry spray also takes less time and less labor.

"Dust spray is really fumigation, for the materials are gaseous in their action and the fumes are depended upon for effective work. Dry spray mixtures are to be used for aphis on walnuts, sweet peas, melons and other crops where by reason of failure to reach the insects by liquid sprays other methods must be used. Sweet peas are too thick in foliage and vines for sprays to penetrate and aphis stay on the under sides of leaves, so that only fumes may effectively reach them.

"Walnut aphis are easy to kill and a one per cent nicotine spray will destroy them whereas a five per cent mixture is necessary on sweet pea aphis. Experiments are also being made by adding lead arsenate for the walnut cutworm. Lead arsenate is more effective in a liquid spray but

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Agricultural News Notes of the Pacific Coast

Northern California

Japanese own 6,500 acres of land in Butte County.

Susanville, Lassen County, has 16 inches of snow.

Sacramento expects to have a new $750,000 hotel soon.

In Yolo County but 320 acres are owned by Japanese.

Shasta County is already planning a 1920 fair at Fall River Mills.

Hogs are being shipped to Colusa and Glenn Counties to forage in the rice fields.

The Orland, Glenn County, fair left a surplus of $2,000 in the hands of the treasurer.

The rice crop of the Sacramento Valley is approximately 3,500,000 bags, or 175,000 tons.

A factory will be located in Sacramento for the manufacture of powdered buttermilk

Yolo County has received 1,200 Eastern black walnut trees to plant on the county highways.

The Placer County and other realty boards have pledged themselves not to handle Japanese land deals.

A heavy mortality is reported among sheep in Colusa County, feeding on rice lands after harvest.

Woodland, Yolo County, has provided 800 pounds of candy for Christmas distribution to poor children.

The Gold Ridge section in Sonoma County has shipped more than $3,000,000 worth of apples this autumn.

A carload of Thompson Seedless raisins has just been shipped from Arbuckle, Colusa County, to England.

Farmers in the territory from Stanislaus to Butte County hail a "million dollar rain" which broke a long dry spell.

A new tract of 60,000 acres has been reclaimed north of Sacramento between the Feather and Sacramento Rivers.

Plumas County stockmen have combined to keep all but pure bred registered sires from running on the county cattle ranges.

More than five feet of snow is lying about Summit near the California-Nevada line, double the amount at same date last year.

Prune trees valued at $2,000 were destroyed in ten days by gophers on the River Farms tract near Woodland, Yolo County.

Mill Valley, near San Francisco, will allow no Christmas berries to be picked, on account of the destruction of the shrubs.

Sacramento is planning a channel to salt water 30 feet deep, to make the city an ocean port, the channel to be 35 miles long.

A Japanese investigating rice land in Butte County said his countrymen were willing to invest millions of dollars in either buying or leasing lands.

When the California Prune and Apricot Growers Association asked for 200,000 more acres representation, Butte County presented 2,200 acres additional.

C. B. Cunningham, near Sacramento, began 14 years ago with 114 varieties of grapes; now he grows four—Olivette Blanche, Hunisa, Piment and Cazouls.

Central California

Turlock shipped 3,214 carloads of cantaloupes in 1919.

The orange crop of Kern County is estimated at 1,045 carloads.

A school census shows Fresno County has a population of 125,000.

Lindsay, Tulare County, shipped 100 cars of Emperor grapes this season.

Two Santa Cruz whale boats recently captured five whales in one day.

The annual Kings County poultry show will be held at Hanford, December 18-20.

There are 408 pullets in the year-long egg contest now under way at Santa Cruz.

The California Cooperative Canneries will erect a new cannery in Visalia at once.

Reedley and Wahtoke, Fresno County, will each ship 30 cars of oranges this season.

Fifteen cents was the top hog price at the last Stanislaus County farm bureau auction.

Including the first week in December, the Pajaro Valley has received 6.09 inches of rain.

Two carloads of canned peaches were shipped from Tulare direct to England last week.

Two fruit driers at Watsonville, Santa Cruz County, were destroyed by fire on December 5.

Los Banos, Merced County, has bought the city water system from the Miller & Lux estate.

A heavy supply of natural gas has been found at Angiola and all Tulare County hopes to be served with it.

The Merced County supervisors appropriated $1,500 to cover expenses of a county farm home demonstration campaign.

An irrigation district near Merced, embracing 173,000 acres, was voted on and carried by more than two-thirds majority.

The Tulare County horticultural commission protests the shipping in of 359 boxes of apples, saying Tulare can raise its own apples.

Paschel Bequette, Strathmore, Tulare County, reports that he has taken off a $900 crop of queen olives from ten trees ten years of age.

Reports from Central California show if nursery trees were available the present orchard area would be increased 50 per cent this year.

Twenty-two cars of Emperor grapes, from cold storage, were shipped from Fresno, December 4. The cars contained 12,000 drums of grapes.

Heavy rains stopped orchard hauling for the first week in December in the Watsonville district, but shipping of 35 to 50 cars daily continues.

Farmers in Kern County state that the hog auctions added from two to four cents a pound over what they would have otherwise received.

The United States attorney at San Francisco libeled 1,200 cases of dried apples from Watsonville for shipment to Stockholm, Sweden, because improperly labeled.

One of the two giant redwood sentinels at the entrance to the Calaveras big tree grove was blown down last week. It was 225 feet high and 27 feet in diameter at base.

Southern California

Walnut trees are the scarcest of all nursery stock in Southern California.

Steelhead fishing season opened December 15. Ventura reports a heavy run.

Hemet, Riverside County, is to have a factory for the cracking of apricot pits.

Ten cars of walnuts were shipped this year from Hemet, Riverside County.

The two canneries of Hemet, Riverside County, are working full capacity on olives.

Business men of Blythe, Riverside County, urge the paving of the business streets.

Up to December 5 Highland, San Bernardino County, had received 6.20 inches of rain.

Los Angeles and Ventura Counties are to have a joint park at the summit of the Santa Susana Pass.

Orange County papers report the rainfall ahead of last year's at same date and all farmers jubilant.

A Riverside County onion grower sold 90 tons of Spanish White for $100 a ton and one acre produced 14 tons. Next!

The federal experiment station at Meloland, Imperial County, is trying out many new plants suited to desert lands.

Imperial County will spend $50,000 on a highway to the San Diego County line as part of the paved road to San Diego.

An apple grower of Orange County was fined $50 last week for disposing of apples more than ten per cent wormy.

Apricot districts in the south have been notified of a heavy demand for apricot pits to be used in the dye industry.

The autumn dry spell caused the drilling of six wells of good supply in the Carpinteria Valley, Santa Barbara County.

Orange picking at Redlands began on December 2; a hundred cars of navels will be sent East for Christmas trade.

The Palo Verde Valley was cut off from the outside world for four days the last week in November—washouts on the railroad.

The Hemet high school is arranging for a fruit growers' short course in January under direction of the state university.

A Covina orange grower claims his trees were cured of scaly bark and gummosis by the application of much salt in whitewash.

C. M. Loring of Minneapolis gave $1,000 and Frank Miller $500 toward planting with trees the avenue from Riverside to March Field.

The Orange County board of forestry will present property owners with the trees necessary to plant their frontage on county roads.

Pomona Valley reports all irrigation pumps have stopped for the season as the rains have proved sufficient to thoroughly wet the soil.

The highest price ever paid in the Charter Oak section, Los Angeles County, for an orange grove was $4,000 an acre, paid last week for 17 acres.

The Coast and General

Somerton, Arizona, complains of too much rain.

Recent rains and frosts damaged Western Arizona milo crop 20 per cent.

The cotton gin at Chandler, Arizona, was destroyed by fire recently with a loss of $30,000.

The Walla Walla section of Washington harvested a 1919 crop of 8,000 tons of sugar beets.

Winlock, Lewis County, Washington, is shipping a carload of eggs per week direct to New York.

The Papago Indians recently held a fair at Sells, Arizona, the center of 6,000 Papagos who live by agriculture.

The boys' pig club of Chandler, Arizona, raised pigs at an average cost of seven cents a pound and sold for 16 cents.

The citizens of the Casa Grande district of Arizona are taking steps to prevent the settlement of Russians in that district.

A run-down ranch of 11 acres near Yakima, Washington, was cared for for three years and brought $11,000 in produce this year.

In 20 days of October the Hood River Valley sent out 1,434 cars of apples and but 834 cars during the same period of 1918.

The farmers about Chandler, Arizona, want a club house to meet in when bad weather catches them and raised $1,700 in 15 minutes.

A nine acre apple orchard near Prosser, Washington, returned $14,500 for 5,200 boxes of Jonathans, Delicious, Yellow Newtowns and Ganos.

The cannery at The Dalles, Oregon, will pack 75,000 cases of canned apples this season and 25,000 cases of apple butter, all going to Europe.

Chandler, Arizona, held a two-day cotton institute December 12-13 with experts present from the United States department of agriculture.

Apple packers in the Grand View, Washington, district made six to nine dollars a day for amateurs and $75 to $90 a week for experienced hands.

Klamath County, Oregon, distributed this season 5,700 quarts of poisoned wheat for squirrels and 30,000 pounds of poisoned bran for grasshoppers.

A bale of long staple cotton was recently sold in Chandler, Arizona, at auction and reached what is probably the highest price ever obtained for cotton in the United States—$1.1 a pound.

Of interest to long staple cotton growers is the information recently received that the long staple cotton crop of Egypt is about one-fifth less than the estimated yield while the crop of Sea Island will be less than 10,000 bales as against 150,000 bales a few years ago.

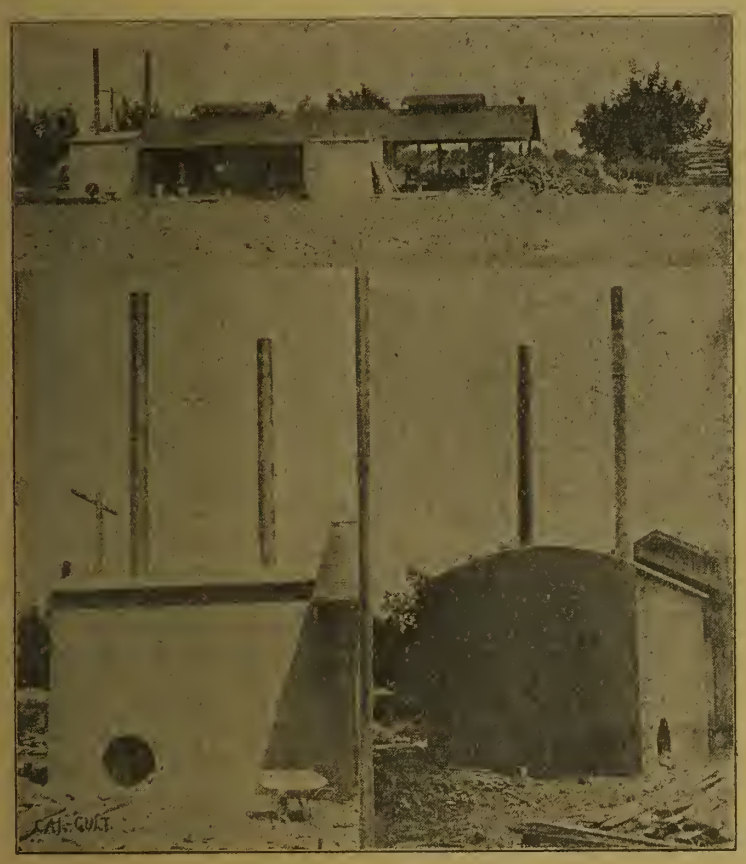
A state council of the national highway system was created in Phoenix November 17. The officers and directors of the Arizona Good Roads Association were made officers of this organization until the next general session, which will be held in Tucson January 26. The principal purpose of the organization for the present will be the consideration of the Townsend bill pending in congress.

Evaporators for Fruits

By W. V. Cruess, Before Fruit Growers Convention at Chico

CALIFORNIA has made her reputation for dried fruit very largely upon such well known slogans as "Sunmaid," "Sunsweet," etc.; that is, the fact that we cure all of our fruits in the sun and not in evaporators has been the basis of our most effective advertising of California dried fruits. Why, then, should we be interested in the artificial evaporation of these fruits?

Is an evaporator as cheap as sun drying? is the first question to be answered. We do not know; but the evidence to be derived from our investigations and from observations upon other evaporators indicates that if we neglect interest on cost of evaporator and on a dry yard of the same capacity, the drying in an evaporator is slightly more expensive than drying in the sun; the approximate difference being about equal to the cost of the fuel used in evaporation. However, if we should consider for the sake of illustration a 50 acre prune orchard and take into account interest on investment, we shall see that when all factors are considered the difference is in favor of the evaporator.



Davis Evaporator at University Farm

Upper. General view. Lower left: Furnace room showing air intake doors. Lower right: Furnace room showing old boiler shell furnace in place.

For a 50 acre orchard about five acres would be needed for a sun drying yard; for an evaporator only one acre would be needed. This difference of four acres in favor of the evaporator on average prune land would mean that by use of an evaporator the grower of this 50 acre orchard could increase his orchard four acres. Four acres of bearing prunes would at present prices and at a yield of one ton of dried fruit per acre bring a revenue of about $1,000; whereas, if the space is used for a sun drying yard the return for hay grown upon this space would not exceed about $100, leaving a difference in favor of the evaporator of $900. Trays to sun dry the prunes from this orchard would cost at present prices about $2,250. At ten per cent depreciation annually the cost for tray upkeep yearly would be $225. An evaporator for this orchard would cost about $4,000. At ten per cent depreciation annually the yearly cost of upkeep would be about $400. The fuel for the evaporator would cost about $10 per day (based upon our tests at Davis), or a total for a 30 day run of $300. Or if we assume that the labor cost is the same for drying and handling the fruit in each case we would have the following comparative estimated costs, leaving out labor costs and packing costs:

Sun drying—Interest on trays, $225; loss of revenue due to using land for dry yard, $900; total, $1,125.

Evaporator drying—Interest on evaporator, $400; fuel, $300; total, $700.

This gives the evaporator $425 advantage. The figures are very approximate and the writer does not wish to convey the impression that the conclusion drawn is accurate or final; but he does believe that artificial drying, when all things are considered, is not more expensive than sun drying.

One disastrous season, such as that of 1918, may cause the grower sufficient loss to pay for several times the evaporator capacity necessary to care for his entire crop. Therefore, as an insurance against rain damage the evaporator is well worth the investment. In some grape growing districts, for example, in Sutter, Napa and Sonoma, it will usually be impossible to dry all of the crop successfully in the sun because of the lateness of ripening and prevalence of cool and often wet fall weather. In these districts the evaporator would be a paying investment as an aid to sun drying every season.

The most beautiful dried prunes that have ever come to the writer's attention were dried by the Wann Bros. of Healdsburg. What they have done others can do. Milo Williams of Oak was paid a three-fourths cent per pound premium for his evaporated prunes as compared to prunes from the same orchard dried in the sun. Prunes dried in the evaporator are of better flavor than sun dried prunes and are free from objection by fastidious buyers upon the score of cleanliness. Drying in the evaporator is admittedly more sanitary than sun drying.

The operation of an evaporator requires much more skill and experience than sun drying and the writer believes, that should every grower in the state immediately undertake the use of evaporators much inferior dried fruit would result and the name of our dried fruits suffer irreparable injury. The tendency of beginners is to overdry the fruit, with the production of a hard, tough and caramelized dried product. Our advice is for the growers to "go slow" on the use of evaporators until they have mastered the art by working with some one who "knows how," or that they hire experienced men to assist.

Do Evaporators Increase Yield?

Mr. Christie and the writer have made over 50 experiments upon this point at Davis, but we cannot compare the yields until we have made moisture determinations. The conclusion to be drawn from the data in the present form is that there was very little difference in the yields in the two methods. Sugar is lost in sun evaporation by insect activity, by fermentation by yeast and by respiration of the fruit. In the evaporator some sugar is lost by oxidation, and as soon as we have made our moisture determinations upon our numerous experimental samples we can determine the relative losses in the two cases. We have demonstrated that just as high yields can be obtained in the evaporator. The question remaining is whether it is possible to obtain higher yields in the evaporator.

Temperature of Drying

In sun drying we need fear no injury from excessive temperatures, but in an evaporator we must constantly guard against this type of damage. Fruit which is nearly dry is susceptible to heat injury and may be badly caramelized or even completely spoiled by holding at temperatures of 160-170 degrees Fahrenheit for several hours. Fruit containing considerable amounts of moisture, however, is much more resistant and will withstand a temperature of 200 degrees Fahrenheit. Fruit will dry much more rapidly at 190 than at 150 Fahrenheit, and this high temperature may be used provided the fruit is removed from the evaporator as soon as it has become dry. Owing to the danger of scorching the fruit by exposing it to high temperatures after drying at 190 degrees Fahrenheit, it will be advisable under most conditions to use temperatures not in excess of 165 or to start the fruit at higher temperatures and finish the drying at lower temperatures. We must state, however, that our experiments with high temperatures were made only with grapes and it is very probable that larger fruits, such as prunes, would not withstand these temperatures without losing a great deal of juice by dripping.

Trays

Fruit upon ordinary field trays dries extremely slowly and therefore this type of tray should not be used. Screen bottom trays permit rapid drying but are attacked by the fruit acids and by sulphur fumes, with the result that the fruit acquires a metallic flavor and often becomes coated with poisonous zinc salts. Trays made with slat bottoms—that is, of narrow strips of wood placed about three-eighths of an inch apart—are ideal in every respect. Drying is as rapid upon them as upon screen trays; they are much more substantial; the fruit does not stick to them, and they are much cheaper. It is very troublesome and expensive to remove grapes from screen trays after drying, but they do not stick to the slat bottom trays. The latter type should by all means be chosen for use in the evaporator.

How It Works

Top: Slat bottom trays were found very convenient to empty—best type to use. Center: Emptying field trays Bottom: Car of loaded trays, Davis evaporator, three-quarters ton of grapes each car. Drier holds eight cars.

Several large ranches in Tehama County will be subdivided. Recent sales show acreages as follows: Pettyjohn ranch, 8,200 acres; Avilla, 5,100 acres; Flournoy, 4,000 acres; Hansen, 1,940 acres; Gallatin, 1,700.

DORMANT SPRAYING PAYS

Dormant spraying, it has been proved, is the most successful means of controlling many injurious diseases and insect enemies. Fruit trees at this time, devoid of foliage, are hardened for the winter and can withstand applications of strong sprays.

Universal Brand Crude Oil Emulsion

properly applied, prevents the accumulation of insect and fungus enemies. It keeps the trees in better health, vigor and fruitfulness. It cleans the trees and disinfects bark wounds.

Crude Oil Emulsion is the best of the dormant sprays — made for this purpose. Place your order with us for your supply—today.

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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

WALNUT GROWERS MEET

Continued from Page 819.

when aphis are also present it is well to experiment in the hope of catching all pests, so a spray of one-half sulphur, ten per cent lead arsenate and some nicotine will be used, and reports on its effectiveness will be made at the end of next season. For red spider 25 per cent of dry lime-sulphur is the base, though a liquid spray is best. A watch will be kept to see if any of these sprays affect walnut blight, with but a faint hope of benefit in that direction. No sure results are known from applications of some of the mixtures but one more season will determine their value. Such materials are best used on still days and in the morning when trees are damp is better still. Nicotine will give off fumes at any temperature but sulphur only in the presence of heat, therefore it is best applied on hot days."

Die-back of Walnuts

Dr. L. D. Batchelor of the citrus experiment station at Riverside then gave a short talk on die-back and winter injury of the walnut. "These injuries are traceable to one of four causes: early frosts, winter drouth, rise in water table, and the same water rise accompanied by alkali. In the first division the leaves of young trees are killed by early light frosts, about the middle of November, such as kill tomato vines. The twigs then quickly dry out and in December and January are sometimes badly sunburned, but the main cause of death of the young branches is drying out. The chief remedy is to ripen the trees early. This may be done by giving the last irrigation about the middle of August instead of continuing until October, the more common practice. This injury is to young trees only and they recover in one year.

"Winter drouth is injurious mainly to old trees and sometimes kills back three or four years' growth or even the tree itself. The harm comes from lack of soil moisture in the middle of winter, and the remedy is winter irrigation when rainfall is insufficient or too late. If treatment is good these trees may be brought back to normal in two or three years, but trees so injured will produce much sucker-like growth the next summer and this will be hard to ripen before frosts come. Winter irrigation should penetrate to six or eight feet in depth.

"The rise of the water table injures the roots through lack of air and roots submerged for some time are killed. Therefore the injury is equal to a severe root pruning. Trees recover slowly from this injury as compared with freezing, for when the latter takes place the roots are not injured. From these actions one may often judge the cause of deterioration. Cases are known where the water table was down 30 or 40 feet at time of planting but by community overirrigation walnut roots were killed in after years. The best restrictive method is to measure your water by rainfall inches through the medium of miner's inches and not wet down more than ten feet, remembering that an inch or inch and a half of rainfall will wet down a foot, dependent upon the nature of the soil. In alkali injury the same safeguard measures must be observed. These four known causes will enable anyone to diagnose his orchard injuries."

Walnut Codling Moth

Prof. H. J. Quayle of the citrus experiment station at Riverside then spoke on the present status of the codling moth situation. He said in part:

"The proper time to treat these pests is when the first brood of larvae emerges during the first half of June. In the Santa Ana district another brood comes forth about July 15, and in the Carpinteria section this is the only brood, so that but one spraying is necessary. This must be thorough, just as practiced on the apple; every nut must be covered with the poison. This season we shall experiment with both dry and liquid sprays. Dusting has not proven very satisfactory during the past year for every nut must be covered and while this has been done on the lower parts of the trees it has been less effective above. Some method, perhaps by platforms, must be found for reaching all parts.

"Other methods of control are to pick up and destroy all young nuts that fall, for it has been shown that where 40 or 50 nuts to a tree drop all of them were infested. Do not confound this drop, however, with that from the blight which we have found to be 1,700 or more to a tree. While codling moth infested nuts drop at all times, most of them are early. You must not analyze the loss by the dropped nuts, however, for after picking up all these the infestation at harvest has been found to be 20 per cent. Banding the trees helps but the bands must be removed every two weeks or they become harbors of refuge for the worms. The 1919 crop showed far less infestation than that of 1918, due to methods of control. We examined 200,000 nuts from 100 orchards and the highest infestation was 22 per cent on untreated trees and ten per cent on dusted trees. Those well cared for showed but four or five per cent."

Other Speakers

Carlyle Thorpe of the Walnut Growers Association gave data on organization matters and was asked many questions. In answer to one he stated the Franquette was the best of nuts, bringing 37 cents this year, but the production is so low that the trees are not profitable as compared with the varieties usually grown. Farm Adviser Hodgson closed the meeting with a ringing speech in support of the farm bureau movement.

CALIFORNIA PRUNE AND APRICOT GROWERS

H. G. Coykendall, general manager of the California Prune and Apricot Growers, Inc., announced here today that January 20 had been set as the final date by which 20,000 additional acres of prunes and 6,000 acres of apricots must be signed by the association or it would go out of existence.

Failure of the fruit growers to give the required support to their nonprofit cooperative organization, Coykendall said, would mean that the association would decline to exercise its option on growers' crops for the years 1920 and 1921. This, he said, would leave the marketing of these crops in the hands of the independent packers and would throw the industry back into the chaotic conditions which existed prior to the formation of the association.

Emphasizing what the association had meant to the fruit growers of the state, Coykendall said that the association had already paid out almost $15,000,000 to its grower members for their 1919 crops and he estimated that the association would put $22,000,000 into their pockets when the final settlement is made.

The California Prune and Apricot Growers, Inc., is the state-wide growers organization which was organized May 1, 1917, as a selling organization with the announcement that it represented three-fourths of the prune and apricot growers of the state.

DELICIOUS APPLE

Dr. Hedrick of New York writing in the Journal of the International Garden Club of some of the more recent fruits which are proving successful in America refers to Delicious apples which have been so successful on the Pacific Coast. He says:

"Delicious carries off the palm of merit among novelties in apples. No other new apple of the times has been more generally planted or better received by consumers and growers alike. Delicious was introduced in 1895, since which time its culture has spread throughout all the apple districts of the United States. In the orchards of the West and Northwest it has been extensively planted and has proved a great commercial success. As grown in the East, it is smaller and not as handsomely colored as when grown in the West but has even more distinctive flavor, though it is handsomely colored and quite large enough for a dessert fruit, and with its five-crowned apex is unique and attractive in appearance. Contrary to the usual behavior of apples, the fruits of this variety increase in size and color as the trees grow older. Its faults, in the East at least, are susceptibility to water-core and to apple scab. Delicious is worth trying in commercial plantings wherever apples are grown in the United States, and every land owner should plant a few trees in the home orchard. This variety was found in 1881 by Jesse Hiatt, Peru, Iowa, and the original tree is still in productive bearing. The variety was introduced by Stark Brothers, Louisiana, Missouri.

"Tree large, vigorous, hardy, productive. Fruit large, uniform, roundish-conic, ribbed, light yellow, nearly to almost entirely overspread with dark, attractive red, splashed and mottled with carmine; flesh yellowish, firm, a little coarse, tender, juicy, aromatic, pleasantly subacid, good to very good; season December to last of February."

EL DORADO PEAR ORCHARD ESTABLISHES RECORD

A phenomenal yield of pears from his six year old trees was obtained again this year by W. A. Caldwell of Camino, El Dorado County. The yield is attributed by Caldwell to the pruning system used. From 710 Bartlett pear trees a yield of 2,100 boxes is reported, while 364 boxes of Winter Nellis pears were secured from 95 trees. One tree produced nine boxes of Winter Nellis pears, while the prize Bartlett yield from one tree was a little over eight boxes. The fruit is of unusually high quality and top prices have been obtained in the local market this year, the same as in 1918.

The Caldwell orchard was planted five years ago on land which was considered not particularly good as compared with other land in the district. It had been farmed since the pioneer days and was poor. This was overcome by a system of pruning and fertilization. Conservation of water was necessary.

Instead of pruning his trees heavily each year, Caldwell tied the limbs down as soon as the framework was formed. Long canes were brought down until they were within reach. The shears were used only to properly direct the canes and to thin out crossed branches or branches which were out of place. When bent down the limbs develop an unusual number of fruit buds and throw out canes again at the angles. These are also bent down and the result is that all limbs are in easy reach of the pickers, an enormous bearing surface is formed and only a minimum of props is necessary.

SUN SCALD ON TREES

Dr. J. C. Whitten says that nearly all the good things he has found out about fruit trees came from investigations resulting from questions asked by fruit growers which he could not answer. They repeatedly asked him when to whitewash for sun scald on fruit trees. It does not show until summer and then an examination of the cells under the bark show they were dead and brown. When did this damage occur? It was supposed it came with the first hot weather, but in tracing back the origin it was found the damage was done when the trees were set out.

Thermometers fastened to the trees in winter showed that, owing to the brown coloring matter in the bark, heat was absorbed nearly as much as in the case of carbon, the greatest of all heat absorbents. On a hot day the temperature of the young tree would register 30 degrees higher than the air surrounding. When the sun went down the temperature dropped to that of the air and perhaps a frost came at night. Inasmuch as the heat had made the cells active and tender, the cold severely injured them, and thus resulted the sun scald. On a hot day in summer it was found a thermometer registered 30 degrees lower amid the cool foliage than it did when removed to shade away from plant life. Dr. Whitten advises whitewashing the entire tree when planted with a mixture of seven pounds lime, two pounds sulphur, one pound salt. Rains will not wash this coating off and the tree is always as cool as the air.

COLORADO POTATO BEETLE

California potato growers were given a scare a short time ago when a car of potatoes was received in the state and the inspector's once over resulted in the capturing of some 50 husky live Colorado potato beetles. The car was promptly ordered outside the state limits and is perhaps still going. Thus far this pest of the potato field has never secured a foothold in California, and the potato growers hope to prevent it from ever getting a start.

"I SAVE two to two and one-half hours daily on a 22-mile milk route with Goodyear Cord Pneumatic Truck Tires and find milk travels in better condition than in my solid-tired truck. Three teams would be required to do the same work done by the pneumatic-tired truck."—Frank Leibel, Farmer, Newbrighton, Minnesota

MANY farmers, like the one quoted above, know that a pneumatic-tired truck saves much time, drudgery and expense.

They know that this is a very valuable saving in these days of high labor costs and when markets must be reached more promptly than ever.

For pneumatic tires free a motor truck from the handicaps imposed by solid tires; they give it utmost traction and cushioning for all-around utility.

Rural users of Goodyear Cord Pneumatic Truck Tires load in the fields, reduce market hauls by hours and get top prices for perishables and live-stock, sometimes injured by slower, harder transport.

By helping other power-driven farm machinery to work to capacity, Goodyear-Cord-equipped trucks enable farmers to secure the full benefit of motorization.

While pioneering the development of pneumatic truck tires Goodyear has widely investigated the benefits secured by farmers employing them as above.

Consequently, further information concerning the use of pneumatic-tired trucks on farms may be obtained from The Goodyear Tire & Rubber Company, at Akron, Ohio.

SAVE TRUCKS · LOADS · ROADS
Haul on Pneumatics

GOODYEAR

Choosing Your Tree

By Ernest Braunton

WE are so accustomed to the term "training the tree" that choosing would seem to be foreign to the usual methods; and so it is in part. The writer recently paid a visit to the orchard of J. P. Englehart, Glendora, originator (by selection) of the Gold Nugget orange. In Mr. Englehart's lemon orchard he will show you four grades of trees, probably all budded from the same tree, perhaps from more. But the trees vary greatly, and herein comes the prospect of gain from keen discrimination in choosing the buds. Two young trees growing side by side, of like size, yielded last year one-half box and six boxes respectively. The one yielding the half box was the larger, yet it had been pruned 36 times, while the smaller tree bearing six boxes had been pruned but once. It is evident the poor cropper would make a much larger tree. This tree Mr. Englehart calls a beef or shorthorn tree. The smaller one is a butter or Jersey tree. That tells the tale; the more vigorous trees in an orchard, if judged by wood growth, are not the producers.

There are three kinds of trees in the vegetable kingdom, grown for three different products—for wood, for flowers, and for fruit. And they may all be found in lemon and orange trees, in whole or part. And that gives us our cue. One tree may show all three kinds of wood. It is evident then that the citrus grower must leave the fruiting wood and cut out that bearing flowers or fuel only. That principle is one of the foundation stones upon which the Englehart pruning system is built. A tree will be shown the visitor, which has never been pruned, that bears three kinds of wood—fruiting or black wood, white wood, and sucker wood. Cut open the three branches of same size, and the fruiting wood is very fine grained and solid throughout. The sucker wood contains a large pithy center; the white wood or drone wood has some central pith, about midway between the other two. One must learn to recognize the kind of wood predominant in each tree and suppress or encourage as is needed. The young tree with all fruiting wood needs no pruning and the lower per cent of fruiting wood a tree has the more pruning it will need. For the best wood must be left and the other cut out. In spite of this the tree cannot be made first class, but if taken young may be raised from fourth to second grade, no higher. From this it is evidently folly to prune all trees alike.

J. P. Englehart and His Record Tree

This little tree bore eight boxes of lemons in 1918 and has never been pruned for it has none but fruiting wood, the highest type of tree for bud supply.

A poor branch or growth on a Grade One tree would prove a fine one on a fourth grade tree. Therefore a branch cut from the best tree would be the very one to leave on the poorer tree. Again is shown the necessity of trained and educated pruners. Mr. Englehart has one young tree but six feet tall that last year bore eight boxes of lemons and has never been pruned. This is the best tree in the orchard. There is no wood to be pruned away for all of it is bearing wood. The poorer trees must be brought up to as near this standard as is possible by wood selection through intelligent pruning. That is why this article is headed "Choosing Your Tree." This best tree is good in every part and no mistake could be made in taking buds indiscriminately, for it is a royal performer. Trees built up from sucker wood, that real vigorous type, have been watched by Mr. Englehart for many years. He had three budded from such wood. They are the "beef" trees of his orchard, the largest he has, and the poorest in crop record. He says such trees are usually good performers for four to six years, after which time they deteriorate rapidly in crop production. There is a tree in the orchard top-worked with buds from one suffering badly from mottle leaf, but no better branches may be found in the orchard. This goes far to prove that mottle leaf is due to soil conditions or general treatment and is not a character that can be transmitted through the bud, or not a character of any tree, but a condition due to exterior influences.

Again, Mr. Englehart budded from a branch which bore corrugated and tuberculated fruit, what would be dubbed a "spiny" lemon. This character in its entirety was transmitted through the buds. This goes far to prove it is the fruit characters we must look to in choosing budwood. There is one large tree budded from sucker wood and beside it one of same age budded from a tree bearing a heavy crop. The large tree last year bore ten boxes of medium oranges, the smaller tree 13 boxes of high grade fruit. Mr. Englehart tries many experiments, but one other must be mentioned as being quite on another line of investigation. For three years the lemons were gathered separately from three trees, one of fruiting wood, one of white wood, and one of sucker wood. All were treated and cured alike. The fruits from the best tree showed one per cent decay, those from the white wood about ten per cent, while the lemons from the sucker wood tree were a 20 per cent loss. Surely there are valuable lessons to learn in bud and wood selection in both propagating and pruning. Choose your tree.

MORE AND BETTER SEED

Seed certification has been contemplated in California for some time. Until this season, however, it has not had the official recognition of state departments. Mr. Hecke has now appointed W. V. Shear potato seed inspector. Also, farm bureaus are taking a greater interest in potatoes and realize the necessity for greater pro

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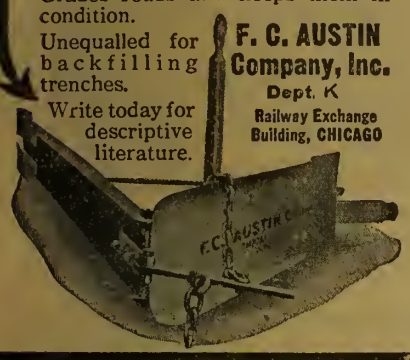

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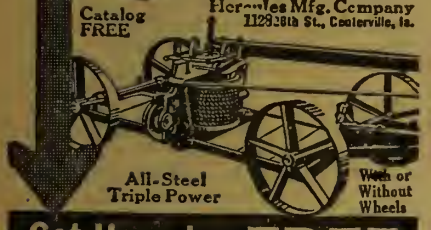

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duction in this, one of the best of potato growing states.

There was recently held in Los Angeles, under the direction of the Los Angeles County farm bureau, a conference of potato growers which was attended by seed growers of various sections of the state. At that time it was determined to organize a certified seed growers association. While the constitution and by-laws of this organization have not yet been accepted and completed, officers have been elected and are proceeding to perfect plans for a far greater production another year and for proper recognition of the few certified potatoes which have been produced this year. There has been grown during the past year approximately 400 acres, the greater portion of which will probably qualify as certified seed. Mr. Shear is making the rounds of these various fields and finds some exceptionally fine stock. The officers of the new association are: President, Geo. H. Peters; vice-president, T. H. Lambert; secretary, J. Olsen; directors, E. D. McSweeney, H. A. Hyde, S. S. Rogers and Mrs. Hilda Neilsen.

At the Los Angeles meeting addresses were made by Messrs. Shear, Gordon, Hodgson, Milbrath, G. H. Hecke and Prof. John W. Gilmore of the university who spoke at length on five factors which qualify a potato for seed. These five factors are: Freedom from disease, productive power, viability, size and uniformity. The speaker laid special emphasis on the necessity of obtaining seed free from disease, on the value of planting different varieties of potatoes, on rotation, and on the selection of sound, productive tubers for seed purposes.

California is not the pioneer in seed certification, though it is a close second, Wisconsin having been the first and today growing the greatest number of potatoes of any state in the Union. California is today shipping around 5,260 cars of 300 sacks to the car.

One handicap in the potato industry in California is the great diversity of varieties. Every section grows too many and those who have studied the question are urging closer study as to the best for each section and centering on that variety. In Southern California the greater portion of the commercial crop is made up of White Rose, approximately 80 per cent; British Queen, 20 per cent; in the delta section, Burbanks, 80 per cent; American Wonders, 20 per cent, with White Rose beginning its planting. In Sonoma County British Queen and Late Rose are favorites.

CHLORIDE OF LIME CURE

In the year 1899 I advised the Southern California Fruit Exchange to wash the fruit with a weak bluestone solution as a preventive measure against fungi. They could not afford to do it, but sometime afterward this same advice was given by a government expert, and they found that they could afford it and are now doing it with good results.

About the same time I advised the use of chloride of lime for bleaching walnuts. I note that it is now being done successfully.

Now will someone try chloride of lime as a wash about the base of trees likely to be attacked by borers (peach and other fruits), and fungi (citrus)?

By the action of carbon dioxide in the air this material will slowly give off chlorine, which is a most deadly gas to both vegetable and animal life; but I am tolerably certain the trees themselves will not be affected unfavorably. This ought to be tested on a few trees before risking many.

I want to advise further that a very small ball of this material thrown in the holes of squirrels or of gophers will either kill them or drive them away. If it will accomplish this it would probably be the cheapest way of getting rid of these pests.

Will readers who may make these tests report the results in the Cultivator?—R. R. Snowden.

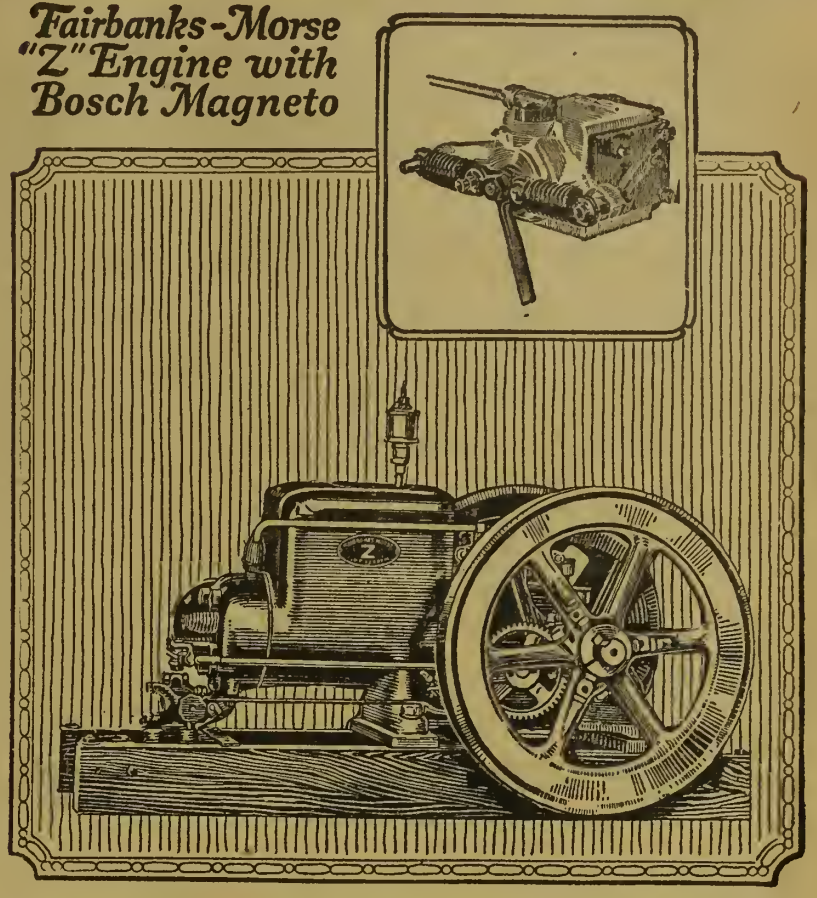
A NATURAL INQUIRY

"I should like a porterhouse steak with mushrooms," said the stranger, "and some delicately browned toast with plenty of butter."

"'Scuse, me, suh," interrupted the waiter. "Is you tryin' to give an order or is you jes' reminiscin' 'bout old times?"

The Greatest Combination

Fairbanks-Morse "Z" Engine with Bosch Magneto



WHEN the full meaning of this "Z" message is realized—mighty few farmers in America will fail to at once call on the nearest "Z" engine dealer. ¶ This example of master engine-building must be seen. ¶ Type and pictures can but suggest this value establishing achievement. ¶ By adding this one possible betterment—Bosch high tension, oscillating magneto—we complete a rare engine service, fully maintained by over 200 Bosch Service Stations in co-operation with every "Z" engine dealer—for all "Z" engine owners. ¶ Prices—1½ H. P. $75.00—3 H. P. $125.00—6 H. P. $200.00—All F.O.B. Factory.

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CORRECT LUBRICATION

Zerolene gives a better film of oil between the working parts of your car. It conserves power and saves wear. Scientifically refined from selected California crude oil. Get a Correct Lubrication Chart for your car.

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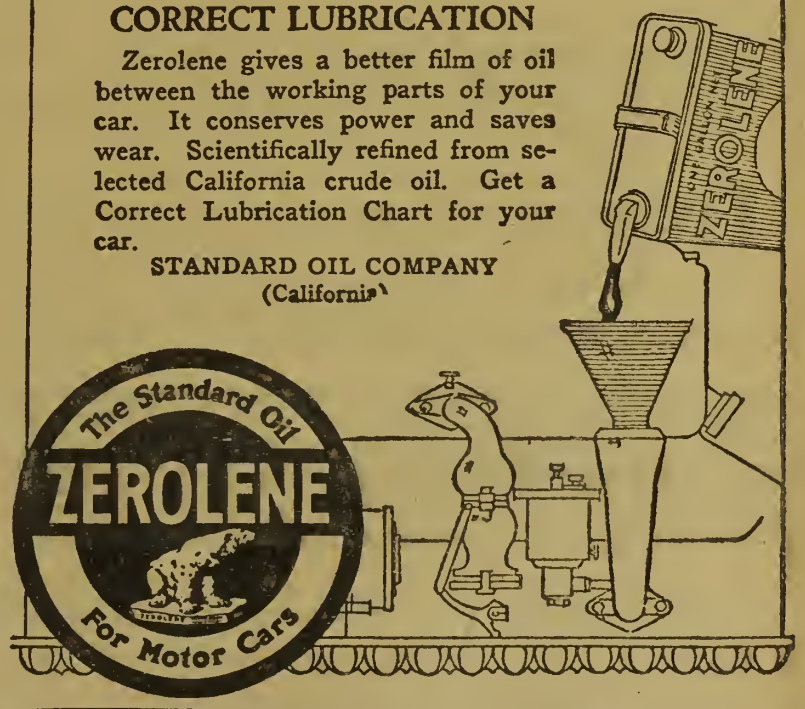

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For Motor Cars

Dairymen, Stockmen---Notice!

GROW MELILOTUS ALBA
on Alkaline or Any Poor Soil
AGGELER & MUSSER SEED CO.
620 South Spring Street LOS ANGELES, CAL.
Write for our Bulletin on Grain

TOP DRESSING TALKS, No. 3

Does It Pay to Top Dress Grain?

"Considering the state as a whole, it (the College of Agriculture) feels reasonably safe in saying that by the use of 100 pounds of Sulphate of Ammonia**** an increase can be made of 6 bushels of wheat or 10 bushels of barley per acre, provided it is applied to land adapted through climatic and soil conditions to the crop in question." **(Professor Thomas Forsyth Hunt in California Circular No. 169.)**

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Sulphate of Ammonia

Arcadian Sulphate of Ammonia is the safest and most economical carrier of nitrogen for California soils. In addition to supplying quickly available nitrogen in a non-leaching form it supplies an abundance of sulphur, a plant food element often lacking in California soils. It is **"The Great American Ammoniate."**

Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past.

Arcadian is the kiln-dried and screened grade, made fine and dry for top dressing purposes. Ammonia 25¼ per cent. guaranteed. Made in U. S. A.

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If so, you should place your orders at once. The demand is heavy and many varieties will be scarce.

We specialize in fruit-bearing trees and our Catalogue contains very complete descriptions of all the best known varieties.

Let us know what you are thinking of planting, character of the soil, water, etc. We are always glad to answer questions or to advise with planters as to what is best suited to their soils and localities.

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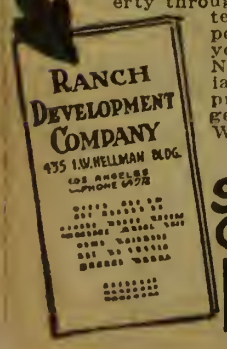
Now is the time to act, so that you can get a crop from your land next year. It is a certainty that crops will bring good prices next year, so take advantage of this condition and get your land under cultivation now.

Write today, stating location of land and number of acres.



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LOS ANGELES

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Picking Pomelos

This is to inquire as to the time of picking pomelos. Should they be taken off the tree when partly colored and allowed to cure like lemons or be left on trees till ripe? How is ripeness indicated? If cured, how and how long? Any information will be acceptable. Should navel oranges be taken from trees before the navel end is fully colored (to insure maximum sweetness)?—"Subscriber, Madera."

The time to pick pomelos is when they are ripe, which in most sections of California will not be for many weeks yet. Ripeness may be indicated, but not guaranteed by any means, by the color. The present season's pomelos are, however, offered in practically all markets of California. So far as we have seen these are unfit for human consumption. We do not know whether the eight to one test required with oranges was made to apply to grapefruit, but believe not. As to the picking of navel oranges the state requirements are: "Oranges must be free from insect and fungous pests, virtually free from frost injury or other serious defect. Sugar content (soluble solids) eight parts to one part of acid and 25 per cent yellow or orange color before picking if test is less than eight to one." There is also a certain federal standard, but this does not concern the grower unless he sweats the fruit before shipping. Maximum sweetness is not secured until the orange is fully colored, has no tinge of green color.

Manure—Green Manure

Please give value of corral manure as compared with cover crop for silage corn.—Subscriber, Baldwin Park.

It is impossible to give definite answer to the above in dollars and cents excepting for the chemist who may have in hand some of the manure or corral scrapings. These scrapings, if they have been out in the recent storms, may have lost much of their value. And again, the tonnage and other questions connected with the green manure crop are vital to determining its value, but in a general way it is to be presumed that the stable manure has a higher value, is much more quickly available than green manure, in fact, we think it is generally admitted that stable manure, all things considered, is our best soil builder. However, it is some months before the time for planting ensilage and the soil may well be used to build itself up. It is probably too late to get much tonnage from the legumes, which would have done better if planted in September or October. But barley or rye may be planted, to be plowed under a few weeks prior to seeding to silage. If seeded to winter growing crop an application of finely pulverized phosphate rock or bone meal will give bigger cover crop for turning under and at the same time be available for next summer's silage crop.

Grafting or Budding

When is the proper time to graft and bud fruit trees? — Subscriber, Lompoc.

This depends upon the kind of tree, the season, and a number of other things. The citrus tree is often budded in the fall, say in October, and so treated that the bud remains dormant until spring. Again it may be budded in March or May when the growth is strong and of course the sap flowing freely. Budding of peaches or other deciduous trees is usually done in the spring and the grafting of most trees when they are dormant, or just before the growing period of the spring time.

Lumps in Udder

Touching upon "Lumps in the Udder," a question which was answered in the veterinarian's department issued November 22, age 688, N. H. Locke of Lockeford writes:

"The probability is he is improperly milking his cow, causing milker's boils. Use Watkins salve until healed. Do not pinch the udder in milking."

Sugar Cured Meat

I am enclosing an old time formula which I have found good.

Meat 100 pounds, salt ten pounds, sugar four pounds, saltpeter two ounces. Boil and skim and cool. Cut meat between each joint. Dip each piece in boiling brine, cool over night. Put one-half inch of brine in bottom of barrel or jar. Cover each layer in brine in packing and finish with one inch or more on top. Weight well and cover to keep flies out.—J. C. Joplin, Santa Ana.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Injury to Stifle Joint

I have a five year old gray gelding that was kicked on the stifle joint about a year ago. It has been treated by the former owner but is still lame and he can not use the lame leg to back nor step over a wagon pole although he is able to do his share of farm work on a small ranch. There is a bunch on the stifle joint as large as a teacup. What treatment would you advise and will exercise in a barn lot be better for the horse than being tied in a stall? — Subscriber, Butte County.

The exercise will probably be best. After so long standing the case will need pretty strong treatment and that kept up for some time. Blister it. Make a blistering ointment as follows: Use one ounce of cantharides, one ounce of biniodide of mercury and six ounces of lard. Mix it all together thoroughly. Rub about an ounce of the mixture on the bunch and rub it in well, then hold a hot iron about three inches from the bunch to warm it in and then rub it some more. Grease the parts below the bunch with lard so if some of the blister runs down it will not blister there. Tie the horse so he can not reach the blister with his nose for 24 hours, then grease it with lard and keep it soft until the scabs all brush off. In about two weeks repeat the blister as before. Keep this up until six blisters have been applied unless the lameness disappears before.

Diarrhoea

Bull 18 months old has scours. He refuses after ten days to eat. Previous to the attack he had oat hay, the run of pasture and plenty of good spring water. Now he appears to have lost his cud and has run down. The only feed he will take with relish is carrots but I am careful to only feed a few each day. What would you advise doing for him? — Subscriber, Cloverdale.

The bull may have eaten some frozen grass or a weed that did not

agree with him. To soothe the stomach and create a desire for food that will make a cud give him the following: One-half ounce aloin, one ounce powdered nux vomica, six ounces turpentine and two quarts raw linseed oil. Mix and shake well. Divide into eight doses and give one dose morning and evening. Feed some carrots if he continues to like them and give a small amount of alfalfa hay or corn fodder. Try to get hay or fodder that was not too ripe when cut but is a little tough. That will form a better cud. Keep all grain or ground feed away from him until he commences to chew his cud again. After giving the above medicine if the diarrhoea still continues get these powders: Two drams tannic acid, four ounces ground gentian, one ounce powdered digitalis and three ounces bicarbonate of soda. Mix all and make into 20 powders. Give one powder morning and evening by putting one in a bottle, adding a cup of water and giving it as a drench. After giving a few powders the rest may be given one at a time in a little ground feed twice a day as before.

Cow With Six Teats

We have a promising Holstein heifer about to freshen which has six average size teats. Would it be advisable to milk all six?—Subscriber, Arizona.

There being six teats shows that there are six separate lacteal glands. If two of these were very small, by not milking them they might dry up and cause no trouble, but as you say in this case they are all of average size, it would be dangerous to dry up two of them, as the irritation might cause trouble. However, you might try it, and if that part of the udder shrinks up and does not become hard nor inflamed, well and good, but if it shows any tendency to become sore you had better milk out all six.

Cow Pox

Am having some trouble with my cow. She has sores on both sides of the udder running down about half way to the teats and extending all the way up to the thigh and down on the thigh five or six inches. The skin is cracked badly and discharges a sort of bloody fluid and of course it is painful for her to be milked. Otherwise she seems to be in good health, eats well and seems to feel well. Am giving her salts and rubbing the affected parts with carbolated vaseline. What would you advise doing for it?—Subscriber, Oakdale.

Probably it is cow pox in a very bad form. The carbolized vaseline is not good for that kind of a sore. It holds the fluid that exudes from the skin and causes the trouble to spread. Wash it all off with soap and warm water, then wet the parts twice a day with a solution of permanganate of potash, using a dram of the permanganate to the pint of water. If this dries the skin so it cracks, then grease it with a little butter and apply the permanganate solution again. Continue the salts internally.

Melanotic Tumors

I have a very good gray mare about 14 years old that has warts, or whatever it is called, under her tail. Five years ago they were about the size of a walnut, but since then they have grown and become one mass. It does not interfere with her usefulness and I have been told that nothing can be done for it. What is your opinion?—Subscriber, S. M. H. E.

Somewhere in the animal economy a black pigment or coloring matter is formed that gives the color to the hair. As the animal grows older and the hair from year to year becomes nearer white, the call for the coloring matter becomes less. The secretion continues as before and instead of being eliminated from the system in some other way, forms into what are called melanotic tumors. They do no special harm and nothing can be done for them worth while. If one gathers where it becomes unsightly or is irritated by the harness, it may be cut out and healed up, but it will gather then in some other place which may be less objectionable.

BUOYANT CONCRETE

The concrete ship Faith, built in this country, successfully completed its maiden trip across the Atlantic and aroused much interest in England. It is 336 feet long, 46 feet wide, its greatest depth 25 feet and its average draft 22 feet. It has four bulkheads of reinforced concrete like the shell of the ship. The Faith is very steady in rough weather, encountering an 80-mile gale and "listing but 12 degrees." While in the Surrey docks the vessel was visited by members of the British Concrete Institute who were very enthusiastic over the future of concrete ships.

The Yuma County, Arizona, cotton growers will raise their own seed on a selected ranch of 170 acres.

UNITED STATES RE-EXPORTS

The total exports of foreign merchandise from the United States during 1919 will have a total value of about $180,000,000, perhaps much more. This is four times the value of the re-exports of 1914 and exceeds for the past eight months the total of 1918 by $20,000,000. An unusual item in the list is art works, other than the production of American artists, to the value of $20,336,444. This covers a $20,000,000 shipment to France of art works brought into the country in 1912 for exhibition at the Panama Exposition and other places and afterward placed in museums of this country and Canada for safe keeping during the war.

WHAT IS MANJAK?

We didn't know we had it or whether it was a disease or an animal, but a government report states it is found in the wilds of Utah. Manjak is much like asphalt in chemical composition and is almost pure bitumen. It looks like coal, is odorless, hard and brittle and is found in long seams between layers of clay. The most important use of manjak is as a money saver in connection with rotary drilling for oil. A soft compound is used on the joints of the pipes between the casing threads and drill stem threads, preventing either water, sand or grit getting into the threads and so prevents wear. For this purpose it has no superior.

ORDERING FEED THROUGH FARM BUREAU

The Glenn County farm bureau is maintaining a market department which is doing some most effective work for its members, one feature being the placing of an order for feeds in carloads, secured at rock bottom prices. Members have a rate of $73 per ton on ground green bone, $116 on meat scrap, $41 on rice bran, $57 on rich polish and $55 on coconut meal.

AMERICAN GOODS NEEDED

A United States trade commission in Colombia, South America, states that notwithstanding the large orders for general merchandise placed in the United States by the leading wholesale importing houses of Cali, Colombia, there is a brisk demand at present for waterproof garments for street and riding wear; ready made clothing of Palm Beach cloth and other light weight materials and a half dozen other lines of which the state is at present very short.

BEAN Sprayers

are leaders in many money saving ways. Dependable, reliable, efficient, furnishing high pressure at small cost.

Valves will not rust out and they can be cleaned in less than two minutes by one not experienced while the engine is running. This is a Bean feature worth investigating.

Write for our sprayer catalog. It explains 10 points of Bean Supremacy.

Bean Spray Pump Co.

158 W. Julian St. San Jose, Cal.
Branches: Los Angeles, Fresno

CLIP OUT AND MAIL
Bean Spray Pump Co.,
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Gentlemen: Please send me your sprayer catalog.
I have .....acres of.....
Name .....
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Ruminations of an Amateur Gardener

By A. F. Clarke

SHOW me the really enthusiastic amateur gardener who doesn't like to experiment with new things. Who doesn't like to get seeds of some alluringly named new vegetable or fruit or berry and plant it out with great and exacting care and nurse it along till the time comes when one can determine if it's to be fish, flesh or fowl or merely a common weed with high sounding cognomen? Of course we do, and failures never daunt nor prevent a repetition of the experimentation.

Well, I tried some new ones the past season, and I haven't any rose hued reports to make on them—but like enough I'll be dabbling in the new things so alluringly pictured in the catalogues the coming season.

Did you ever raise vegetable almonds or vegetable oranges or sunberries or climbing cucumbers?

An Eastern seed catalogue set these all forth so enticingly that I bit on 'em all. Results:

Vegetable almonds is another name for chufa, and chufa is the book name for the grass nuts that are found occasionally down south. I think I got a full hundred from one seed nut. The nuts attach to the roots of a bright green bunch grass and are about the size of peanuts and have the flavor of coconuts. But they have to be peeled and it takes too many of what's left to make a mouthful. Still, they're a rather interesting novelty and very prolific. But I shall not try them again.

The vegetable oranges were planted with great care, but a single vine came up and this had a single "fruit," this quite resembling a St. Michael orange. The flavor was quite a piquant sub-acid. They don't compare with the Tiptop melon, but one sample at least gratified my curiosity.

Sunberries I found to be nothing more or less than deadly nightshade; at least nobody but a botanist could tell the difference. Berries few and of a disagreeable flavor. And to think that Burbank fathers them!

The trellis supplies the only distinction between climbing cucumbers and the common garden varieties.

I must admit, too, that the roselle has been a bit of a disappointment. I got mine in early but got only one picking before the frost came, and believe the same space to any of the standard berries would have paid better.

Garden Notes

One wants to know what he's getting when he buys stable manure. The load I bought in the spring introduced a greater variety of weeds into my back yard than are found in the unabridged botany. I'll stick to nitrate of soda next time.

Celery land is extending. Saw something like 50 acres in a solid planting between Tustin and Irvine the other day, on the great Irvine ranch, and just below Irvine towards Laguna Beach noticed 20 or 30 acres of lettuce in one piece.

Now that the leaves are pretty well off the back yard fruit trees it's a fine time to start a compost heap. The pile will accumulate in the run of the winter a lot of fertilizer that will add needed humus to your garden. Put all dead vines and other rubbish on the pile.

Now's a good time to fertilize rhubarb. It's a heavy feeder and well repays heavy fertilizing. If barnyard or chicken manure isn't available any good standard commercial fertilizer will do.

Asparagus tops should be cut and burned or piled on the compost heap now.

Now's the time to plant out onion sets, lettuce, radishes, turnips and other hardy vegetables unless your locality is too cold.

'Ware the weevil! Place your beans in an airtight container and place on top of them in an open vessel carbon bisulphide at the rate of one ounce to 100 pounds. Keep sealed for 24 hours and the last invader will be dead.

Sweet potatoes will keep better if sweated before storing.

If the garden soil is well broken up and turned over now it will catch and hold the winter rains better and insect pests will be reduced in number.

Blackberries can be propagated now by root cuttings. Select roots about the size of a lead pencil and cut them into pieces two inches long. These should be packed in boxes of sand and kept well drained during the winter. They must be planted at least two inches deep in the spring.

I had rather good luck this season in planting rhubarb seed, but planting roots of the rhubarb is the quicker method, and these may be planted any time now. New Crimson Winter or Wagner's Giant Seedling are the popular varieties for this region. Plant in rows five feet apart and three feet between plants.

Champion

Dependable Priming Plugs

Fires Cold Engine

Champion Dependable Priming Plugs are better than priming cups. The gas trickles down the core of the plug and directly over the points where and when the spark jumps. The explosion is instantaneous and sure.

For the hundreds of thousands of automobiles which have no priming cups Champion Dependable Priming Plugs are imperative.

For sale by all auto parts dealers.

Price $1.50 Each

Champion Spark Plug Company, Toledo, Ohio

HOUSTON'S REPORT

IN Secretary Houston's annual report of the department of agriculture great credit is given to the farmers of America for saving Europe. This was done twice; that is, in the estimation of the secretary not only was the great production of the farmers of America necessary to save Europe during the war, but after the armistice was signed there was a period in which Europe would have suffered untold loss of life if large contributions had not been made by American producers. The secretary says:

"The cessation of hostilities brought no immediate improvement in Europe. On the contrary, in some respects more adverse conditions developed. Revolution became the order of the day; the directing hand of government was removed; discipline was relaxed; the morale, particularly of the people of the Central Powers, was broken; idleness and unemployment prevailed; and in some sections anarchy reigned. It was obvious that Europe could not produce sufficient foods for herself. Her crops had been short for several years, and it was scarcely probable that those for 1919 would be greater than the crops of the last year of the war. Quite as unsatisfactory was the livestock situation. In nine of the Western nations the number of cattle had declined more than 7,000,000, sheep 7,500,000, swine 24,500,000, and dairy cows several millions, with a greater proportionate reduction in the volume of products.

The secretary deals with the upward tendency in agriculture, forestry policies, increased productivity, placing a limit on absentee landlordism, more accurate and complete statistics, and especially further aid for marketing. Touching upon the extension of good roads in America, the secretary urges that such work be facilitated in every possible way and beginning in 1922 $100,000,000 each year shall be devoted to federal road building for four years.

In the matter of bettering rural conditions he recommends:

"The building up, primarily under state law, of a system of personal credit unions, especially for the benefit of farmers whose financial status and scale of operations make it difficult for them to secure accommodations through the ordinary channels.

"Expansion of existing facilities and activities for aiding farmers in marketing, including especially the extension of the market news and food products inspection services, and the assignment of trained market specialists to each state, in cooperation with the state authorities, to stimulate cooperative enterprises and to make helpful suggestions as to plans and methods.

"Continuation of the present policy of federal participation in road building, through the appropriation, if the financial condition of the nation permits, $100,000,000 for at least each of the four years beginning with the fiscal year 1922, to be expended under the terms of existing legislation

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DUPLEX-PLUNGER
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Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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POMONA, CAL.

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Make Big MONEY
Prices Higher Than Ever

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TRAPS at Factory Prices

Stephens sells traps, bait, smokers, knives and other trappers' supplies at rock bottom prices. Write today for Big, New, Illustrated Trappers' Guide containing Game Laws; Trappers' Supply Catalog, Fur Price List, Shipping Tags—ALL FREE.

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In the face of rising costs, I have reduced engine prices. By increasing production, making my factory the largest, selling direct to user, I build engines for less and give you the benefit

90 Days Trial 10-YEAR GUARANTEE

You have 90 days to try the OTTAWA and you are protected by my liberal ten year guarantee. Sizes 1½ to 22 H-P. Cash or Easy Terms—make engine pay for itself while you use it.

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Best Varieties, Best Plants
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Write V. R. ALLEN, Seaford, Sussex Co. Del.

"The regulation and control of stockyards and packing houses.

"Federal legislation further to protect consumers against misbranded, adulterated and worthless feeds entering into interstate commerce.

"Similar legislation dealing with fertilizers.

"Increased support by states for rural schools and more definite direction of their instruction along lines related to rural problems and conditions.

"The requisite legislation for the improvement of the sanitary conditions in rural districts and for the building up of the needed hospital and medical facilities."

IMPORTANT TO KNOW

The enumeration of the population of the United States in the federal census is some job, but it is perhaps amongst the least of the troubles of the census takers. It is probable that more time will be lost because of lack of definite knowledge on the part of the greater number of us as to our transactions during the past years. Especially will this be true as to farm production. Here are a few of the things which are to be asked when the enumerator comes around:

Each occupant of a farm will be asked how many years, if any, he worked on a farm for wages; how many years, if any, he was a tenant; and how many years, if any, he farmed as an owner.

Whether he (a) owns, or (h) rents, or (c) partly owns and partly rents his farm, or whether (d) he operates the farm for others as a manager or superintendent.

How many acres in his farm? Number of improved acres? Number of unimproved acres and number of acres of woodland?

Total value of farm? Total value of buildings? Value of implements and machinery on farm?

Whether farm is mortgaged? If so, the amount of mortgage?

Expenses for feed, fertilizer, and labor in the year 1919?

Several questions concerning artificial drainage of his farm.

Number of cows, horses, sheep, chickens, and other domestic animals on the farm January 1, 1920?

Quantity and acreage of all crops grown on the farm in 1919, including fruits and vegetables?

Quantity of milk and hutter sold off the farm during the year 1919?

Acreage of timber land on farm and value of forest products.

Correct answers to the above questions are of the utmost importance. The United States department of agriculture assisted the census bureau in preparing the questions on the agriculture schedule and appeals to farmers everywhere to keep farm records for census purposes.

SQUIRREL CAMPAIGN

Commissioner Ryan of Los Angeles County is compiling field reports on the ground squirrel question to determine in what districts to start a drive with carbon bisulphide. Probably seven or eight men will be detailed for this work, for present conditions are excellent. No hillsides or rocky soils will be worked for the reason that a low per cent of deaths only can be secured in loose soil or hillsides where the burrows may lead from the entrance upward. Even with the explosion methods now used, squirrels in such lands usually escape. They will be taken care of in the spring through the use of poisoned grain.

CROP REPORT REVISION

The Los Angeles County horticultural commissioner is revising crop reports for his county for the past three years, getting special information from field deputies and others known by him to be reliable. The final work comes under Mr. Ryan personally, and he feels that when the figures are all in he will be able to give us a report that may be relied upon as the most accurate yet issued.

LOS ANGELES FARM BUREAU MEETINGS

A better farming conference at Normal Hill Center, Los Angeles, December 20; Covina, 20; Burbank (deciduous spraying demonstration), 22; Monrovia, 23; Pomona, 26; Inglewood, 26.

What has the Design to do with "Pull"?

At first thought, it may seem a simple matter to design a track like that of the "Caterpillar" Tractor, in such a way as to eliminate all the power-waste possible and reduce upkeep to the minimum. Actually, it has taken a quarter century to perfect the "Caterpillar" Track.

And so, throughout the "Caterpillar" Tractor, correct design is largely responsible for its almost unbelievable power and durability.

The secret of "Caterpillar" Tractor "pull" is, that correct design enables the power of the motor to reach the drawbar with minimum loss and friction. That's why the "Caterpillar" Tractor has always out-pulled other tractors of equal rated horse-power, and why "Caterpillar" maintenance expense is lowest.

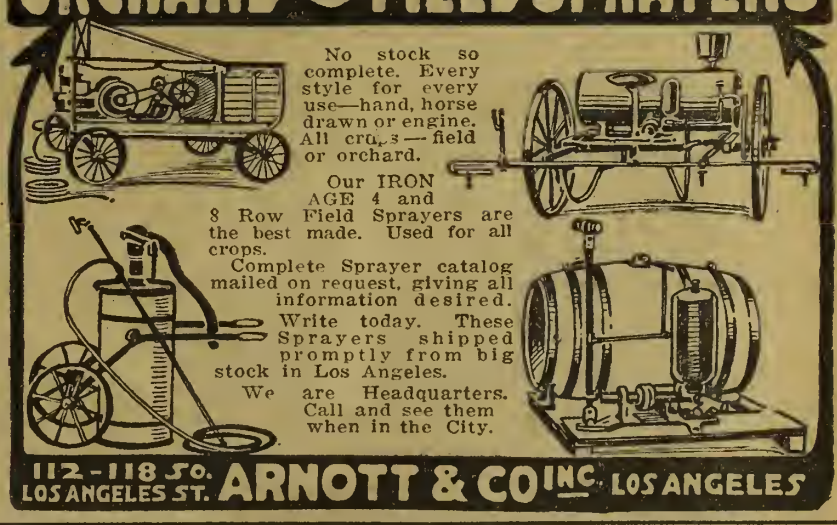
Superior construction is not always evident to the eye. Results reveal more than appearance, and no other machine can duplicate Holt results.

Folder No. 413 explains other "Caterpillar" Tractor points of superiority. If you are interested in tractors you should send for it.

The Holt Manufacturing Company
Stockton, Cal., Peoria, Ill., Los Angeles, Cal., Portland, Ore., Spokane, Wash., San Francisco, Cal.

CATERPILLAR
Reg. U.S. Pat. Off.

ORCHARD AND FIELD SPRAYERS



No stock so complete. Every style for every use—hand, horse drawn or engine. All crops — field or orchard.

Our IRON AGE 4 and 8 Row Field Sprayers are the best made. Used for all crops.

Complete Sprayer catalog mailed on request, giving all information desired.

Write today. These Sprayers shipped promptly from big stock in Los Angeles.

We are Headquarters. Call and see them when in the City.

112-118 So. LOS ANGELES ST. ARNOTT & CO INC. LOS ANGELES

Hauser's Organic Fertilizers
Built for
California Conditions
Send for Booklet, "Fertilizer Efficiency," Tells You Why.
Hauser Packing Company
Los Angeles, Cal.

"FOR THE LAND'S SAKE" Use
A. C. W. FERTILIZERS
By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.
Agricultural Chemical Works
518 I. N. Van Nuys Building Los Angeles, Cal.
Telephones: Pico 3619; Home 66022

PURE HAWAIIAN CANE
MOLASSES

By actual test it will increase pork production half a pound daily over a barley and tankage feed yet it sells for less than half the price.

By actual test it will increase milk production 15 per cent.

Seventy-five per cent of the Blue Ribbon Winners at the Livestock Show were owned by people who are feeding molasses.

If you want increased production at lower costs feed molasses.

Write us at once for prices and interesting booklet telling how to reduce feeding costs.

W. H. Young Company
58 Sutter Street San Francisco

California Wonder

Kings County Jack Ranch
Breeders and dealers in American Jacks and Jennets
Jacks and Jennets for sale at all times. Come and see them.
JOHN BURRELL
R.F.D.B. Box 74
Hanford, Kings County, Cal.

VALLEY VIEW FARMS
breed the highest type Duroc-Jersey swine. Can offer now bred fall and spring gilts bred to Uneeda Sensational Defender, junior champion Glenn County fair. Will sell our junior yearling boar Sammy King's Col. and boar pigs from daughter High Orion and sired by son of King of Orions. Prices reasonable. Write for particulars.
W. T. Hollingshead & Sons Orland, Cal.

Special Notice to Duroc-Jersey Breeders
I leave for the East in January. Several breeders have given me orders to buy bred sows and gilts for them. I will be pleased to purchase for you anything you want. Will personally select them. Write me what you want and the blood lines. I'll tell you just what I pay for them.
Clayton Slocum Willows, Cal.
N.B.—Write me at once

Words that Spell P-R-O-F-I-T
Good Duroc-Jersey swine. I have sows and gilts bred to King Orion Jr., grand champion at San Francisco, also to a son of Great Sensation and a son of Pathfinder—bred to farrow in March and April. These are the kind that return a profit and are priced that you may make a profit. Write for further particulars.
F. M. JOHNSON NAPA, CAL.

Duroc-Jerseys from the Butte County Herd
assure the purchaser of a profitable investment for they are bred to produce large litters and mature early. These are the qualities you want. Write for particulars.
W. V. BENNETT Nord, Cal.

Is a Calf Worth 23 Cents?
For 23 cents you can insure your calves against death from Blackleg by having them vaccinated with PURITY BLACKLEG AGGRESSIN. (The Kansas Germ Free Blackleg Vaccine.) One treatment immunizes for life and there is no danger in introducing Blackleg into healthy herds of cattle. We also manufacture and sell PURITY ANTI-HOG CHOLERA SERUM, PURITY MIXED VACCINE for swine, and PURITY HEMORRAGHIC SEPTICEMIA VACCINES for cattle and sheep. Stop your losses and increase your profits—it's good business. For service that counts, and does not end by selling, write, wire or phone
PURITY SERUM CO., J. L. Thatcher, Manager (Successor to Thatcher Serum Co.)
Riverside, Cal. Sacramento, Cal.

GEORGE W. BELL
A BUSINESS AUCTIONEER
When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.
GEORGE W. BELL Tulare, California

Just Out From the East
THE WESTERNER, by Big Bob, dam by Smooth Big Bone, 2nd dam by Big Bob.
CALIBUSTER, by Big Ed, by Buster's Giant, by Giant Buster—dam by Smooth Bob, brother of Caldwell's Big Bob.
We will offer later a few choice sows and gilts by King Jones Over and Kansas King, bred to these young boars. Spring boars and weanlings for sale now.
McCarty and Starkweather R.C. Box 384, Modesto, Cal.

When Writing Advertisers, Mention the Cultivator.

Buying Breeding Stock by Mail

GENERALLY speaking it is more satisfactory to purchase breeding stock by making a personal visit to the herd or flock or attending a sale in person. However, there are times when it becomes necessary to make purchases by correspondence. As a matter of fact much of the average breeder's business comes by way of the "mail order" route, and the fact that one hears so few complaints is both a tribute to the integrity of the average breeder and a testimonial from buyers that the plan is satisfactory.

Notwithstanding the general success of the plan, there is still room for improvement and it is certain that if prospective buyers would put into practice a few of the following suggestions they would be better satisfied.

First of all, the buyer, if he is a new man in the business, should familiarize himself with the breed he has decided to handle. He should have a fair knowledge of the more highly esteemed blood lines, the most accepted type, and the general values being established for the breed.

For the most part, it will be found that any breeder who is advertising in a high class farm or livestock journal can be regarded as reliable for the reason that papers of character make it their business to ascertain the reliability of their advertisers before the business is accepted. The above statement does not mean, however, that all advertisers have equally meritorious stock. When one decides as to about what quality he intends to buy, he should communicate with a number of advertisers in order to locate those handling the quality he is in the market for.

In outlining one's wants frankness and reasonableness should be used. The writer has seen many letters written to breeders setting forth a description of the kind of stuff wanted and many times only a perfect animal could fill the bill—and perfection is not only rare but always of high value. If one doesn't know what he wants, he had better admit his lack of knowledge frankly and tell the breeder to send the best he can for the amount to be spent.

It is always advisable to obtain a photograph of the animal in question together with information as to its **weight, age** and general measurements, and a copy of the pedigree.

Such details as whether or not, if pigs, they have been immunized, if cattle, tested for tuberculosis, or if contagious abortion has been in the herd, in short the health of the animal, should be made sure of. The purchaser should also inquire as to how the animal has been fed—the kinds of feeds and the amount. If buying a bred animal, the service date should be known beforehand and in all cases the purchaser should have a clear understanding as to what the seller guarantees.

Upon receipt of the purchase, do not be too hasty to pass judgment. Remember that an animal always looks its worst after shipping. If disappointed, it may be that you expected too much for your money and that you really got value received. If satisfied with your purchase, tell the seller so. He is human and likes to know that his efforts to please his customers are appreciated.—R. P. R.

The Short Sale of Shorthorns

R.C. SHORT of Reno, Nevada, one of the pioneer Shorthorn breeders of the West, sold 43 young bulls and females at the state fair grounds at Sacramento on December 11 for $7,555, averaging $175.50, a price that was entirely satisfactory to the owner as his cattle were right off of grass, not having been fitted for the sale ring. The few pasture bred heifers sold to advantage, but most of the lot were hardly of breeding age. The few young bulls sold for $190 each.

Frank McEnerney of Galt and S. C. Dorn of Oroville were the heaviest buyers, taking 12 and ten head respectively. Paul R. Sims of Elk Grove took home five likely looking heifers.

The offering, which was Short's first attempt at a public sale, was presented in range condition which made them sell better to the buyer's advantage than to the seller's. Had the stuff been up in the feed lot for a few months before sale date, Short would have realized from $50 to $100 a head more. His cattle were of good frame and substance, well covered, even though thin, and a pleasing lot of good utility stock. Another offering from the same herd in another year with the animals fitted for the sale would prove more encouraging to the breeder.

Ord L. Leachman, the Sacramento livestock auctioneer who handled the sale, was supported by ring talks from B. O. Cowan of Berkeley, for many years assistant secretary of the American Shorthorn Breeders Association; Prof. Gordon H. True of the animal husbandry division of the University of California; Senator Ben F. Rush, veteran Shorthorn breeder of Suisun; and W. M. Carruthers, Shorthorn breeder of Live Oak. Frank Brown of Carlton, Oregon, president of the Pacific International Livestock Show, was among the prominent breeders present.

The summary of the sale follows:

Purchased by Frank McEnerney, Galt: Miranda, 793854, calved May 25, 1918, $190; Dollie, 745089, calved February 10, 1918, $160; Nellie Blye, 745092, calved March, 1918, $200; Sweetheart II, calved December 3, 1918, $270; Zelda, calved November 12, 1918, $150; Birdie, 687641, calved April 23, 1917, $145; Janet 2nd, calved December 28, 1918, $160; Nathalie, 745091, calved March 14, 1918, $190; Foundation, 793850, calved May 26, 1918, $190; Linda Belle, 793851, calved June 2, 1918, $160; Pleasant Girl, 684072, calved June 13, 1917, $150; Cherry Blossom II, calved November 17, 1918, $155.

Purchased by S. C. Dorn, Oroville: Peace, 684071, calved June 19, 1917, $125; Collynie General 3rd, 745074 (bull), calved March 20, 1918, $220; Springdale Abbott, 75855 (bull), calved February 14, 1918, $210; Maud Adams II, calved November 10, 1918, $140; Virginia 2nd, 793856, calved May 30, 1918, $155; Fawn, 684065, calved June 21, 1917, $110; Prince, 793847 (bull), calved May 23, 1918, $170; Primrose, 793855, calved May 22, 1918, $135; Alexandria 2nd, 793848, calved May 24, 1918, $110; Meadow Queen 7th, calved November 25, 1918, $135.

Purchased by P. R. Sims, Elk Grove: Amelia, 757851, calved March 27, 1918, $225; Genevieve, 687642, calved April 27, 1917, $205; Mabel, 793853, calved May 23, 1918, $200; Alpine, 684061, calved June 15, 1917, $255; Violetti, calved November 15, 1918, $200.

Purchased by H. L. and E. H. Murpby, Perkins: Mayflower Jewell, 587033, calved June 15, 1916, $260; Annabel, calved December 20, 1918, $150; Duchess, 793849, calved May 24, 1918, $135.

Purchased by George A. Murphy, Perkins: Edith, 745090, calved February 5, 1918, $250; Annie Lea 5th, 684062, calved January 18, 1917, $260; Laura II, calved November 13, 1918, $170.

Purchased by A. Eddlemon, Acampo: Georgia, 684066, calved June 19, 1917, $160; Lottie 5th, calved January 25, 1918, $125; Collynie General 4th, 793843 (bull), calved June 1, 1918, $275.

Purchased by Thomas Harrison, Santa Rosa: Lady Emily, calved November 19, 1918, $185; Lily Beaumont 5th, 684068, calved June 28, 1917, $125.

Purchased by Davis Horse and Cattle Co., Davis: Grizzley, 793844 (bull), calved May 21, 1918, $135; Major John, 745080 (bull), calved February 12, 1918, $160.

Purchased by R. Lauppe, Antelope: Hopeful, 685057 (bull), calved June 25, 1917, $160.

Purchased by G. A. Maxwell, Dixon: Wildflower, calved December 27, 1918, $110.

Purchased by W. C. Hamel, Davis: Sagebrush Boy, 745084 (bull), calved February 9, 1918, $190.

FIRST PUBLIC SALE
January 28, 1920

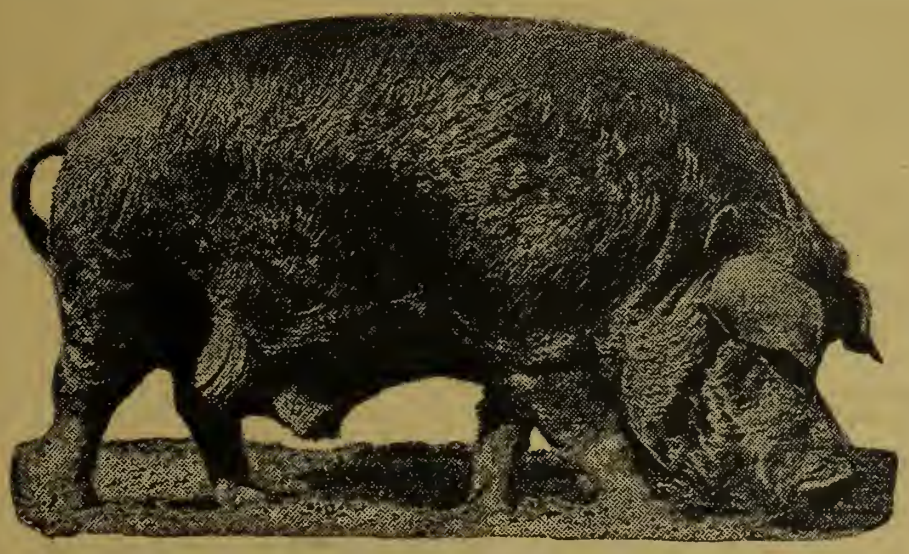
From Our Herd of 800 Head of

BIG TYPE, PURE BRED DUROC-JERSEYS

We Have Selected

40 - Sows and Gilts - 40

Due to Farrow in March **Bred to our Grand Champion Boars**



ACE OF PATHFINDERS, 304417

This is one of our herd boars. Second Largest Senior Yearling in the world.

WRITE FOR CATALOG

Diamond Bar Ranch

"Where Size is the Fashion and Quality Reigns Supreme"

Spadra **Los Angeles County** **California**

Walter T. Gatton, Supt. of Swine Dept.

This is the first of a series of Advertisements of this Sale. Others will appear each week. Watch for them.

From The Healthy Dairy

the milk truck always takes a full load. As soon as disease creeps in the milk yield will show it. Cows that do not milk as they should are usually suffering from a run-down condition of the vital organs of production. Medical treatment is needed to restore health and vigor.

KOW-KURE is the best known and most used medicine for treating the "poor milker." It is unfailing in the prevention or treatment of Barrenness, Abortion, Retained Afterbirth, Bunches, Scouring and Milk Fever. It should be kept wherever cows are raised for profit. KOW-KURE comes in 60c and $1.20 packages at feed dealers' and druggists'.

Send for free treatise on cow diseases, "THE HOME COW DOCTOR"

Dairy Association Co., Lyndonville, Vt.

CAUTION

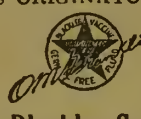
Do Not Be Deceived

There is only one GENUINE O. M. FRANKLIN Blackleg Aggressin (commonly called Vaccine).

Beware of imitations. You cannot afford to have anyone experiment on your animals.

Accurate use of the GENUINE O. M. FRANKLIN Blackleg Vaccine positively protects against Blackleg.

Be absolutely safe in using the ORIGINAL and GENUINE manufactured by THE KANSAS BLACKLEG SERUM CO., under the direct supervision of Dr. O. M Franklin the ORIGINATOR.

This Seal  on Every Bottle

The Kansas Blackleg Serum Company

Amarillo, Texas; Denver, Colo.; El Paso, Texas; Ft Worth, Texas; Kansas City, Missouri; Oklahoma City Oklahoma; Phoenix, Arizona; Pierre, South Dakota; Salt Lake City, Utah.

125 E. Main St., SANTA MARIA, CAL.

DON'T CUT OUT A Shoe Boil, Capped Hock or Bursitis

FOR ABSORBINE TRADE MARK REG. U.S. PAT. OFF.

will reduce them and leave no blemishes. Stops lameness promptly. Does not blister or remove the hair, and horse can be worked. $2.50 a bottle delivered. Book 6 R free.

ABSORBINE, JR., for mankind, the antiseptic liniment for Boils, Bruises, Sores, Swellings, Varicose Veins. Allays Pain and Inflammation. Price $1.25 a bottle at druggists or delivered. Will tell you more if you write.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Beef Cattle Specialist

For 30 years I have been devoting my entire time to pure bred beef cattle. I know the kind of cattle California needs and where and how to buy. I make regular trips to the great producing centers and will buy on order. Best of references. Satisfaction assured. Correspondence invited. R. M. DUNLAP, Hotel Land

Sacramento, Cal.

A Letter From a Poland China Breeder

Hugh C. Shinn of Tulare writes to the livestock editor:

"Your articles in the Cultivator of November 29, pages 728 and 729, meet my approval so completely that I thought I would have to tell you about it. There are a great many breeders as well as farmers who might study them closely to their advantage.

"If you have visited many new herds you know that it is a very common thing for a man to buy a sow or gilt bred to farrow on a certain date and then have her farrow a month sooner or later. He feels rather dubious about it and wonders whether anyone knows what is the sire of the litter. The breeder who sold him the sow, after he finds out when she farrowed, figures back 112 days and signs a statement that this sow was bred to one of his herd boars on that date. Doesn't sound just right to me. This is only one of a great many ways in which a great many sows and gilts sold in the last year have proven unsatisfactory.

"There are some Poland China breeders who are always known to keep accurate and reliable records and others who are not—which you doubtless know—and the man who is particular about the records he keeps is just the one who is mighty particular about the class of sows he keeps in his herd. There are many breeders now who will only buy from breeders whom they know keep careful records and stand behind their representations.

"Your article 'Build Your Herd on a Sound Basis' might have been made somewhat stronger by saying that only really high class animals have any real value for breeding purposes and that a lot sold for such have no value whatever.

"You wonder how so many pure bred hog sales are going to go this spring? Well, real good stuff will command a good price and a lot of ordinary stuff will bring some very ordinary prices and a lot of breeders will learn what kind are worth raising and farmers will learn what kind it pays to buy. Maybe there won't be so many sales next fall, but I will gamble that the quality of stuff offered at public sale will be a lot higher.

"Now if you have had the patience to read this far, I want to tell you that the Poland China business in Tulare County is in a thrifty condition and on a sound basis."

Use Molasses in Pork Curing

In the present sugar shortage it is advisable, even if sugar can be procured, to use molasses or some kind of syrup in place of it in the formulas used for curing pork, according to the United States department of agriculture specialists.

If sugar is used for dry curing it is better anyway to make it into a syrup before using, for salt mixed with sugar will not stick on meat as well as salt mixed with syrup. The use of molasses or commercial syrup does away with this extra work.

The following formulas have been found to give good results:

Sweet Pickle or Brine Cure

Select pieces 12 pounds or less. Make a pickle consisting of three and one-half pounds salt, one and three-quarter pounds syrup or molasses, or, if preferred, one and one-quarter pounds sugar, preferably brown, one ounce saltpeter, two and one-quarter gallons water. These amounts for 50 pounds of meat. If more or less meat is used, the amounts of the ingredients should be correspondingly increased or decreased. Under no circumstances should the individual piece of meat weigh over 12 pounds.

Place the meat in a stone jar or hardwood barrel and weight it down with a board and stone. Do not use iron for it will rust. Then pour in just pickle enough to cover the meat. Leave the meat in the pickle three days to the pound of meat. A 40 pound ham would be left in the pickle for 30 days, and a six pound bacon, 18 days. After the meat has been in cure a week, take it all out of the jar or barrel, remove the pickle, replace the meat, weight it down, and again pour the same pickle over the meat. Repeat every week.

Dry Cure

Applicable to either light or heavy meat. Mix thoroughly three and one-half pounds salt, one ounce saltpeter, one ounce red pepper, one ounce black pepper. Then add one and one-half pounds warm syrup or molasses and mix with the above until it assumes the appearance of sawdust.

Apply a liberal coating of the mixture to all surfaces of the meat, excepting the skin. The meat should then be placed on a table, clean floor, or in a hardwood barrel, after first sprinkling the surface of the table, floor, or bottom of the barrel with salt. Leave all the meat in cure undisturbed until the heaviest piece has been in for a period of one and one-half days to the pound. Thus if the heaviest ham weighs 20 pounds, leave all the meat in cure 30 days.

Meats cured in sweet pickle or brine should be consumed within 90 days from date of cure. Meats cured with dry cure may be consumed immediately upon removal from cure, but the flavor improves with age, and the meat is better 60 days after curing. Dry cured hams have been known to keep three or four years.

EAT LAMB

The Maurer Cattle Company of Los Angeles is aiding in the effort to whet Uncle Sam's appetite for lamb. Along this line is the recent brochure of 20 pages which touches upon present consumption and the hindrances to a bigger lamb and mutton market and other points of the industry. The book shows lamb and mutton to be amongst the most healthful and most easily digestible and most tasty meats. It gives various cuts with instructions how to discriminate in marketing, how to guard against buck and old ewe meat, and ends by giving methods of cooking. This is an attractive booklet, and some of the recipes will be given in the household department in an early issue.

BOYS CLUBS

We have received from Chas. L. Hampton, director of vocational agriculture of the Santa Rosa schools, the following statement made by Walter Olsen, a member of the club connected with that school, as to method of feeding and growing a prize winner:

"I entered the sow and litter project because I live on a farm and am interested in pigs and bought my sow through the district club leader, Mr. Hampton. I selected this breed, first because I had an opportunity to secure world champion stock and it is a fast developing breed.

"A pasture or greens cut and thrown to the pigs so they can pick out what they want is essential because it saves on high priced grain and is good for brood sows and little pigs. I fed my sow waste from the kitchen, such as sour milk, fruit peelings, etc.

"The sow drank very little water unless it was a hot day, then she drank quite a bit. The little pigs had fresh, whole milk with a little barley meal. They drank a little water when they were six weeks old.

"I fed the sow about two parts mill run, three parts alfalfa meal, three parts barley and one part coconut meal. I did not give the sow anything to eat for about 36 hours after she farrowed, then I gradually fed her until she came up to normal rations in a week or ten days.

"I made a little pen at one end of the sow's pen with enough space between the floor and the bottom of the partitions so the little pigs could run under. In this pen I fed them warm milk and barley meal five times a day; 8:00 o'clock, 10:00, 12:00, 2.00 and 5:00.

Facts in BLACK & WHITE

Great Constitutional Vigor of Holstein Cattle

Purebred Holstein-Friesian Cattle unequalled by any other dairy breed in health, hardiness, vitality, size and ability to consume economically large quantities of farm roughage, and transmute it into milk, butter, veal and beef. Holstein cows are the most profitable of all in milk and butter production.

Write us today for the valuable information contained in our free booklets. We cheerfully welcome correspondence.

THE HOLSTEIN-FRIESIAN ASSOCIATION
1 Hudson Street,
Brattleboro, Vermont.

$30 Holsteins $30

Five weeks old 15-16 pure bred from Waukesha County, the world's greatest cow county. $30.00 crated. Write us for anything in cattle.

DR. J. A. ROBERTS STOCK FARMS
Oconomowoc, Wis.
Western Branch: Hollywood, California

Every Shorthorn Breeder

or prospective breeder — in America would be inspired to witness the display of Shorthorn cattle at the International Show and Sale at Chicago the first week in December. The Shorthorn sale occurs Thursday, December 4, under the auspices of the

American Shorthorn Breeders Association
13 Dexter Park Ave., Chicago, Ill.
Ask for "The Shorthorn in America."

Bunting's Mission Herefords Are Profitable

They will increase cattle profits by adding pounds of beef to every steer sold. For the best of breeding and individuality visit my herd and see the kind that win at the best shows. Prices reasonable. You'll be welcome.

JOHN A. BUNTING
Mission San Jose Calif.

DIAMOND G HEREFORDS

are the kind that make good under all conditions. They have the size, bone and constitution that the range operator wants. Herd headed by Don Perfect 2d, one of the best bulls in the West. Correspondence invited and visitors welcome.

H. H. Gable Esparto, Calif.

The Leading Live Stock Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References. The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

Duroc-Jersey
Registered Big Type Bred Gilts
California George Junior Republic
Chino, Cal. P.O. Box 157

Westrobac

Los Angeles, Calif.
618 So. Spring St.
San Francisco, Calif.
440-442 Sansome St.

SANTA ANITA RANCHO

Anoakia Breeding Farm

Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion and Don Castano, five gaited saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita Cal.

W. H. Taylor, Supt.

Quality Holsteins

Our herd is headed by a grandson of the world's greatest dairy cow, Tilly Alcartra,

Sir Aaggie Korndyke Alcartra

whose dam and sire's dam average:
Butter, one year..... 1096.58
Milk, one year.....27316.60
Females and bulls from A. R. O. dams for sale
All animals guaranteed

Leeman & Kilgore, Ripon, Calif.

GUERNSEYS

Butter Fat at Lower Cost per lb.

No other breed can produce rich golden butter fat as cheaply as the Guernsey. Official yearly records show—one cow has given 24,008 lbs. milk and 1,008 lbs. butter fat. Write for our free booklets.

QUALITY ECONOMY QUANTITY

The American Guernsey Cattle Club.
Box C 40, Peterboro, N. H.

Some of the finest GUERNSEYS in the West are at Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

Brighton Farm Herds

Registered Shorthorns and Berkshires---Both Sexes

H. L. & E. H. Murphy

Perkins, Cal.

JERSEYS

3 BULLS | No. 1 born Mar. 1, 1919. Sire, Our Noble Mayair Hero. | 3 BULLS

No. 2 born Oct. 1, 1919. Sire our Kathie's Eminent. | All from high record cows in Arden herd | No. 3 born Dec. 20, 1918. Sire same as No 2.

ARDEN DAIRY CERTIFIED. EL MONTE. CALIF.

Sturdy Calves

Result from proper food. AN-FO Calf Meal in skim milk or water alone nourishes them right. Raises Sturdy Calves at small cost. Feed Dealers or

ANIMAL FOOD CO., Oakland, Supply

CALF AN-FO BRAND MEAL

"In winter I fed the sow at 8:00 o'clock in the morning and about 5:30 in the evenings. In summer I fed her about 7:15 a. m. and 6:15 p. m. A day or two before I weaned the pigs I cut down on the sow's feed so she would not make milk.

"I fed the little pigs two parts mill-run, three parts alfalfa meal, four parts rolled barley, two parts barley meal and one part coconut meal. I spent most of my time with the sow, cleaning the pens, washing the sow with a solution of sheepdip and water. The district club leader, Mr. Hampton, visited me and advised me about my sow and litter.

"A pure bred sow has many advantages over a scrub, because a larger, well developed type of a hog can be produced in about eight to ten months. Next year I intend to enter the corn contest, sow and litter, and I am going to plant about one acre of barley to pasture my spring litter. I have learned many things about feeding pigs, how to attend a sow at farrowing and proper light and ventilation of the house."

LIVESTOCK SHOULD NOT HAVE ACCESS TO POISONED AREAS

Joseph Avilla of Cordelia asks the Solano County board of supervisors to reimburse him for loss of cattle alleged to have died through grazing in an area poisoned with a proprietary preparation used as a thistle eradicator by the county on its highways. The request was refused and the matter will be adjusted in the local courts. Repeated warnings have been issued by the California state department of agriculture with relation to safeguarding livestock in areas poisoned for weeds, rodents or grasshoppers, and in such case the damage surely is due in part to contributory negligence on the part of livestock owners. Today (November 9), en route from Sacramento to Chico, the writer saw on the highways and railroad right of way cattle, pigs and chickens! Where is the blame?

CALIFORNIA CAMPAIGN FOR 10,000 JERSEYS ON TEST

California rose from the 54 per cent states in July to the 76 per cent states in October in the "10 000 Jerseys on Test" campaign recently inaugurated. California will reach her quota of 200 cows some time in the spring, according to University of California authorities.

The highest seven day records received at the office of official tests were for Eldorado Winifred, a cow belonging to Alex Whaley of Tulare. Eldorado Winifred at the age of four years and five months produced 24,174 pounds of butter fat and 637.6 pounds of milk, average per cent 3.79, in seven days during October.

During October 38 Holstein herds in California were on official or semi-official test. Of these, 28 put cows on test for seven days or longer and 12 for 30 days or longer. One hundred and eighty-eight Holstein cows were tested for two days as part of their yearly records. The records follow: June Register of Merit test, 91 cows; July Register of Merit test, 107 cows; August Register of Merit test, 115 cows; September Register of Merit test, 134 cows; October Register of Merit test, 153 cows.

ELBERG BUYING CHOICE SHORTHORNS

Dr. H. M. Elberg of Woodland, accompanied by his manager, Carl Johnson, is now in the East for the purpose of buying a few high class Shorthorn females. Messrs. Elberg and Johnson attended the Anoka Sale and the International Sale. At the latter sale they secured Village Belle 20th, a red junior yearling heifer by Archer's Stamp, a son of Sultan Stamp, and out of Village Belle 13th. The price paid was $1,500. While East they expect to visit a number of the leading Shorthorn establishments and will probably purchase several more females.

WORKS BOTH WAYS

"He says he proposes to make automobiles that will easily attain a speed of over one hundred miles an hour."

"Whew! that's a great business undertaking."

"Yes; but most of all it means a great undertaking business."—Philadelphia Press.

Breeders Who Know

and are a judge of the right type of Poland Chinas have placed th ir stamp of approval on my herd. I appreciate the strength of their judgment as it fully justifies the time, labor and money spent in building up my herd.

Representative Blood Lines

found in my herd are King's Massive Orange, Giant Buster, Surprise Prospect, The Yankee, Liberty Bond, The Californian, Young Jumbo and King's Big Bone Leader.

Such blood lines combined with size, type, quality, that are absolutely necessary in maintaining a high class breeding herd of Poland Chinas, will be found in my

Bred Sow Sale, Hanford, Jan. 24, 1920

Plan for this sale now—send me your name for catalog. I assure you, you will not be disappointed in the offering.

H. D. McCUNE LEMOORE, CAL.

Breeder of Big Type, Quality Poland Chinas

The Giant Bob Sale

My entire herd of Big Type Poland Chinas, including GIANT BOB, the grand champion boar of 1919, will be sold at Public Sale

Monday, January 26th, 1920, Fresno, Cal.

Practically the entire offering bred to or sired by Giant Bob. There will be a few bred to Prospector and Gatewood's Prospect. These are two of the best young boars I could find in the corn belt.

Every Poland China I own will sell in this sale. Plan now to attend.

Chas. Gatewood Fresno, Cal.

TAKE NOTICE! THE HIGHEST PRICE paid for a car load of fat hogs at the California International Livestock Show came from the

BASSETT

Herd of Advance Type Poland Chinas

Many firsts, seconds, senior champion sow and GRAND CHAMPION SOW were won in the open classes, proving without a single douht we are breeding the kind the packer wants and the farmer should raise. Animals of all ages, high class young boars, bred sows and gilts for sale at reasonable prices.

M. Bassett & Son Hanford, Cal.

Participate in the Opportunity

of securing what is eagerly sought by practically ever breeder of Poland Chinas, desiring size, type, blood lines. Real type sows bred to such boars as Lendorris Liberty Bond, Young Jumbo and Liberator, offers you the opportunity of genuine herd improvement. Inquiries cheerfully answered.

Lendorris Ranch

W. L. Haag & Son Hanford, Cal.

Bred Sow Sale, March 13th, 1920

Come to Paradise

and see my big type Poland Chinas; grandsons and daughters of Caldwell's Big Bob. One of his best sons heads my herd. Also the home of Whiz-Bang. Get my prices and breeding and satisfy yourself that I offer the kind you want.

J. H. Cook Paradise, Cal.

The Verdict of the Breeders

is that THE YANKEE JR. is one of the real Poland China boars on the Pacific Coast. He is sustaining this verdict by the class of pigs he is siring. They are called breed improvers and one of his sons will materially assist you in your breeding operations.

John M. Bernstein Hanford, Cal.

Bred Sow Sale, March 13, 1920

DON'T BE TOO LATE

Just a few of the prize winning Poland Chinas, that have been the sensations at this year's shows, remain unsold. I am not pricing them unreasonable and much less than you would pay in the east for animals not so good. Write me today what you want and I will send you full particuars.

J. F. LEHMAN LODI, CAL.

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

January 30. C. F. Mohnike, Angiola.
Thursday, March 25, Guaranty Sale, Sacramento.
April 8. Breeders Sale, Tulare.
Wednesday, April 21. A. M. Bibens, Modesto.
Wednesday, May 12, Leeman & Kilgore, Dispersal, Ripon.

Herefords

During last week of February, Pacific Coast Hereford Cattle Breeders' Association.

Shorthorns

April 17, Butte City Ranch, Butte City.

Berkshire Swine

February 14. J. Francis O'Connor, Santa Rosa.
February 15. F. J. Sandercock, Sacramento.
February 16. Muddux & Son, Sacramento.
February 18. Western Berkshire Congress, Davis.
April 17. Butte City Ranch, Butte City.

Duroc-Jerseys

January 14. State Duroc-Jersey Breeders Association consignment sale, Davis.
January 15. Harvey M. Berglund, Dixon.
January 28, Diamond Bar Ranch, Spadra, Los Angeles County.
January 29, Winsor Ranch, Bonita, sale in Los Angeles.
January 30, Ireland Ranch, Owensmouth, Los Angeles County.
February 4. Fresno County Duroc-Jersey Breeders Association, Fresno.
February 10. Glenn County Duroc-Jersey Association Sale.
February 18. Tulare County Duroc-Jersey Association Sale.

Poland Chinas

January 10. Fred Gatewood, Fresno.
January 17. Bassett, Koss and Crawshaw, Hanford.
January 24. H. D. McCune. Hanford.
January (date later). Chas. Gatewood, Fresno.
January 27. Geo. V. Beckman and Sons, Lodi.
January 31. Hale I. Marsh, Modesto.
February 3. Les McCracken, Ripon.
February 6. Tulare Poland China Breeders Association, Tulare.
February 12. San Joaquin Poland China Breeders Association, Lodi.
January 13. Glenn County Poland China Breeders, Orland.
February 21. Merced County Poland China Breeders Association, Merced.
February 21. McSwain, Merced.
February 28. Kings County Poland China Breedrs Association, Hanford.
March 13. Haag & Bernstein, Hanford.

April 17. Butte City Ranch, Butte City.

Shetland Ponies

April 17. Butte City Ranch, Butte City.

Shropshire Sheep

McCarty and Starkweather, breeders of big type Poland Chinas, Modesto, report the sale of a boar to H. L. Graham, San Fernando. This boar was sired by Kansas King and out of Miss Nebraska 2nd, the dam of the four senior pigs shown by them at the California International Livestock Show and which were placed one, two, three and four in their class. Another boar by King Jones Over and out of Movie Actress was sold to F. M. Woods, Jr., Menlo Park.

Valley View Farms, property of W. T. Hollingshead and Sons, Orland, just finished breeding 50 fall and spring Duroc-Jersey gilts, a number of which will go into the sale to be held in Orland some time in February. They will also consign to the sale to be held in Davis January 14 by the California Duroc-Jersey Breeders Association a junior yearling sow bred to Uneeda Sensational Defender, junior champion boar at the late Glenn County fair.

The Poland China breeders of California through their state organization will hold a consignment sale of high class bred sows and gilts at University Farm, Davis, during stockmen's week which has been announced for the last week in February. The committee having this in charge is composed of Hale I. Marsh, Modesto; Sherwood Beckman, Lodi, and Fred Gatewood, Fresno.

In a recent communication from Clayton Slocum, well known to the breeders of Duroc-Jersey swine, he states that he expects to leave for the East just after the first of the year and will visit the leading herds of the East and the Central West. He also states that he has been commissioned to purchase a number of bred sows and gilts for a number of farmers and breeders and that he will be pleased to select for any breeder or farmer such animals as he may desire to purchase in the East.

Chas. Gatewood of Fresno has announced his sale date as January 26. At this time Mr. Gatewood will hold a complete dispersal sale of his herd of Poland Chinas, which will include the 1919 grand champion boar Giant Bob. As has been previously stated, Mr. Gatewood is forced by failing health to retire from the breeding business. No doubt his sale will attract buyers from all over the Pacific Coast.

Chas. M. Talmadge, formerly of Newport, Washington, and a breeder of Berkshires and Jersey cattle, paid the Berkshire breeders of California a brief visit the past week. Mr. Talmadge was returning from the International Livestock Show, Chicago, where he judged the Berkshires in both the breeding and fat classes. Mr. Talmadge will locate near Salem, Oregon, where he will continue his breeding operations and be in a position to keep in close touch with Berkshire matters as he is one of the directors of the American Berkshire Association.

W. M. Carruthers, breeder of Shorthorn cattle and Berkshire swine, expects to move all his livestock to his new farm just north of Live Oak. He states that he has sold all the Berkshires he can spare and when settled on his new farm expects to materially increase his herd of Berkshires. One addition will be a new boar by Rival's Champion Best which he is securing from the herd of Dean Curtiss, Ames, Iowa.

H. E. Spires of the publicity committee for the Fresno district Duroc-Jersey swine breeders states that they will hold a public sale on the Fresno fair grounds February 4, 1920. The sale will consist of bred sows and gilts, and as this is their first sale particular attention will be paid to the individual merit of the animals offered as well as the most popular blood lines.

H. E. Cornwell, Modesto, has an excellent herd of registered Holsteins milking again, although it will be remembered that the milking herd was sold off two years ago. The daughters of Prince Hiske Walker are the pride of the herd, and in Mr. Cornwell's opinion are the best lot of heifers he has yet bred and developed. Ciruela Walker, junior champion at Sacramento and grand champion at Fresno and Stockton this year, is milking around 56 pounds per day four months from freshening with first calf. This heifer traveled over 500 miles by motor truck making the fairs, freshened on the circuit and made an official record of 18 pounds butter in seven days while on the trip. Anoakia Diotime Korndyke, now milking with her second calf, is making right around two pounds fat per day. Recent seven day records made in the herd are 19.87 pounds butter from 408.9 pounds milk by Melba Zenobia Pontiac, and 19.39 pounds butter from 445.7 pounds milk by Jetze Aaggie De Kol. Several members of the herd have made creditable records in the eight months after calving division, including Abby De Kol Prilly, daughter of the 30 pound cow Abby De Kol of East Bank 2nd, who made 10.54 pounds as a junior three year old. Another fine crop of heifer calves is coming on in Mr. Cornwell's herd. They are a uniform lot, showing plenty of constitution, straight lines, and promising udder development. They are by the present herd sire Sir Johanna De Kol Rag Apple who is by a son of Rag Apple Korndyke and out of Adirondac Wietske Dairy Maid, the highest record cow in California, 41.02 pounds butter in seven days. It will be remembered that another of her sons sold at Sacramento for $5,000 last March.

Several substantial official records have been made recently in the good herd of registered Holsteins owned by A. M. Bibens, Modesto. Sinaloa Josephus made 23 pounds butter in seven days and 94 pounds butter in 30 days, and Mechthilde Josephine Skylark, a daughter of Sir Skylark Ormsby Hengerveld, made 20.6 pounds butter in seven days and 80.9 pounds in 30 days. An especially pleasing record was made early in the fall by Miss Luit Aralia Burke, a daughter of Aralia King and the 32 pound four year old Luit Burke. She made 26.62 pounds butter in seven days and milked up to 78 pounds per day. No especial effort is made by Mr. Bibens to secure large seven day records, as his plan of feeding and handling is directed toward consistent production for at least ten months and a calf within the year. Mr. Bibens has made arrangements with California Breeders Sales and Pedigree Company, Sacramento, to sell his milk herd numbering 60 cows at public auction on his farm on Wednesday, April 21, 1920.

Two of the most enthusiastic California breeders at the International were John A. Bunting, secretary of the Pacific Coast Hereford Breeders Association, and H. H. Gable, prominent Hereford breeder of Esparto. Bunting and Gable left for the East directly after the San Francisco show. They attended the American Royal at Kansas City and during the time between that show and the International visited many of the leading herds.

Bunting says that the officers of the American Hereford Breeders Association consider California a great field for Herefords and that they will probably offer unusual encouragement to the local breeders and to Eastern breeders who exhibit at the Coast shows next year.

W. T. Hollingshead & Sons have recently sold 18 head of their fine Duroc-Jerseys. The most recent sales are: Mrs. Geo. Mills, Sacramento, spring boar; C. Ruff, Pasakanto, spring boar; Smith & Hurni, Oakland, gilt bred to their great yearling boar, Uneeda Sensational Defender; A. C. Havens & Son, Orland, two fine fall sow pigs; Roland Fallis, Hamilton City high school pig club boy, two sow pigs.

For your own protection order ONLY Germain's specially-selected, proven, tested, true-to-type Hairy Peruvian Alfalfa Seed. Our supply is limited and we may be oversold in double-quick time. To avoid disappointment place your order at once. Wire, phone or write for a reservation of seed, stating amount wanted—or call personally if you can. Orders will be filled as received.

Whether you intend to plant now or next Spring, we advise you to buy your seed now. Increasing demand means increased prices.

For further information about Germain's PROVEN Hairy Peruvian Alfalfa, get our free folder and booklet containing 30 testimonial letters.

The Highest Priced SIRE and SON

KING KORNDYKE PONTIAC 20th

and HIS SON

KARLRAY PONTIAC TOLA

King Korndyke Pontiac 20th, our junior herd sire, at $6500, is the highest priced Holstein bull ever sold at public sale in California.

Karlray Pontiac Tola, a three months old son of King Korndyke Pontiac 20th, and the great heifer K. P. Tola Joe, has been sold by Gotshall and Magruder, Ripon, to A. B. Spooner, San Luis Obispo, at a price never exceeded in California for a bull calf at private sale.

In these instances price is a true measure of quality.
Why not put a son of this sire at the head of your herd?

OUR ENTIRE HERD IS TUBERCULIN TESTED

Tulare Holstein Farm

W. J. HIGDON, Owner TULARE, CALIF. H. L. REDD, Herdsman

Diamond Bar Ranch

By H. S. Hoard

The Diamond Bar Ranch at Spadra has attracted a great deal of attention among livestock men because of the fine herd of Duroc-Jersey swine which has been established on this ranch.

The foundation herd was selected with great care and discrimination. Not only were the best animals selected from many of the best herds in California but many of the best herds in Iowa and Nebraska were drawn on. The result is that the Diamond Bar Ranch herd of Durocs stands as one of the best herds in the United States today. As an evidence of the high position which this herd holds it is well to point out that this is the only herd of Durocs in the United States which is headed by three grand champion boars. These three great boars are Ace of Pathfinders. Mammoth Sensation Junior and California Great Wonder.

The winnings of the Diamond Bar Durocs on the 1919 show circuit is another evidence of the high quality of the individuals which go to make up this herd. At the California state fair this herd won first on junior yearling boar, first on junior yearling sow, first on senior sow pig, junior championship on sow, first on aged herd, first on get of sire and first on barrow, and many second and third prizes.

At the Southern California fair at Riverside the winnings were equally heavy including first on aged boar, first on yearling boar, first on yearling sow, first on senior sow pig, senior champion boar, grand champion boar, junior champion sow, first on aged herd, first on get of sire, and many second and third prizes.

At the Los Angeles Livestock Show which was conceded to be the greatest Duroc exhibit ever held on the Pacific Coast, this herd came off with flying colors, mostly blues and purples. This herd won five championship, five first, two second, four third, and two fourth prizes, as well as the large silver cup given by the American Duroc Breeders Association for the best exhibit of Durocs.

It is remarkable that one herd could win so heavily against the strong competition which there was at all of these shows, and is evidence that the Diamond Bar Ranch is breeding the proven and popular type.

They are breeding the large heavy boned and backed type that have proven so popular throughout the Middle West. Their herd boar Ace of Pathfinders is said to be the second largest senior yearling in the world. He is not only large with bone, heavy and strong enough to carry his great weight, but he is also smooth and of refined quality. He was first in his class, junior champion boar and grand champion boar at the Los Angeles Livestock Show. He also was a winner in his class at the National Swine Show and headed the get of sire and aged herd groups at both the National Swine Show and the Los Angeles Livestock Show.

The Diamond Bar Ranch will hold its first public sale of Durocs on Tuesday, January 28, 1920, at the ranch. The offering will consist of 40 head of choice sows and gilts. These will all be bred to farrow in March, so will mean a quick return on the investment.

They are bred to the three grand champion boars which, combined with their high individual merit, show promise of farrowing some outstanding young pigs.

The Diamond Bar Ranch herd of Durocs consists of over 800 head of various ages so that it is possible to select anything that a breeder may desire.

Catalogues describing the blood lines, breeding dates and other "vital statistics" will soon be ready for distribution. We suggest that those of our readers who are interested in Durocs send in their names at once so that they may receive a catalogue as soon as they are ready.

Butter and Cheese Scoring Contest

By S. L. Denning

The third scoring of the 1919 California Educational Butter and Cheese Scoring Contest was held in Davis on November 20. This scoring was held in connection with the Experienced Buttermakers' Short Course and the California Butter, Cheese and Ice Cream Makers' Association Convention.

Twenty-one samples of butter and four cheese were entered for scoring. T. J. Harris of San Francisco, H. S. Baird and S. L. Denning of Davis were the judges. C. A. Holm of the Moss Rose Creamery of Salinas received the highest commercial score on butter of 93¼. The Watsonville Creamery of Watsonville received the highest average of commercial and composition scores of 96½. O. Gheggiolo of the University Farm Creamery received the highest score on cheddar cheese, of 93.

The California Butter, Cheese and Ice Cream Makers' Association held a competitive butter judging contest in connection with the scoring. The following results were received: A. R. Wickham, first; G. A. Dondero, second; V. Mulberg, third.

Following is a list of entries which scored 90 or above:

BUTTER

Name	Creamery	Address	Score
C. A. Holm	Moss Rose	Salinas	93¼
	Watsonville	Watsonville	93
P. Peterson	Valley Flower	Ferndale	92½
V. Simonsen	Madera	Madera	92½
R. L. Gibson	Salinas	Salinas	92
D. M. Young	University Farm	Davis	92
C. A. Johnson	Bodega	Bodega	92
	Hooper	San Francisco	91½
A. Wirz	Hollister	Hollister	91½
Hans Bino	Petaluma Coop	Petaluma	91½
N. Jensen	Uneeda	Lodi	91½
Washington Market		San Francisco	91
Fred Deter	Montague	Montague	91
W. F. Butler	Visalia Coop	Visalia	90½
J. R. Welke	Sierra Valley	Loyalton	90
S. N. Richardson	Crystal & Gold Nugget Co.	San Jose	90

CHEDDAR CHEESE

O. Gheggioli	University Farm	Davis	93
J. A. Jack	Watson Cheese	McArthur	92

Butter Shows Poor Body

Of the 21 samples entered none were scored perfect on body. In the former scorings it has been only occasionally that it has been necessary to score an entry 23½ in body. In this scoring five of the entries scored 23½ or lower. The temperatures employed during churning probably influenced the body to a large extent.

The buttermaker will do well to closely observe temperatures and to keep an accurate record of them. A churning temperature should be used that will complete the churning in from 40 minutes to one hour and give a buttermilk containing not more than two-tenths per cent of butterfat. The buttermilk should be removed immediately after churning and the butter washed with water which is within two degrees of the temperature of the buttermilk. During the working the butter should neither soften nor harden materially. The butter should be fairly firm during the entire working. At this time of the year when many cows are completing their lactation period and when a few cows are fresh, special attention must be given to body. To get good results the temperature must be watched closely.

Results of the 1919 contest together with plans for the 1920 contest will be published about January 1.

SWAT THE FLY BEFORE HE'S BORN

There seems to be nothing that is altogether satisfactory in keeping flies away from animals. Anything that will accomplish this end and last for longer than an hour or two must be of an oily or tarry nature and is otherwise objectionable. The following has been recommended and found to be quite unsatisfactory:

One pound rancid lard mixed with one-half pint kerosene and applied with the hand.

Three parts fish oil mixed with one part kerosene can be applied with a spray pump. A spray pump made of tin can be purchased for 75 cents and is not only useful in spraying the bodies of animals but can be used for spraying small shrubs, chicken roosts, etc.

A mixture that will last longer and is very effective consists of two parts crude cottonseed oil or fish oil mixed with one pint of pine tar. This can be best applied with a brush.

Crude petroleum is most effective and lasting but makes the animal very dirty.

A convenient fly poison to use in the house is bicromate of potash, one dram in two ounces of water. This may be placed in saucers and is not dangerous to human life. Also one teaspoon of formalin in one-half pint of water may be placed in several places in a building, but must be kept away from children.—Dr. Geo. H. Glover, Colorado Agricultural College.

Xmas and New Year's Greetings

from Frank P. Gardiner & Son to Our Friends and Customers

We also wish to announce the safe arrival from Ed Kerns of Stanton, Neb., of the latest and Greatest Sensation to arrive on the Pacific Coast.

Greater Sensation

Sired by

Great Sensation

who sired world's champion boar at National Swine Show, 1919. Also the world's grand champion boar 1919. His get has won more prizes at the fairs and swine shows this year than any living boar.

NOTICE—To farmers and breeders: We will produce over a thousand high class Durocs next year sired and damed by the best blood lines of the breed. Write us your wants. Satisfaction in every transaction. Prices reasonable.

Gardiner Ranch

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Rivets Hold Tight

Norwalk Tires

are fortified in strength by the insertion of 529 rubber rivets in each square inch of fabric.

—That means extra mileage.

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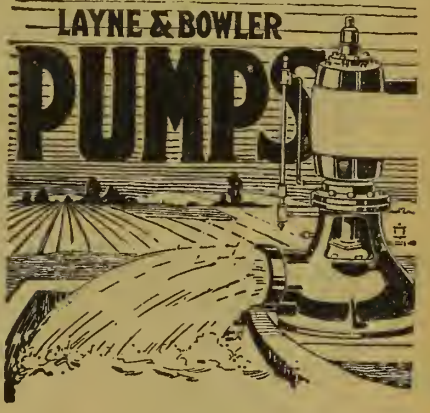

Produce Cheapest Water

More than 30 years' experience in pump building is reflected in Layne & Bowler Turbine Centrifugal Pumps. They embody many exclusive features, protected by patents.

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Fairbanks-Morse "Z" Engines use Bosch High Tension Magneto Ignition. Largest Magneto order goes to Bosch.

Fill your Silo more quickly and more cheaply by using a properly designed Bosch-Equipt Gas Engine.

The famous Fairbanks-Morse investigation which resulted in their making Bosch High Tension Magneto Ignition Standard on their famous "Z" engines is your guide for selecting any gas engine driven piece of machinery—if it's Bosch-equipt, its Best-equipt.

The manufacturer who makes Bosch High Tension Magneto his standard ignition spends more money than he would for any other system in order to give you a finer, more perfect and a more dependable product.

Specify Bosch High Tension Magneto Ignition for your Truck, Tractor or Automobile; Bosch is America's Supreme Ignition System. You can get it if you will insist.

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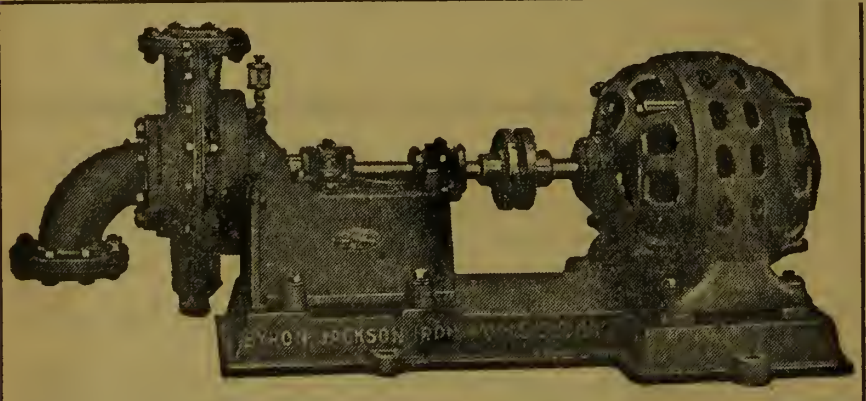
AMERICA'S SUPREME IGNITION SYSTEM
MOTOR TRUCKS - TRACTORS - AIRPLANES - MOTOR CARS - MOTOR BOATS - MOTORCYCLES - GAS ENGINES - ETC.



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The difference between a "live" and a "dead" Ranch is "Water" and "No Water."

"Byron Jackson" Pumps meet every water condition
Write us giving your water conditions and requirements.
Our New Catalog No. 60-B for the asking.

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PACIFIC NEW AND RE-NEWED PIPE SAVES MONEY
Renewed screw casing costs from one-half to two-thirds less than standard pipe. Large savings on standard pipe, fittings and valves; special fittings made to order. Pacific Pipe is thoroughly tested and guaranteed for 150 pounds working pressure; asphaltum dipped; serves every purpose. Let us save you money. Write

PACIFIC PIPE CO. 237 HOWARD STREET SAN FRANCISCO

When Writing Advertisers, Mention the Cultivator.

The Seedsmen

Under this head a prominent seedsman says his firm in its 1920 catalogue will address the public about as follows, believing it will appreciate this explanation of the inside workings of the seed trade and this firm's endeavor to aid all in need of advice:

"The man who goes into the business of selling seed for the sole selfish purpose of making the most money out of it is not a conscientious seedsman. He is a trader who buys in the cheapest market regardless of quality and by fictitious values sells at a price out of proportion to the real worth, and too often the seed turns out to be not at all as it is advertised or represented, resulting in much loss to the customer. It is because of such practice that the seed trade has suffered calumny and is often regarded with suspicion, so that a grower is apprehensive when he buys seed.

There are reasons for this apprehension. We will undertake to throw some light on the inside work, behind the scenes as it were, of the seed business.

There are in every town one or more merchants selling seed as a side line—it is one of the many household necessities that go to make up a general store. The proprietor knows nothing of the reliability of the seeds other than the label on the package. The customer buys, scarcely knowing any more, and may often be disappointed with the results obtained after a season of hard work—and he may have a feeling that the seedsman was dishonest.

Cooperation With Growers

Now the truth is that there are comparatively few exclusive seedsmen in the country. By seedsmen we mean men who have given years of hard application to learn the business. Unlike general merchandise that is bought from a factory and sold by label or by its appearance, seed must be pedigreed. The dealer must buy from a professional grower who knows what types of vegetables are wanted. Professional growers specialize; some in certain varieties of vegetables; some in assorted varieties, selected according to the soil and climatic conditions suited to each particular variety. Many growers specialize in flowers, others in grain and some in grasses. All have a reputation to make and to maintain if they would succeed. The seedsmen know these growers and their reputation for reliability and are seldom deceived by them. The result is that seeds are becoming more and more reliable from year to year through this intelligent cooperation of seedsman and grower.

Duties of Seedsmen

The seedsman's duties do not end with the buying of seeds; he must educate the customer. Probably more than 75 per cent of the errors and disappointments are because of the lack of knowledge on the part of the buyer who has seen good results of certain crops and fails to note the time of planting, climatic and soil conditions under which these crops were grown. He buys and plants the same kind of seeds, probably out of season and under his own conditions, which may be entirely different, with the result that there is whole or partial failure, which he promptly attributes to inferior seed.

Therefore, it is the seedsmen's duty to safeguard their customers against such error by advising them to plant the right seed at the right time under right conditions.

The Catalogue

Many seedsmen attempt to do this through the catalogue, but the space is too expensive to enter into detail; therefore, tables have been compiled to cover all the general rules of planting, etc., but every rule has its exceptions, and no table can be compiled to meet all conditions. Here is an idea of some of the expense of the catalogue. With postage at the rate of one-half cent for each ounce or fraction thereof, a seedsman will crowd to the limit of six ounces to obtain the three cent postage—a few words more may mean another page or two requiring an additional fraction of an ounce which requires an additional cent for postage; also additional expense for more paper and labor. Therefore, on 100,000 catalogues a few lines more means an additional expense of $1,000 in postage and approximately $500 in paper and labor, a total of $1,500. This explains why seed catalogues are usually printed in small type and crowded at that."

Hints for Winter Motoring

Some adjustment of the carburetor is necessary as a "winter position." The main adjustment screw, as well as the lever that controls the heat shutter or air intake, should be adjusted, but the owner should not try to make the adjustment himself unless he is an expert mechanic. Even the best written instruction books are not any too explicit on the subject of carburetor adjustment.

In order to get the utmost mileage and satisfaction, it is well to take the car to an expert and have him adjust it so that it will run well without using an excessive amount of gasoline and yet not backfire because of too lean a mixture.

Of course, for starting it is necessary to use whatever "choke" device there may be on the car. It should be rembered that when the choke is fully opened it admits raw gas, without any air. Therefore, after hearing one or two explosions of the motor, the choke should be reduced to one-half or one-quarter, so that the carburetor will draw a supply of warm air from the exhaust manifold. After reducing the choke and running five or ten minutes in this position, the choke should be returned to normal.

If the mistake is made of running the motor after it has been warmed up, without then regulating the wide-open "choke," the driver will not get the maximum mileage and, in fact, is apt to choke his engine to the point where it will not run at all.

The adjustment of the carburetor depends to some extent upon the ignition system used. This is especially true concerning winter driving. For example, if the car depends upon battery ignition, there will be trouble in starting on a cold day and, in spinning the fly-wheel with the starter, the driver may be obliged to run down his battery to the point where it becomes weak, before he can get started at all.

This means that he will only have enough "juice" left to get going long enough to begin to recharge it, or he may have to run on the generator for a while, which is not good practice.

The point is, that to get going at all with a battery-ignition system, it is necessary not only to pull the choke button entirely out but, in addition, to have the carburetor adjusted for a very rich mixture even for ordinary running.

The motorist who depends upon battery ignition during the winter months will use more gasoline to the mile than the driver who has a magneto.

With a magneto, even if the electric starter fails, it is still possible to crank the engine and get going on the magneto spark, as the latter is very hot and fat and will burn a much leaner mixture than is possible with battery ignition. This, of course, is a scientific fact and has been proved by numerous tests.

CONQUERING POTATO WART

Reports given at a recent conference of officials from West Virginia, Pennsylvania and Maryland with the federal horticultural board of the United States department of agriculture, called to consider the status of the potato wart disease, show that there has been only a slight spread of this recently discovered menace to the potato industry of America, and that by planting immune varieties further losses from the disease can be practically eliminated. The potato wart is one of the most destructive maladies attacking potato crops in

Europe, and heretofore no means has been known for cradicating it from the soil, once a garden or a field becomes infected. Not only have the investigators for the department found varieties of potatoes which are immune, but they have devised a method of thoroughly disinfecting the soil by the use of steam and formaldehyde.

As a result of the conference it is announced that the authorities of West Virginia and Pennsylvania will take steps to assist gardeners in the infected regions in the purchase of varieties of seed known to be immune. It may be found advisable, also, to undertake the disinfection of a limited number of garden plots. As the cost of this work is approximately $1,000 an acre, the efforts along this line will be limited until the most effective and economical methods have been discovered.

The wart is a disease attacking the tubers and also the stems, causing irregular, warty discolorations beginning in the tender tissues near the eyes and enlarging until the entire potato may be changed into a black and worthless mass. Young galls are whitish or greenish, suggesting a cauliflower head. In the recent outbreak the disease manifested itself in a severe form, practically destroying all crops in many gardens.

To determine whether or not American and other varieties were immune or resistant to this disease, a large number of commercial varieties and promising seedlings, as well as 29 immune English varieties, were grown the past season in wart infested areas. Among the commercial American varieties the following were found to be immune: Irish Cobbler, Johnsons Flour Ball, and Early Petoskey of the Cobbler group, and the Spaulding Four of the Rose group. All of the immune English varieties kept their immunity when planted in Pennsylvania. The seed was imported from England. Seven of the English varieties gave excellent yields this year, but their adaptability to American conditions is still in doubt. It is believed that by planting of immune varieties in infected areas and by the fumigating of the soil in certain instances the disease can be effectively stamped out.

Fumigation is carried on by sprinkling a solution of formaldehyde on the soil and then covering the infected area with a wooden box. Into this box steam is injected at high pressure, causing the formaldehyde to penetrate the soil for a foot or more. Seed grown in this soil produced entirely healthy plants, showing that every trace of the disease had been eliminated.

TRACTORS IN GREECE

A large percentage of the farm machinery used in Greece is of American manufacture, but the Royal Greek Agricultural Society is seeking to determine what type of farm tractor is best and is trying to arrange a tractor demonstration and has invited manufacturers to take part. The American Red Cross has had an expert in Greece for four months, studying soil conditions and agricultural methods, and a report is shortly expected. At present there is a strong demand for tractors, threshers, harrows, plows, grain binders, horse cultivators and many other implements.

SEED POTATOES TO IMPROVE

Oregon is going after the California seed potato market. Potato certification has been removed from the state college and is in the hands of the state board of horticulture of Washington, which is putting on a regular potato seed campaign, funds having been appropriated by the legislature for that purpose. With the support of recent legislation in California, the California seed potato market will take on a different aspect than has obtained in the past.

PERUVIAN ALFALFA

An investigation of the seed alfalfa market proves the growing popularity of the hairy Peruvian variety. It seems better adapted to the semi-arid Southwest than the older and better known type and stands extremes in both heat and cold without checking growth. Its yield is also heavier wherever given trial. In spite of this growing popularity the price has not risen in proportion. Last year common alfalfa brought $20 a hundred, while the Peruvian was $45. Now the common type is $45, while the hairy variety has advanced only to $52 this year. Seedmen report heavy demand for all alfalfa seed.

MARKET FARM PRODUCTS THROUGH ADVERTISING

"I toiled, I sweat and I produced—and I found that I must sell at the other mans' price and for his profit. I produced better stuff than my neighbors only to find that theirs set the price, very often, at which I must sell in the local market. By consistent advertising I have been able to secure a fair price. My experience is that advertising pays. It frees me from my neighbors' limitations. It increases my self respect and has added hundreds of acquaintances and friends to my circle."

This testimony comes from Frank Pyle of Kansas, who has made a success in selling through advertising apples and cider. He uses every care to make his products the best to be had. Farmers who are not satisfied to sell a superior article at the price paid locally for inferior articles or who produce a specialty and seek a wider market should try advertising. Go moderately at first, of course, until through experience the greatest returns can be forecast from the use of some particular kind of advertising.

Farms which produce a surplus of extra nice honey, sorghum, cured meats, fruits, berries, eggs and the like might profitably acquaint others with the fact.

STATE HIGHWAY TREES

The policy of the state highway commission is to preserve all the trees aligning the roads under its control. In answer to an Orange County farmer asking permission to cut down the encalypts in front of his property the commission denies his request for the reason "that such trees are considered an enhancement of the beauty of the state highway and their removal is contrary to the policy of the commission to preserve shade and ornamental trees along the state highway," and adds: "Frequent petitions are presented to the highway commission for permission to cut down the trees on the state highway, where the said trees shade their land or cut off their view, etc. The commission's policy in such matters is to consider the large interests of the public and to preserve, not only the trees, but all other landmarks that make the highways attractive and traveling a pleasure."

NOT ENOUGH LAND FOR EX-SERVICE MEN

Owing to the high cost of labor and material the state land settlement board bas reached the conclusion that the funds appropriated at the last session of the legislature will not be sufficient to buy, develop and colonize two areas. It has given notice that no more land will be purchased until the tract in Merced County has been improved and settled. The notice to those who have offered lands has carried the explanation that the board has been reluctant to take this action, in part because some of the tracts offered were regarded as well suited to closer settlement, and in part because the large number of ex-service men who understand farming will not be able to acquire farms of their own in one settlement.

MEXICAN RICE CROP

The rice crop of the Yaqui Valley in Sonora, Mexico, for 1919 will be about 45,000 sacks of 110 pounds each as compared to 15,000 sacks in 1918. As one-third the present crop is sufficient for the west coast of Mexico and the export of rice to the United States is prohibited, the disposal of the crop becomes a serious problem. Communications with the interior of Mexico are very unsatisfactory and it appears the local territory will have to consume the crop, more especially as foodstuffs are scarce and high in price.

FOOTWEAR

"Did you know that they could make shoes out of all kinds of skins?"

"How about banana skins-"

"They make slippers out of them."—Pearson's Weekly.

"It Digs Cellars"

"Look at that blast! There's a day's work done with a bang. How long do you reckon it would have taken you boys to loosen all that dirt with pick and shovel, eh? There's no use talking—when you've got a heavy job of digging, no matter whether it's for tree planting, post holes, ditches, or cellars, there's nothing in the world that'll beat

HERCULES DYNAMITE

"I never knew a tenth of the things you could do with explosives until I sent to the Hercules Powder Co. for their book, 'Progressive Cultivation'. I'd tried dynamite before and it was saving me money but there were a lot of tricks in the game I didn't know until I'd read that book.

"No matter how simple blasting seems, boys, there nothing like knowing the best methods to use—the methods that give you the maximum result with a minimum of expense for material and labor—and this book tells you all about them.

"And the best part is that any farmer or orchardist can get 'Progressive Cultivation' *free* if he signs the coupon and mails it to the Hercules Powder Co."

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It is taking chances to apply any Nitrogenous Fertilizer which is not Immediately Available as food for plants, because of the tendency to unduly prolong growth and to delay maturity. It is also fatal to apply high-grade fertilizers too late.

In California, on alkaline soils or soils having alkaline tendencies, apply Nitrate of Soda with an equal quantity of acid or superphosphate. This combination will tend to diminish any black alkali present.

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The fight against wild barberry is being vigorously prosecuted by the department of agriculture.

Imperial Grows Variety

DR. DAVID FAIRCHILD, the plant introduction man of the department of agriculture, has been inspecting productions of the Imperial Valley and especially looking up some of the plants and crops which have been introduced by the department of agriculture. He says that the Imperial Valley farmer is the greatest agent for the introduction of foreign plants, and many sections of that valley have plant strangers from the uttermost parts of the earth. In listing some of these productions the Brawley News quotes Dr. Fairchild:

"South America furnished hairy Peruvian and Chilean alfalfa. The former is especially valuable to North America because of its hardy and cold resistant qualities. It is a higher yielder and a more leafy strain, starts quickly after a cutting, aspires for height and grows late in the fall season, making it an ideal variety.

"Arizona has furnished the tepary bean. It was found among the Pima and Papago Indians and is believed to have been domesticated by an unknown prehistoric race, evidenced by nameless ruins and old canals in the southwest and in northern Mexico. It is a heavy yielder in warm climates.

"From Japan come Japanese persimmons; from Manchuria, hemp; from Australia, wheat; from Northern India, roselle; from China, ramie; from South America, Peruvian and Chilean alfalfa; from Northern China, choice jujubes; and the list can be made practically endless. Africa furnishes the rare Sultana grape, the Deglet Noor, Haliawi and Khardrawi dates; Kafir corn, Rhodes and Sudan grass, milo maize and other rare grains, grasses and fruits. India furnished pomegranates; the Valley of the Euphrates, cantaloupes; and Asia Minor, mulberries. Many of these are recent introductions in the United States, while others are yet in the experimental stage.

"Twenty years after alfalfa came to California, two emigrants arrived at the Golden Gate from Africa bringing with them seed of the brown durra and white durra. They were the first of the grain sorghums to reach the United States. Later, their brothers, the milos, kafirs and shallus, arrived. Some of these are past the experimental stage; some are now being experimented with. From India alone the department of agriculture has introduced 300 varieties of sorghum for trial. Many of these have been tested out in the Imperial Valley."

Crop Yield Steadily Increases

In reviewing agricultural production in the United States Secretary Huston gives interesting facts as to increased crop production to the acre during the past 25 years. He says:

"In view of the facts it is singular that the notion should still be disseminated that American agriculture has been deteriorating and that there is ground for pessimism about the future. It is true that the production of some of the staple commodities has not kept pace with population, but this in itself may be of little significance. The advance in agriculture has revealed itself not so much in the expansion of the staple commodities as in a greater diversity of products, in the appearance of new crops, in the rise of minor crops to large proportions, and the availability of supplies throughout the year. But even in reference to the staple products as measured by one important test, there has been a very marked upward movement. The yield per acre of crop production in the United States has gradually increased. The average rate of this increase for the past 25 years has been small, it is true, being only one-half of one per cent a year, but the aggregate results have been enormous. This upward trend is not readily observed in yields from one year to another, owing to the wide yearly variations caused by the differences in seasons. But when averages are obtained for a series of years it is readily observed. During the seventies and eighties, when there was a vast expansion in farm area in the West and crops were grown on a more extensive scale, the tendency of yields was downward. Since the early nineties, however, it has been upward. For the ten years ending with 1890 the average yield per acre of wheat in the United States was 11.8 bushels; for the ten years ending in 1918 the average yield was 14.8 bushels, or an increase of 25 per cent. In the first period the average yield of corn was 23.4 bushels; in the second 25.8, or an increase of ten per cent; of oats 25.9 in the first period, in the second of 32.2, or an increase of 24 per cent; of potatoes 72.9 bushels for the period and 96.8 for the second, an increase of nearly 33 1-3 per cent. Cotton, notwithstanding the ravages of the boll weevil, increased from an average of 169 pounds in the first period to 175 pounds in the second, an increase of 3½ per cent. All other field crops have likewise improved in yield, the average for the ten years ending in 1918 being 16 per cent greater than that for the period ending in 1890. This tendency is general throughout the Union. It is not due to the shifting of production. For example, in the older state of New York the increases for the two periods were as follows: Corn, 24 per cent; wheat, 44 per cent; oats, 21 per cent; barley, 24 per cent; buckwheat, 43 per cent; potatoes, 30 per cent; hay, 10 per cent; weighted average of all 18 per cent."

Roselle

The roselle plant is a half-shrubby annual hibiscus with attractive palmately five-parted leaves and handsome but stemless yellow flowers with a crimson eye. It is of considerable value as an ornamental and is of the same family as the fine hibiscus from China so much grown in gardens.

It is as a jelly plant that roselle is best known, but there seems to be a little misunderstanding as to the part used. The edible portion is the fleshy calyx which is ready for picking two or three weeks after flowering. The seed pod is not edible and is separated from the calyx at picking time or removed after harvesting. Roselle is also used for coloring fruit juices, the green leaves are boiled for greens, the seeds are used for poultry food and the bast in the bark for fiber. In Hawaii it is a wonderful cropper for the edible portion, but in India it has long been grown as a fiber plant, along with other species of hibiscus. It grows best in countries of heavy rainfall, and Hawaii, where the annual precipitation is 150 inches, grows crops of 17,000 pounds of fresh fruit per acre, an immense yield. The seeds are planted either in the garden or in boxes and the young plants transplanted when six inches high. The plants are usually set four feet apart and must be kept well watered throughout the season. The crop is dried in houses, ten pounds of fresh fruit making one pound of the dry, and Hawaii's crop is shipped to the United States.

BEANS MOVING

The California Bean Growers' Association, with the assistance of Herbert Hoover, has sold 3,500 tons of the 1918 crop of white beans for export, and this order will be filled from holdings now in New York City. This order was placed with the European relief commission. After many months of waiting this is the first actually completed sale for export and the trade is now proceeding to cover its season's requirements at prevailing prices before the normally expected advance.

Mr. Hoover is quoted as saying: "There is no reason for American beans selling below cost of production as Europe needs all surplus bean stock over home requirements." It is believed that from now on the filling of foreign export orders will soon absorb the 1918 surplus.

NEW ZEALAND HEMP

During last year New Zealand sent to the United States native hemp or fiber to the amount of 15 568 tons. This plant, Phormium tenax by name, grows as well in California as it does in New Zealand and may be found either in its green or variegated form in the gardens of every county in the state. It is known to gardeners as the New Zealand flax. It is a tough hardy plant, growing in all kinds of soils and situations. In its native country it grows on rocky sea cliffs within the ocean's spray, but thrives best in low damp lands. Some day California will plant it in large quantities, for we now have a small acreage that makes perfect growth.

SWEET POTATO STANDARDIZATION

One of the most important features of the 1919 fresh fruit standardization law is the provision which includes vegetables. By the specific mention of sweet potatoes the legislature has clearly signified its recognition of the need for the standardizing of the pack of this crop.

Certainly one need not look far in the markets today to find the reason for applying the principles of standardization to the packing of sweet po-

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tatoes. The great variation in size and shape in the average field makes this crop peculiarly adaptable to the purpose of any unscrupulous packer. When prepared for market in lug boxes the potatoes of superior quality and size are made to sell the inferior stock by the simple expedient of placing the larger potatoes around the outer and more exposed portions of the box, filling in with stuff which in many cases is entirely unfit for table use. This practice is bad for the sweet potato industry. Moreover it is bad, decidedly bad, for the consumer, for he is thereby made to pay the top price for the poor potatoes with which the interior of the box is filled. This practice is defined under the standardization law as a "deceptive pack" and the packer is liable for such a pack.

Sweet potato growers are naturally concerned over this situation. A large percentage of the growers desire to standardize their output, realizing that it is by this means alone that they can secure and hold satisfied customers. With the present method of packing declared deceptive, however, there are but two alternatives for the producer. Either he must grade his sweet potatoes or he must dispose of them unpacked as field run.

CONSERVING AND DEVELOPING WATER

Permanent organization of the San Joaquin Valley Water Conservation and Development Association was perfected at a recent meeting in Tulare, following a water conference held in the same city at the call of the Tulare board of trade.

Permanent officers were elected and a constitution and by-laws adopted, the purpose of the organization being stated "to consider all water problems affecting the counties of Kern, Kings, Tulare, Fresno, Madera, Merced, Stanislaus, Tuolumne, Mariposa, Calaveras and San Joaquin, to work harmoniously for the adoption and carrying out of a comprehensive plan for irrigation, drainage and reclamation and the conservation of the water supply of the entire San Joaquin Valley."

Membership is open to irrigation districts, ditch companies, water users associations, power companies, commercial organizations, boards of supervisors and city trustees and other corporations and individuals interested in water conservation. Organizations are to pay a yearly due of $25 and individuals $5. A large membership was signed at the meeting.

Resolutions were adopted opposing the referendum on Senate Bill 493, calling for amendments to existing laws so that comprehensive irrigation projects may not be interfered with by smaller proposals within the same territory, and supporting the fight of the Kern County farm bureau against Miller & Lux to prevent the land corporation from killing the extensive system mapped out for irrigating Kern County.

Permanent officers elected are William Glass, Fresno, president; John T. Crowe, Tulare, secretary; National Bank of Visalia, treasurer. County vice-presidents and alternates in the order named are: Tulare, W. B. Kiggins, Lindsay; C. H. Slaughter, Tulare; H. T. Miller, Kern; W. C. Hannawalt, King; W. A. Long, alternate to be named later. Fresno, John Fairweather, M. B. Harris; Madera, J. F. Griffith, Craig Cunningham; Stanislaus, Allen Talbot, L. L. Dennett; San Joaquin, Al Ferguson, E. R. Weeks, Jr. Counties not represented to name their their representatives in 30 days. The vice-presidents will have charge of the organization campaigns in their respective districts and keep each other and the general organization advised of developments in their sections of the valley.

Representatives of most of the commercial organizations, irrigation districts and water users associations of the valley were present and enthusiastic applause from the floor greeted every mention of greater unification of effort for the conservation and development of the natural resources of the valley. Annual meetings will be held at Fresno, with quarterly meetings at points to be designated by the president.

Rare Sugar Found in Honey

Although known to occur in various forms, even perhaps as one of the constituents of the manna of Scripture, melezitose is one of the rarest sugars. Minute quantities have been available to scientists for many years, but the supply has never been sufficient to permit of extensive experimentation. Now, by the aid of some Pennsylvania bees, many of which lost their lives, the United States department of agriculture has several kilograms of this rare substance, extracted and purified in the bureau of chemistry.

The bees in certain sections of Pennsylvania were storing up honey that crystallized, with the result that in the following winter seasons the bees were not able to digest it, and starved. The crystallized substance in the honey was found to be melezitose, which derives its name from melez, the French name for the larch tree on which it was originally discovered in the form of honeydew. It also occurs in a sugary incrustation, or manna, on a leguminous tree in Persia and adjoining countries. Recently it has been found by the bureau of chemistry in a similar product on the Douglas fir in British Columbia. And now it has turned up in Pennsylvania, stored away in the honeycomb in numerous hives. In this instance the following origin of the substance has been worked out:

The scrub pine, and rarely other species of pine, are subject to attack by a plant louse and by a scale insect. In the course of their life activities these insects produce a honeydew which is rich in melezitose. In dry summers, after the white clover flowers have ceased to yield honey, the bees turn to this honeydew and collect it; but it crystallizes as fast as they store it away. This occurred in 1917 and 1918, and considerable losses were suffered by beekeepers. In 1919 the weather was so moist during July that no melezitose was gathered by the bees at all. But it probably will be collected in future whenever the summer is dry, and the honey of central Pennsylvania may afford a permanent source of sugar previously so rare as to be only imperfectly known. The bureau of chemistry extracted considerable quantities from the honey of 1917 and 1918 and is making extensive experiments with it. Rare as it has always been there is a definite demand for melezitose for use in scientific laboratories. It can be distinguished from other sugars by certain peculiarities of crystallization observable with the polarizing microscope.

STORE MILO

That many of the most important and productive sections of California where milo and Egyptian corn is grown will have extensive warehousing facilities for taking care of these two crops during 1920 is the present indication from advices reaching officials of the Alfalfa Growers of California.

Growers of corn and milo have felt for years the necessity for warehouses for the proper care of their crops after harvesting and during the last few months definite action has been taken by growers in several sections to establish permanent warehouses in such a way and in such localities as will benefit the greatest number of growers in each district.

Consumption of milo and corn is practically constant. On the other hand production is seasonal, and therefore it is highly important to have storage facilities that will permit the maintenance of sufficient supply. This will tend greatly to eliminate the middleman's profit and stop speculation in these two crops.

SMALL THRESHING RIGS RECOMMENDED

Many small groups of Ohio farmers this year have purchased small grain separators capable of being run by the ordinary tractor. Sometimes the tractor has been purchased also. The plan has worked out excellently, according to R. F. Taber, farm management specialist of the college of agriculture. The men get their threshing done in season, less help is required, and so the work is practically all done by exchange of labor.

On September 30, 1919, there were operating in the United States 3,830 farm loan associations. The total mortgage loans made by the federal land banks through these associations to September 30, 1919, to 100,412 farmer borrowers, amounted to $261,175,346. During September 7,485 applications were received asking for $25,491,081. During the same period 5,174 loans were approved, amounting to $15,816,179. Altogether 219,205 farmers have applied for loans under this system, in the aggregate amount of $605,575,801.

Save money on fertilizers this year by utilizing the inert fertilizing elements in your soil, with an application of AGRI GYPSUM. Practically all soils abound in valuable elements that are not available as plant foods until a chemical action takes place through the application of AGRI GYPSUM — (Calcium and Sulphur). The sulphur in the Gypsum is a fertilizer. Gypsum loosens the soil when it is inclined to pack and rounds out its culture and preparation. Its application is apparent in the resulting growth.

Agri GYPSUM

AGRI GYPSUM is a specific for black alkali. It turns the **harmful** sodium carbonate into **harmless** calcium carbonate. Experiments have been made where the surface of the ground was covered with a thick crust of alkali. Grass would not grow on it. After treatment with Gypsum bountiful crops of wheat, barley and other grains have been produced. This is a matter of official record.

Stable manure retains its ammonia when AGRI GYPSUM is applied. This also prevents the disagreeable odor of escaping ammonia gases, harmful to the eyes of man and beast. It will pay you to keep AGRI GYPSUM on hand where you can apply a few handfuls occasionally to the manure heap.

Alfalfa is one of the largest consumers of sulphur—AGRI GYPSUM contains more than 40 per cent of this needed element and supplies more vigorous growth at less cost than any other fertilizer compound.

Call for AGRI GYPSUM. It is made by the largest producers of Gypsum in the world, a company that grinds it fine so that it goes farther, acts more quickly and most thoroughly, giving the best results. The analysis will quickly convince you as to the efficiency of the material as a crop producer.

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P-8

A Four Story Poultry Show

By Jean A. Koethen

THE annual fanciers' show of the Los Angeles Poultry Association, which closed last Saturday night after a very successful one week's showing, impressed me as the best show that has been held in Los Angeles for several years. This was not altogether on account of the larger number of entries, which totaled about 1,300 exclusive of pigeons, nor because of the generally large classes and the fine quality of the birds. The arrangement of the coops in the four stories and balcony of the old Express building on Hill Street and the fact that the building was comfortably warm had a good deal to do with the success of the undertaking. Some of the shows that have been put on in the last five years were in buildings so cold that the most enthusiastic "fan" found his or her (more frequently "her," perhaps) enthusiasm reach the zero point long before the end of Bantam Alley was reached. This year everybody was comfortable and had time to visit with the feathered beauties, and it was noticeable that there was not a sick bird anywhere. Let us hope the managers of future shows will learn a lesson from this one held in a really comfortable building.

Then that climb from story to story was delightful. Anticipation had always a chance to work. There was something new and interesting on each floor, and even if one went up and down, as I did, more than once, the novelty did not wear off. Of course, one did not need to climb. There was an elevator with a charming driver, ready to take you anywhere at any time, but using the elevator spoiled the gradual approach and gave one no chance to guess from the sounds just what breed was in control of that particular floor. To be sure, there were some folks who did not fully understand at first that this was a progressive show. A rosy cheeked woman from Minnesota stopped me in Barred Rock alley. "This is a bum show," she challenged me. "I wouldn't give ten cents for it. I've been to lots of shows back in Minnesota but I never saw anything like this." Ten minutes later I met her upstairs among the Reds. "Say," she ejaculated, "I didn't know about this. I thought that one floor was all there was, and was just going home when the man at the door told me I hadn't seen it all."

Seen it all? I should say not. The Barred Rocks and White Wyandottes on the ground floor were just the beginning. Fine birds, too, but when you pay for a perfectly good show you don't want to be cut off short with two breeds. The balcony was devoted to pigeons. Then on the second floor came Rhode Island Reds and Whites, some more Wyandottes, White Rocks, Light Brahmas and scattering exhibits. Another flight up came the high flyers of the poultry yard, Leghorns, Anconas and Minorcas, with a nice line of Buff Orpingtons to ballast them. Approaching the fourth floor one easily recognized the falsetto cackle of bantams and the deep voices of turkeys and geese with that intermingling background which could be nothing but the quacking of ducks. Whoever arranged the coops in this artistic and strictly scientific manner was a genius.

Reds Predominate

Shall we never again have a show in which Rhode Island Reds do not predominate? There was a time when we always expected to see Barred Rock alley the longest, but for several years Reds have kept the lead. This year they led again with 214 birds besides a few in the selling class on the fourth floor. Barred Rocks were a good second with 127 birds and Anconas third with 115 birds. No other breed approached these three. There were fifty-odd Andalusians, and about the same number of Black Minorcas, with White Leghorns, White Wyandottes and White Rocks all running in the forties. Dark Cornish, Rhode Island Whites, Buff Orpingtons and Light Brahmas were a step lower in the numerical scale, and there was a long list of scattering varieties; Sicilian Buttercups, Silver Campines, Speckled Sussex, Partridge Orpingtons, which were a very fine class, White Crested Black Polish, Silver Laced Wyandottes, White Minorcas, Buff Rocks and Buff Minorcas, and last, but not least, the few Java Jungle fowl and Silkies which everybody admires but no one cares to breed.

New Bantams

The number of bantam varieties, on the contrary, is always on the increase. Not only are these little creatures good mothers and good layers of small eggs, but they are pretty pets, and breeding a bantam variety from one full size is a fascinating venture. This year the bantam list includes Silver Duckwing Game, Black Breasted Red Game, Barred Rock, Red Pyle Game, Malay Game, Silver Seabright, Black, White and Buff Cochin, Black Tailed Japanese, Mille de Fleur, Speckled Sussex, Partridge Rock and Black Minorca. The Mille de Fleur is a parti-colored little bird, evidently of French origin. The Barred Rock bantams, which I do not remember seeing before, are very attractive little creatures and the little pullets look as if they might lay a surprising number of eggs.

The exhibiting of eggs and awarding of prizes for the best exhibits is certainly a long step in the right direction. The eggs in the neat boxes on the second floor attracted a good deal of attention, and if they were not laid by Anconas they might have been. If the other specialty clubs had been as zealous as the Ancona Club in advertising the merits of their stock as producers the walls of that building would have been interesting reading. "Want Eggs? Get Anconas." If you believe in your birds let folks know about them.

Turkeys and Ducks

There were nearly 40 bronze turkeys on the top floor, magnificent birds. Everybody admired them. Duck alley was longer than usual, with some fine specimens of White and Penciled Runners and the Buff Duck, which is as yet but little known.

The $50 in gold offered for the best display of any one variety of standard fowl went to the Hocking Poultry Farm, Los Angeles. The $25 offered for the best exhibit of fowls from outside Los Angeles County went to Mrs. Ben Davis, Jr., Cucamonga.

On Wednesday evening the members of the association held their annual banquet at Christopher's. The other nights addresses on poultry husbandry were given on the first floor.

The judges were James Tucker, W. M. Coats and W. S. Russell.

More cash prizes and silver cups were offered at this show than have ever before been offered at a show on the Pacific Coast. Twenty-two cups were awarded and 34 cash prizes given.

Poultry Queries

Conducted by J. A. Koethen

Cost of Egg Production

I have been much interested in the different egg laying contests, but have never seen the relative cost of production by the different breeds given. Or, in other words, do the small breeds return a greater profit on feed consumed?—Subscriber, Rosamond.

The report of the All-Northwest egg laying contest for January, 1919, states that for that month the feed cost for a dozen eggs was 18.9 cents for Leghorns, 25.8 cents for R. I. Reds, 24.7 cents for R. I. Whites, 23 cents for Barred Rocks, 22.4 cents for Wyandottes, 31.55 cents for Black Minorcas. The average feed cost per bird for the month was 29.3 cents for Leghorns, 35.3 for R. I. Whites, 31.8 for Wyandottes, 31.7 for Barred Rocks, 31.4 for R. I. Reds, 31.5 for Minorcas, 30.5 for miscellaneous breeds. Average return above feed cost was 63.6 cents for Leghorns, 50.1 cents for R. I. Whites, 53.1 for Wyandottes, 50.7 for Barred Rocks, 41.5 for R. I. Reds, and 28.4 for Black Minorcas. These

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figures are for a single month and for only a few breeds but they give an idea of relative cost of production. Unquestionably Mediterraneans in general and White Leghorns in particular pay a greater profit on feed consumed than other breeds. This is why every commercial egg farm is stocked with White Leghorns.

Feed for Pullets

I have 18 Ancona pullets nine months old. In October they laid 357 eggs; in November 239. For the past two weeks I have not been able to make them eat. A good many go to roost with empty crops. They are running on green alfalfa, also have a dry mash before them all the time and a quart and a half of scratch feed at night and about a pint of scratch in the morning; also feed sprouted oats. Nothing I give seems to tempt them to eat. Will you kindly tell me what is wrong?—H. B. M.

Two quarts of scratch feed a day for 18 pullets is a pretty good allowance, especially for hens that are running on green range. If you will let them fast for a couple of days, giving only what they pick up on range, then let them have the dry mash again but cut down the scratch grain to a pint a day, you will find their appetites returning. Their egg record is splendid, but they have evidently had a little more feed than they need. The subscriber who sent the above question inclosed $1 with request to send Mrs. Koethen's "Poultry for Profit." The envelope with its post mark was destroyed before it was noticed that no post office address was given in letter. The book is wrapped ready for mailing as soon as subscriber sends his address.

Liver Trouble

I purchased from the California Cultivator your book "Poultry for Profit" which I have found very useful; however, I would like to have your advice regarding some sick chickens. I had one chicken die the other day. The comb was quite dark and upon opening I found quite a large liver which was spotted, and by referring to liver diseases on page 173 of your book I find, under symptoms "brownish yellow droppings," and by further investigation I find that some of my flock show quite soft droppings with yellow streaks, but the combs do not give any indication of sickness. I note that you recommend mixing dandelion tea in the mash. Will you kindly advise if the soft droppings with yellow streaks indicates liver disease and also please let me know what quantity of dandelion tea should be used, and whether an overdose will have a bad effect.—Subscriber, Oroville.

See answer to L. R. M. regarding spotted liver. I think you can buy dandelion in a little package similar to that in which catnip is sold. Make a tea with a pinch of it, as you would catnip tea, and mix with the dry mash, using about a pint of tea for a dozen hens. By a pint of tea I mean a pint of the liquid in which the pinch of dandelion is steeped. Your main dependence must be not upon medicine but upon diet. You do not mention the ration. If you are using the regular prepared laying mash it would be well to add about 50 per cent bran. Cut down the amount of scratch grain to a pint a day for a dozen hens and make them scratch for every bit of it. There is no medicine like green feed for a bad liver. Give the birds all you can induce them to eat. If you cut down the grain ration they will eat more green, and this is what they need.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, December 1, 1919.—Report for the week ending November 28.

In the fourth week of the laying contest at Storrs, two Connecticut pens were in first and second place, two Massachusetts pens tied for third place and a Connecticut pen was fourth. The two pens of Leghorns entered by George Phillips from Seymour and Merrythought Farm from Columbia headed the list with 49 and 44 eggs respectively.

It was suggested that among other treatments for hens with colds the use of Epsom salts at the rate of one pound to one and a half pounds for each of the 100 hens was one of the best. In addition to this, however, the management of the contest is now using powdered sulphur. Like the salts, sulphur possesses the distinct advantage of being easy to administer to a large number of birds. The usual plan is to use the ordinary mash and add an amount of powdered sulphur equal to ten per cent of its weight; in other words, one should add ten pounds of sulphur to each 100 pound bag of mash. Feed this to the affected birds for four or five days and then go back to the regular rations which contain no sulphur. After a week or so resume the use of the sulphur mash for a second period of four or five days and then drop it again. Under this treatment hens with colds if they have been otherwise properly managed should show a decided improvement.

The three best pens in each of the principal varieties are as follows:

Plymouth Rocks

Merritt M. Clark (Barred), 87; Ingleside Farm (Barred), 75; S. Bradford Allyn (White), 74.

White Wyandottes

Merrythought Farm, 129; Herbert L. Warren, 102; Harry D. Simmons, 94.

Rhode Island Reds

Pinecrest Orchards, 177; Jacob E. Jansen, 122; Charles H. Lane, 120.

White Leghorns

Merrythought Farm, 151; George Phillips, 139; S. G. McLean, 123.

Miscellaneous

H. P. Cloyes (Buff Wyandottes), 134; A. L. Anderson (R. I. Whites), 118; W. H. Bassett, (Russian Orloffs), 38.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

The California Farm Bureau egg laying contest gives out the following report for the week ending November 29:

Highest Pens for Week:

W. J. Neff, 69 eggs; C. K. Hale, 65 eggs; T. Stallings, 65 eggs.

Highest Pens for Week:

Warrren Wood 38 eggs; W. J. Neff, 34 eggs; S. L. Gibson, 33 eggs; C. K. Hale, 33 eggs.

Highest Individuals to Date:

D. B. Wells, Petaluma, hen 16, 11 eggs.

Highest Individuals for Week:

S. L. Gibson, hen 222, six eggs; S. L. Gibson, hen 332, six eggs; Hollis Peck, hen 272, six eggs; E. Crewdson, hen 322, six eggs; D. B. Walls, Petaluma, hen 16, six eggs; E. Crewdson, hen 378, six eggs.

All hens named are White Leghorns and all contestants here named, except Mr. Walls, are of Santa Cruz.

Report for week ending December 7, 1919:

Leading Pens to Date

W. J. Neff, Santa Cruz, White Leghorns, 111 eggs.

W. Wood, Santa Cruz, White Leghorns, 97 eggs.

C. K. Hale, Santa Cruz, White Leghorns, 91 eggs.

S. L. Gibson, Santa Cruz, White Leghorns, 91 eggs.

C. T. Brown, Santa Cruz, White Leghorns, 90 eggs.

Leading Individuals to Date

D. B. Walls, Petaluma, White Leghorn Hen No. 16, 17 eggs.

D. B. Walls, Petaluma, White Leghorn Hen No. 18, 16 eggs.

Leading Pens for Week

W. T. Neff, Santa Cruz, White Leghorns, 42 eggs.

D. B. Walls, Petaluma, White Leghorns, 34 eggs.

S. L. Gibson, Santa Cruz, White Leghorns, 32 eggs.

W. Wood, Santa Cruz, White Leghorns, 32 eggs.

High Hens for Week

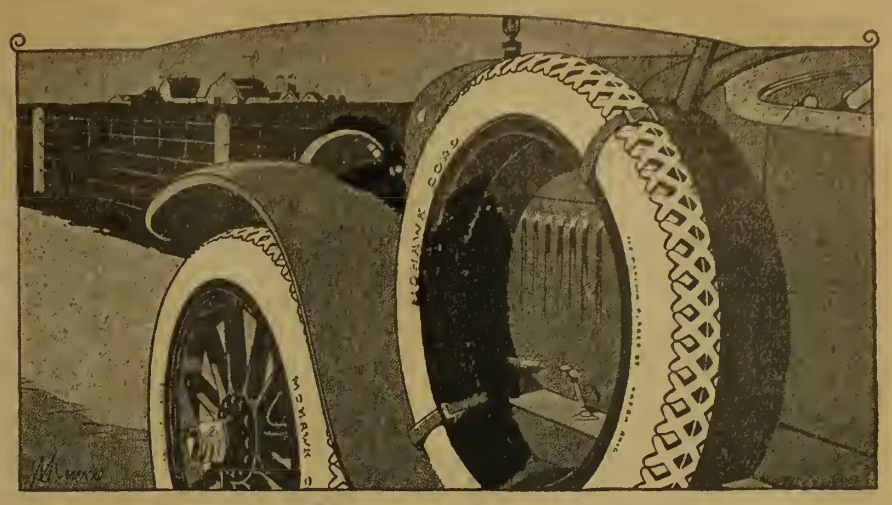
D. B. Walls, Petaluma, White Leghorn Hen No. 16, 6 eggs.

D. B. Walls, Petaluma, White Leghorn Hen No. 18, 6 eggs.

Bellow Bros., Lakeside, White Leghorn Hen No. 30, 6 eggs.

W. J. Neff, Santa Cruz, White Leghorn Hen No. 285, 6 eggs.

Chas. Lehman, Santa Cruz, White Leghorn Hen No. 363, 6 eggs.



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For Sale—French Prune, 4x6 and 3x4, on almond and peach root; some Myrobolin root. Write for prices. W. M. Burton, Box 43, Porterville, California.

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For Sale—3,000 select orange trees. Also 3,000 lemon trees; first class trees; 20,000 seedbed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—3,500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

RABBITS

Beat the Butcher—Raise your own rabbit meat and know it is healthy. Our magazine tells you how. One year for 12 one-cent stamps. After January 1st 25c so get it now. SANDERSON, Eagle Rock, California. Dept. CC.

Pedigreed Flemish Giants; also utility stock. No fancy prices. Maud Beechling, 1578 W. 46th Street, Los Angeles.

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An outstanding son of ONWARD 4th, a son of the famous "EPOCHAL." His dam, Escalon Fashion Princess, one of the best sows ever owned by A. B. Humphrey, was a Grand Champion and sold for $500.00.

CASTLEVIEW RANCH,
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Home of big boned, good footed Berkshires.

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We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son, Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

BARON DUKE 201ST PIGS
are in demand. They have consistently won during 1919 the highest honors in the show ring. Baron Duke 201st is a Grand National Champion. He is the sire of champions. His 15 months old son was Grand Champion at Sacramento and San Francisco. The San Francisco judge said he was the best boar of his age that he had ever seen. I have 3 of his spring boar pigs for sale. SANDERCOCK LAND COMPANY, 401 Market Street, San Francisco. In charge of Natomas Land Sales.

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are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. Bred and open gilts from most popular strains for sale now.

GEO. A. STINGLE, El Monte, California

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

Solano Berkshires. Choice stock for sale, service boars of varying ages, bred gilts, unrelated pairs and trios. Reasonable prices. Write for information. R. C. Gruhlke, Dixon, Solano County, California.

Real Good Berkshires, cholera immune. Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

"May Rose" Duroc boars have been first and champions at the California state fair and L. A. shows, where the competition was the hottest. We have a few boar pigs sired by them out of our great "May Rose" sows ready for sale. Grab one while they last. Also booking limited number of services for approved sows for our champion boar "May Rose King." Take a look at them. Seeing is believing. Elliott-Brant Rancho, Owensmouth, California.

Weaned Pigs For Sale—Pure bred Duroc-Jersey. Sired by Long Model Defender, a first prize boar and son of Great Model, the most popular boar on the Pacific Coast and Defender Ohio Maid, my wonderful big sow and the centre of attraction at this fall's fairs. No fancy prices. Green Canyon Ranch, Fallbrook, California.

Duroc-Jersey Swine for Sale. Anything you want. Spring boars and gilts from 800 pounds. O. C. K. breeding. Bred and open gilts, same blood lines, 12 great brood sows. The best breeders herd on the coast. Jersey Queen Farm, San Jose, California.

Duroc-Jersey Pigs, the big kind, have 3 top boar and sow weanlings, from big sows, litter 11, Sired by Jr. Champion Golden Cherry 5th. Fit for the best herds. Improve your blood. First check for $25 gets choice, guaranteed. R. A. Chapman, 413 Owl Block, San Diego, California.

Duroc-Jerseys at Ireland—Sows sired by Cherry Volunteer 2nd and Reformer, bred to Ireland Joe Orion at public sale January 30, 1920. Write for Catalogue, 1219 Brockman Bldg., Los Angeles, California.

I Will Offer a dozen first class young Duroc sows bred for spring litters to my crack yearling boar Nutmeg Gana 292547. Worth investigating. L. R. Hitchcock, Van Nuys, California.

Am Over Stocked and will sell at little better than pork prices 50 head of very fine registered Duroc-Jersey spring gilts. First come first choice. Green Canyon Ranch, Fallbrook, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

For Sale—One Yearling Boar, Duroc-Jersey. Wonder Model No. 265707. Big Type, satisfaction guaranteed. Address A. R. Bardrick, P. O. Box No. 5, Oceano, California.

Weanlings—Gilts open or bred to a son of Great Wonder I Am. Service boars. Derryfield Farm, Capital National Bank Building, Sacramento, California.

Pure Bred Duroc-Jersey pigs of both sexes. Also one yearling boar, best blood lines in state. Address: J. A. Culp, R. F. D. No. 1, Fillmore, California.

Durocs — Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

SWEETWATER DUROCS
The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker

For High Class Durocs write Leest & Mounier, Van Nuys. Blood of Orion King Gano.

POLAND-CHINAS

Wondergerst, California's leading Poland China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland Chinas, Tipton, California.

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Big Type Poland China open and bred gilts sired by A. Price a 1,000 lb. boar. A few bred sows to farrow in December. Address: W. S. Adams, Gridley, California.

For Sale—Two large type yearling Poland China boars. One sired by Big Bone Bob. Other by Ursus Jr. Both big, smooth, growthy boars. Write Eugene Miner, R 2 Box 105, Lodi, California.

Big Type Poland Chinas—900 lb. grand champion El Profito heads herd—line bred Big Timm. Viola L. Renwick, Santa Barbara, California.

Poland-Chinas—Registered and well developed. Ranch adjoins town. Moramarco Bros., Van Nuys, California.

Pure Bred Poland-China pigs for sale J. R. Carhart, Fullerton, California.

WANTED

Wanted—Good experienced poultryman must understand hatching and raising chicks, Good wages and permanent position to right party. Universal Poultry Farm, E. Kiss, Prop. Lankershim Blvd. cor. Second Street, Lankershim, California.

Wanted—Budded citrus trees in exchange for 80 acres Coachella Valley date land one-fourth mile from R. R. station. Might consider walnuts or other deciduous trees. Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena.

Wanted—Layne & Bowler, Byron Jackson or Johnston deep well pump, capacity 1,000 to 1,500 gallons per minute. Prefer direct connected with electric motor. Geo. A. Smith, Corcoran, California.

Wanted—Two carloads seed potatoes—White Rose, Irish Cobbler, Triumph or Red Rose. Submit samples together with prices. Tucson Seed & Floral Company, Tucson, Arizona.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted—Everybody to read SPECIAL NOTICE in Cultivator of December 6th, 1919. Page 770 under heading—Cattle.

Wanted to hear from owner of farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minn.

TURKEYS

Turkeys For Sale—Mammoth Bronze Toms. Gold Bank Strain, nothing better in the world. 25 of these big young gobblers at from $15.00 to $25.00 each. Weigh now from 20 to 28 lbs. May hatched. All sired by Big Bill our undefeated Tom. Among these are winning toms at State Fair, Oakdale and Oakland where we won sweepstakes and best display. The color and size of these toms cannot be excelled anywhere, at any price. This ad appears but once, so get busy. State Fair winnings 9 prizes on 8 entries; Oakdale winnings 8 prizes on 8 entries; Oakland winnings 11 prizes on 12 entries, 2 prizes on 28 birds. Can you beat it? D. T. Willand, Box 21, Valley Home, Stanislaus County, California.

For Sale: Turkey Eggs, from Wild-Domestic crosses. Raise more turkeys. Introduce wild blood into your flock. Get hardy, vigorous poults. Mammoth Bronze eggs also. Write for circular with directions how to raise 90 per cent of all you hatch. Orders booked now for future delivery. The Wild-Domestic Turkey Home, R. D. Box 26-A, Hemet, California.

For Sale—Turkey Breeders Take Notice Thoroughbred Mammoth Bronze, Bourbon Eastern Toms. You run no risk. Every bird guaranteed to be as represented. If not, return at once. C. O. D. R. M. Dodge, R. D. 2, Bakersfield, California.

Mammoth Bronze Turkeys—Order now for immediate or future delivery. Choice young stock from prize winners. Prices reasonable. A. W. Ganger, Dos Palos, California.

Turkey Eggs—Orders booked now and shipped in laying season. Bronze, also Mammoth Bronze. Robinson Turkey Ranch, San Dimas, California. Covina Phone 902.

For Sale—White Holland turkeys. S. C. Rhode Island Red cockerels, Guinea roosters. One Golden Seabright cockerel. Send stamp. E. A. McKinley, R. F. D. Box 91, Ukiah, California.

Mammoth Bronze Turkeys, Embden Geese and Collie Dogs for herding purposes. John G. Mee, St. Helena, California.

Farm Raised Mammoth Bronze Turkeys Young toms, 20 to 25 pounds. H. D. Ulery, Inyokern, California.

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PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

POULTRY

OUR SPECIALTY
GUARANTEED TRAP NESTED
S. C. WHITE LEGHORNS
The male is half the flock, therefore he should be of the best breeding. We are offering 500 breeding cockerels; 350 from 200 egg hens or better, the other 150 the pick of all our regular pens. Prices range from $5.00 each and up. Discount on large quantities. Shipment to be made October 1st. No fall chix for sale. ENGLAND'S EGG RANCH, the home of "ACTUALLY" trap nested S. C. White Leghorns every day in the year since 1912. Box B-337, Inglewood, California

We Are Specialists in production of high grade S. C. White Leghorn Baby Chicks. Thoroughbred heavy laying strain of America's choicest Leghorns fill our pens, and my personal attention is given to all details, assured each customer of highest grade stock. All baby chicks guaranteed and only healthy baby chicks shipped; if not satisfactory on arrival your money returned. Catalogue free. F. C. Rhode, Vineburg Hatchery & Poultry Yards, Vineburg, California.

Ever Increasing Trade finds us better prepared than ever before to take care of our Day Old Chick business. New concrete building—100 Jubilee machines hatching eight breeds. We sell Hyde's W. L. Cockerels from trapnested stock. Great stuff—shipped on approval; $5.00 to $7.50. Some Buff Orpingtons also. Interesting folder ready. B. W. Archibald, Soquel, Santa Cruz County, California.

W. M. Marquam's Heavy Laying S. C. Reds and S. C. White Leghorns. Vigorous Red cockerels directly descended from winners at New York and Los Angeles, $10. Leghorn cockerels of good type and color from 223 egg trapnested hen mated to son of 279 egg hen, $10. I ship C. O. D. on receipt of $2.00. W. M. Marquam, Bishop, California.

White Leghorns, chix and hatching eggs also a few cockerels from Curtis' heavy layers. We spare no expense to produce heavy layers with strong vitality. Any chick is good enough for some but the progressive poultryman demands the best. Spring orders are being booked now. All our chicks are hatched from eggs laid in our own yards. O. B. Curtis and Son Gardena, California. Route 1, Box 29.

Mahajo Farm, P. O. Box 597, Sacramento, California, offers highest class, standard bred, breeding stock in White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Plymouth Rocks. Prices: Leghorns, males $5.00; females $3.00; Rocks, males $7.50; females $5.00 and upwards.

Thoroughbred S. C. White Leghorn Chicks—In 100 and 1000 lots from our Hoganized and Trapnested Stock. Order now for spring delivery. Inventors and Distributors of "Forbros" Separator and Trapnest combined. Write for circular. Forster Brothers, 2918 Otis Street, Berkeley California

Two 600 Chick Hot Water Brooders, divided four sections, each section 9 sq. ft. Iron pipe heater, copper boiler. All crated to ship at $35. One 224 Petaluma good order $20. Two Schofield incubators 300 egg $30. We want to buy Pioneer incubators, all sizes. Pioneer Hatchery, 320 S. Spring Street, Los Angeles.

Finest Hatchery in the World—Chicks, White Leghorns, Rhode Island Reds. Settings, 100's, 1000's—hatched right in $60,000 Brick and Concrete Hatchery from our Quality Heavy Layers. Reasonable prices. PEBBLESIDE POULTRY FARM, Sunnyvale, California.

Wanted—Three or four dozen good utility Black Minorca pullets or hens not over two years old. Must be pure bred. Want large strain and good layers. Address with particulars Mulford Winsor, Yuma, Arizona.

Baby Chicks—Order now for 1920 and get what you want when you want them. White and Brown Leghorns, R. I. Reds, Barred Rocks. Safe arrival guaranteed. Write for free circular. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto

Chicks—Eggs—Hoganized White Leghorn, Buff and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas, Blue Andalusians. Free circular. McDonald Poultry Ranch, Route 1, Box 246, San Jose, California.

White Leghorn Baby Chix—Heavy laying, hoganized stock. March $15.00 per 100; April and May $13.50 per 100. Safe arrival of strong live chix guaranteed. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Breeding Cockerels—Barred and White Rocks, Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Day old chicks in season. Enoch Crews, Seabright, California.

For Sale—Buff Leghorn cockerels and cock birds. A few hens and pullets. Mated if desired. The best stock in the West. W. L. Bartholomew, Chino, California

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Thoroughbred Barred P. Rocks—egg records, 190-210 per hen. Fertile eggs for hatching $2.50 per 15. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

"Eastman's Bred-to-Lay," Hoganized and trapnested Barred Plymouth Rocks, Eggs, Cockerels. JANUARY CHICKS. Fairmead Poultry Farm, Fairmead, California.

Blue Andalusian Cockerels—There is no better BLUES to be had. From heavy laying strain. Get your orders in early. Prices reasonable. J. R. Huddleston, 342 Edgeware Road, Los Angeles, California.

White Wyandotte Cockerels, pure bred, good laying strain, early March hatch, order now. D. M. Light, Patterson, California.

For Sale—Thoroughbred S. C. R. I. Red cockerels. Extra fine stock. Extras $7.50, Choice $5.00. L. M. Kniffen, Wasco, California.

Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

Pit Games the Kind That Win. Cocks, Stags, Hens and Pullets. Prices reasonable. R. H. Crane, Route 3, Santa Rosa

Wanted—One Sicilian Buttercup cockerel. May Tolle, Orland, California.

POULTRY

BROODERS
We are offering to the California public, the Reliable Blue Flame Brooder. It has a capacity of one thousand chicks. Burns one gallon of common kerosene oil in twenty-four hours, without gas, soot or odor. The most perfect brooding device yet placed on the market. In use, and indorsed by the Oregon Agricultural College, and the Western Washington Experiment Station, and two hundred other satisfied users in, and around Seattle. We are western distributors. Have some good territory open. Write for circular. Queen Hatchery, 89 Pike Street, Seattle, Washington.

Quality Barred Plymouth Rocks and White Leghorns—A Western strain that won in the Utility and Exhibition world's competition. None are better bred. Guaranteed hatching eggs and sturdy Barred Rock breeding males for sale. Free circular. GOLDEN RULE POULTRY FARM, Porterville, California, Care of White River Stage.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

MISCELLANEOUS

Insyde Tires Inner Armor for automobile tires. Doubles mileage, prevents punctures and blowouts. Agents wanted. Liberal profits. Details free. American Accessories Co., Department 102, Cincinnati, Ohio.

Leaf Tobacco—We are growers of Tennessee Red Leaf Chewing and Smoking, aged in bulk, limited supply, order quick. 3 lbs., $1.80; 6 lbs., $3.30; 10 lbs., $5; Postpaid. Address Murphy Company, Martin, Tennessee. Reference, Peoples Bank

Tobacco, Selected Natural Red Leaf; grower to consumer. Ideal for smoking and chewing. 60c pound, ten pounds over 55c pound POSTPAID. Reference Bank Sharon, C. D. MITCHELL, Sharon, Tennessee.

For Sale—Lima bean splits from cleaning 46 sacks, 3,230 lbs., and hand pickings 36 sacks, 2,444 lbs. for stock feed. L. Tawa, R. D. No. 2, Box 213, Los Angeles or phone Boyle 3381.

For Sale: Rare books and papers on silk culture. Choice mulberry seeds from Europe. Drawings for the filature. Mrs. S. R. Bellamy, 256 5th Ave., San Francisco, California.

Beautiful Mahogany and Oak Cabinet Victrolas and 40 selections. Some Red Seal, $95. Taken in trade. Guaranteed like new. DEMMITT IMPLEMENT CO., upstairs, 120 N. Main, Los Angeles.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Beautiful Fumed Oak Victrola XIV and 90 selections, many Red Seal, all like new, $195. Why buy new and pay more when this can't be told from brand new? 2101 E. 1st, Los Angeles.

For Sale—Four one ton capacity heavy express wagons. One running gear for two ton lumber wagon. Los Angeles Railway, 764 Pacific Electric Bldg., Los Angeles, California.

Homemade Tobacco, lb. 50c postpaid. Flavoring free. Write for particulars. Randolph Tobacco Farm, Paduach, Kentucky.

I Have Cash Buyers for salable farms. Will deal with owners only. Give description, location and cash price. James P. White, New Franklin, Mo.

If You Want to sell or exchange your property write me. John J. Black, 116 St., Chippewa Falls, Wis.

MACHINERY

Tanks, Pumps, Windmills, Ranch Tools Rebuilt, guaranteed do same work as new, save half. No profiteering. Compare prices and material. Make new galv. tanks, 100 to 2000 gals., save 20 per cent. Why pay more? See bargain prices ads L. A. Sunday papers. DEMMITT CO., upstairs, 120 N. Main, Los Angeles.

For Sale: Single stage No. 3 B. J. vertical pump; 2 stage No. 4 B. J. vertical pump; 2 spreader bars, oil bowls, thrust bearings, line bearings; 2 12x18 cast pulleys; 12x52 wooden pulley, 100 feet 5⅝ inch casing, 35 ft. 4 inch casing, 15 H. P. G. E. vertical motor. R. C. Patton, R. D. No. 2, Orange, California.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

For Sale—Bargain in used Triplex Pump, practically good as new. 1800 G. P. M. belt drive, at one-third new price. H. E. Carse, Consulting Engineer, 704 Washington Building, Los Angeles.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California

For Sale—Caterpillar, two 75 horse power Holts, bargains. C. A. Myers, 1119 Haas Bldg., Los Angeles.

For Sale or Exchange. Holt Caterpillar Tractor, 60 H. P., $2,500. 922 W. 6th Street, Los Angeles.

HOGS

Registered Hampshires Cholera Immuned. Weanling pigs at very reasonable prices. Blood lines of Pat Maloy, Mose Messenger, Hawkeye Lad, Blythedate Jim and Lookout. Their dams sired by Draper Lad, Captain Kenton, Lookout Cherokee, Gold Mine and Director. Uneda Hampshire Swine Farm, Gardena, California.

Billiken Chester Whites—Entire herd for sale. Every animal listed and priced to move rapidly. Herd boars and sows. Young service boars. Seven fall litters of pigs ready for weaning, by four different sires. Write for special price list. C. B. Cunningham, Mills, California.

Prevent Apalling Fire Losses

By Arthur W. Ford

PREVENTION and suppression of pasture land fires is a vital topic for stockmen now in view of the numerous devastating fires that swept over thousands of acres of valuable pasture land during recent summer months.

Yearly the fire menace grows greater as new roads and highways invite hundreds of people into the hills. Annually the spread of agriculture and other industries encroaches farther onto land formerly used for grazing purposes. No new ranges remain to be opened up in California, with the result that every acre of available pasture must be conserved.

With these conditions existing it is no wonder that stockmen are paying more heed to the problem of fire protection. Since loss of pasture increases the cost of producing beef and since any increase in the cost of production ultimately strikes the consumer the matter becomes one in which everyone is interested.

The first big forward step toward answering the problem was taken in California during the past summer. From a state appropriation for fire protection work State Forester G. M. Homans allotted $3 500 to meet a like allotment from the federal government under the Weeks law agreement. Under this agreement funds are spent on watershed areas tributary to navigable streams.

Only $3 500 was available to California this year from the federal government. Owing to the great extent of the state's watersheds the fund was entirely inadequate to permit of a fire protection program that would cover the entire area. Equipment for patrolmen, tools for fire fighters, automobiles for patrol work, salaries of patrolmen and pay for fire fighters, all had to come from the limited fund.

More than 3 000.000 acres, including all of the foothill land outside national forests in nine counties, Shasta, Tehama, Butte, Yuba, Nevada, Placer, Eldorado, Amador and Calaveras, were, however, put under protection. The area was divided into four districts and four patrolmen were appointed. Each district was far too large to permit the close observation necessary. In one instance a patrolman found himself with six fires raging in his district and a seventh threatening to jump a river and enter his territory.

In the nine counties above mentioned 116 fires occurred in the 82 days of the fire season that remained after the appointment of the fire patrolmen on July 25. The state appropriation, under which the work was carried on, did not become available until July 22 so that work could not be started earlier.

A total of 129,729 acres was burned over. Of this 119.229 acres, according to reports on file in the office of the state forester, are classed as strictly foothill pasture land. Winter range for thousands of head of stock was destroyed. Stockmen have been hard pressed to find additional range for their herds and several have been forced to sell out.

The above loss is for only nine of the state's 58 counties. Many of the fires in these nine counties were held to small areas by the timely arrival of patrolmen. Several would have swept from the boothills to the national forests had they not been controlled through systematic fire fighting.

One way stockmen and others can further the work of fire protection is by supporting measures that will extend and make more complete fire patrol work under the Weeks law agreement. At the present time only $3,500 is available to California from the federal government under the Weeks law. A bill now before congress, however, would appropriate $500.000 for fire protection work. Favorable action on this measure will make it possible for California by appropriating a like amount to obtain about $10,000 annually from the federal government. This amount would permit the extension of the fire patrol work in California to other watersheds as well as making it possible to decrease the size of districts under each patrol.

The apalling losses resulting from fires in every section of California during the past summer have brought home the fact to all that most rigid measures must be employed if fire losses are to be abated. Now is the time to make plans for the next and subsequent fire seasons.

"Old Tom" of Fort McDowell

Few servants of Uncle Sam have worked as faithfully for 20 years through rain and shine as Old Tom, the army mule. He is now retired; stands dozing in the sun, dreaming, perhaps, of the years when the shrill bugle called both men and mules to "tenshun!" This old fellow hauled the market wagon that supplied all quarters from the commissary at Fort McDowell, Angel Island, California. Not only did he recognize the importance of the bugle calls, but his own—at every house in the post.

It is a hilly place; roads wind back and forth from the small wharf where the tugs land to the top of the hill, perhaps three quarters of a mile. No driver was necessary with him. After the load was on, the driver went on about his business. Sometimes the soldiers would pile on a huge load just to watch the old mule. He would slowly lean into the collar to test it. If it did not feel about right, he would shake his head and refuse to budge until they had lightened the load. Perhaps this would require two or three trials before Tom would start up the long grade.

Early in his labors some kind-hearted sergeant gave Tom a loaf of bread. That settled it; he stopped for the loaf every day and begged till he got it. This was his first stop after leaving the dock, and the men soon learned to have that loaf at hand in the morning. After eating his loaf, the old fellow went on up the grade. When wanting a rest, he simply cramped the wagon so he would not have to hold it, nor could it run back.

Tom knew a well trained mule had no business in front of an officer's quarters, so went to the back door—always. When the bugle call came for rations, he made for the barn at once.

From Fort McDowell Uncle Sam's fighting men have gone out to all quarters of the globe, and thousands of them will still remember faithful old Tom. At present he is 30 years old, fat and dignified, but willing to make friends, provided one speaks to him with kindness.

Kindness has been showered on the faithful animal all his life, which accounts for his long record of active service. On the island he has many loyal friends and has been given many sobriquets, such as "King of the Island," "Old Veteran," and "Sage of the Post." He certainly has earned a place of recognition for services rendered, and will be long remembered by the men.—Our Dumb Animals.

THE PORT OF MANILA

Manila is provided with three medium sized piers, one of which is used exclusively by the United States army, but a fourth pier is now building, 240 feet in width by 1,000 feet in length, and a fifth pier is under consideration. More than 1,000 linear feet of wharf has been constructed, together with numerous marginal cargo sheds, and it is expected to treble the length of the wharf during the next year.

FREE PAPER TO ITALY

A royal decree issued late in October admits newsprint paper in rolls free from custom duties until January 1, 1920. This is done on account of high prices and shortage of raw materials. If present conditions are not speedily relieved, it is believed the free term will be extended.

"My but it's cozy here!"

Pearl Oil gives instant heat when and where needed. No smoke, no odor; without dust or dirt. Oil consumed only when heat is needed.

Pearl Oil is refined and re-refined; pure and clean burning. Sold in bulk or five-gallon cans. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.

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(CALIFORNIA)

Stock Raising in WESTERN CANADA

is as profitable as grain growing. Successes as wonderful as those from growing wheat, oats, barley, and flax have been made in **raising Horses, Cattle, Sheep and Hogs.** Bright, sunny climate, nutritious grasses, good water, enormous fodder crops—these spell success to the farmer and stock raiser. And remember, you can **buy on easy terms**

Farm Land at $15 to $30 An Acre

—land equal to that which through many years has yielded from **20 to 45 bushels of wheat to the acre**—grazing land convenient to good grain farms at proportionately low prices. These lands have every rural convenience; good schools, churches, roads, telephones, etc., close to live towns and good markets.

If you want to get back to the farm, or to farm on a larger scale than is possible under your present conditions, **investigate what Western Canada has to offer you.**

For illustrated literature with maps and particulars regarding reduced railway rates, location of land, etc., apply to Department of Immigration, Ottawa, Canada, or

Gilbert Roche,
3-5 First St., Sheldon Block, San Francisco, Cal.
Canadian Government Agent.

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EUREKA Harness Oil gives new life to leather. It protects leather from decay caused by sweat, dust and moisture. It keeps harness flexible. Rodents dislike it and avoid Eureka oiled leathers. *Eureka saves harness for longer service.*

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STANDARD OIL COMPANY (CALIFORNIA)

Household Department

THE MESSAGE OF THE BELLS

Ring, ring, O bells of Christmas-tide,
Your joyful messags far and wide.
Through all the land proclaim
This is the blessed Day of days
When here, to walk earth's troubled ways,
The Lord our Savior came!

O not with pomp and splendor fine,
But 'mongst the lowly sheep and kine,
And cradled in the straw,
He came, and low the path He trod
Always—the greatest gift from God
An erring world e'er saw.

As in the dawning eastern skies
The Wise Men watched the Star arise
That heralded His birth,
Thus we await God's Kingdom come,
When man and all God's creatures dumb
Shall dwell upon this earth.

In brotherhood; when war shall cease
And Love and Universal Peace—
Their banners white unfurled—
With tenderness and gentle sway,
Their watchword "Mercy," shall for aye
Prevail throughout the world!

Fling out your message, O ye bells,
Your cadence silvery foretells
The gracious times to be
When sweet Compassion, angel fair,
O'er this our land and everywhere
Shall brood perpetually!

—Louella C. Poole.

THE CHRISTMAS TREE

A modest tenant of the northland wood,
Undecked with flowers, unmarked by bud or bloom,
Through all the joyous summertime it stood,
A simple pattern from Dame Nature's loom.

Around it blossomed pink and purple things,
Gay figures in a wild embroidery,
Sweet honey-wells attracting whirring wings
That never paused to rest on modest tree.

Then came the chilling snows of winter-time,
The flowers that bloomed so gayly drooped and died.
The birds departed to a warmer clime,
'Mid other gardens gorgeous to abide.

But still the tree preserved its emerald,
More faithful than the transitory bloom,
And that which once no whirring bird enthralled
Was now the fairest object in the gloom.

Then came regard for all its faithfulness;
The tree that had no golden fruit or flower.
Transplanted with the children's soft caress,
Became the center of our gayest hour.

The Christmas Tree within a single night
Bore fruit more bountiful than all the rest;
With shining candles brilliantly alight
And silver stars a-glitter on its breast.

No proud young stalk such blossoms ever bore
As these that flowered on its branches now;
No plant or bush such glories ever wore
As these appearing on each spreading bough.

The modest tree, unnoticed and unseen,
Became the dearest treasure of the earth
To scatter joy from ev'ry sprig of green
And wake the soul to gladness and to mirth.

Everywhere, everywhere, Christmas tonight!
Christmas in lands of the fir tree and pine,
Christmas in lands of the palm tree and vine;
Christmas where snow-peaks stand solemn and white.
Christmas where corn-fields lie sunny and bright;
Everywhere, everywhere, Christmas tonight!

THE ALTERED CHRISTMAS

(Continued from last week.)

Gertie was completely carried away by the recital of this splendor. "Oh, my!" she gasped, "wasn't that just lovely. I wish I could have things like that! I wish—I wish your ma was alive now!"

"So do I!" echoed Laura.

Mrs. Stephens' heart gave a great throb of pain at this apostasy of her own children. What had she done that they should wish her dead? For so their words struck her Evidently they impressed Marie the same way.

Why, that's just the same as wishing your own mother was dead!" she cried in passionate tones. "You wicked girls! I think she's the very best woman that ever was born—that's what I think. She takes care of us all and don't hardly ever buy anything for hersef."

"I didn't mean it that way at all," wailed Gertie.

"Neither did I," sobbed Laura. She was a year older than her step-sister, but seemed much younger, and never more so than now.

"My mother meant to be good," went on the irate Marie; "hut I've heard Pa say that she hadn't any more judgment than a child. When she bought me the big doll I didn't have a warm dress, and when she bought me the bracelet I needed shoes and mittens. And after she died we had an awful time boarding. I guess my Pa and me appreciate your mother, if you don't. She always has good warm meals for us, and a clean house, and mended clothes. I love her if you don't, and I watch her all the time so that I can be like her when I grow up." Here the speaker, convinced by her own eloquence, wept unrestrainedly.

Mrs. Stephens, with tears in her eyes, stepped back in the sitting room, closing the door softly so that the children might never know that she had been eavesdropping. The sting of her own children's words had been momentary, for she understood their impulsive, affectionate natures too well to be deeply hurt by them. So Marie lover her! She had sat in judgment, but the verdict was favorable, and the stepmother knew that she could take the motherless one to her heart, as she had often longer to do, and that all would be right between them. Her heart was big enough to mother them all.

But the words of her own children had thrown a new light on her decision. Was she in danger of becoming too practical and penurious? Christmas seemed to the children the natural time of expressing love for each other, and she had no right to cheat them out of it. for down in her heart she was conscious of a tiny bit of cheating. She had more than enough for three payments on the house "put by" in the dresser drawer.

She put her shoes back on, and then her outdoor wraps. "After all, Christmas is Christmas," she reflected, and going into the bedroom quietly she unlocked the little upper drawer of the dresser and took a ten dollar bill from a worn old purse. It was hy rigid economy that she had saved this money for what she called her rainy day payment.

"Sweaters," she thought, as she hurried down the street; "red ones—that'll take the most of it. And then a pretty hanky apiece; they always need 'em. And then some candy and oranges, and a game that they can all play together in the evenings; and Marie wants a book—she can read it aloud. If I get three sweaters alike mebbe they'll throw off some. I'd like to get Hiram some slippers. It seems as though I ought to get him a present the first year we're married," and she smiled happily. "He's such a good man. I'm a pretty lucky woman."

"I'll use my next week's grocery money and get a chicken—we really can't afford a turkey—but I'll make it with dressing. and they won't know the difference."

She was fortunate enough to find what she wanted at prices to suit her purse. and two hours after she had stood in the stairway, she crept quietly into hed with a very satisfied feeling in her heart. In addition to her other purchases she had bought some little candles. for the grocer had given her some tinsel rope "to make the tree look pretty." That was the first she had thought of a tree. but she was glad he had spoken of it.

Long before davlight the next morning she aroused her husband. 'Hiram." she whispered. "I want you to go out and cut a little tree."

"Cut what!" he asked. hardly awake.

"A little evergreen a Christmas tree, for the children. you know. You can find something that will do back on the marsh." The Stephens lived just on the edge of the country town.

"All right," agreed Hiram. and made no comment.

When he returned she had a fire in the little-used parlor. and they fixed the tree in the farthest corner of the room. Then Mrs. Stephens brought out her array of presents and placed them to good advantage on the branches. Mr. Stephens went out to the woodshed and returned with a parcel.

"I staved overtime tonight to accommodate a man that wanted some work in a hurry—that's what made me late for supper. I charged him extra for it, so I bought these for the kids."

His wife gave a cry of pleasure as she opened the parcel. "Red caps! And see, they just match the sweaters. Won't they be pleased? Laura and Gertie have been teasing for both."

When everything was ready they closed the parlor door and called the children to breakfast. The father wondered that they seemed unusually quiet over their oatmeal, but the mother thought she knew the reason. Before they were quite through Mr. Stephens slipped into the parlor and lighted the tree, and then called them.

There were shrill cries of delight from the pleased children, and then, to the surprise of the parents, Marie turned and ran from the room, closely followed by the other two.

"Why, what's the matter?" asked the puzzled Hiram.

"I don't know," replied his wife, miserably. "Didn't they like it?"

But in an instant the three were back with shining faces. "We got things, too," fat little Gertie explained breathlessly. "We made 'em at school."

'Bless your hearts! Of course you wouldn't forget Pa and Ma."

Gertie had laboriously manufactured two holders, "one for Pa when he takes out the ashes, and the other for Ma when she bakes." Laura had evolved a blotter and a calendar, and Marie had hemmed a handkerchief for her father; but with money she had earned herself she had bought a silver thimble for her mother. In the box was a card that said, "I love you," and it was signed "Mary."

Lastly, or she supposed it was last, Mrs. Stephens gave her husband the slippers. He was pleased, with the pleasure that only comes to those who have not every wish gratified. Then he reached high up on the tree and took down a little sparkling thing that Mrs. Stephens had not noticed among the tinsel lodged there.

"Here's a ring," he said awkwardly. "I couldn't afford to buy it when we was married, but I want you to have it now. You do everything for the rest of us, and don't buy a thing for yourself. Let's all give her a kiss, children."

"Land sake! I must get that chicken in the oven!" expostulated his wife, to keep from showing emotion.

That night, at the end of their happy day, Laura and Gertie lingered a moment after Marie had gone to bed.

"Ma," said Laura, "I think that you are the very best woman that there is. You always have warm meals for us, and a clean house, and mended clothes. I love you."

"I think so, too." affirmed Gertie.

Mrs. Stephens smiled at the unconscious plagiarism, for she knew that the sentiment was their own.

"I never realized before." she said softly to Hiham, "that a person could be so busy working for their children and trying to get ahead in the world for their sakes that they almost forget to show that they love 'em."—Exch.

A HOLLY HUNT

Cut out of green paper large sized holly leaves, more than nine times as many as there are guests. On one side of each leaf either write, or paste, a label with a letter; making an equal number of letters with each of the letters in the word "Christmas," also marking twice the number with "S", of course. These leaves are then hidden (entirely or partially) in every conceivable place in the room in which the hunt is to take place. They can be pinned in the folds of draperies or on the under side of table or couch covers; they may peep out from behind pictures or from under the edge of rugs; or be hidden under bric-a-brac or under the covers of books. The guests then engage in the hunt, trying to find as many leaves as possible. The person who first gets among his leaves the nine letters with which to spell "Christmas" complete, wins the prize. If because of duplicates no one gets all of the required letters, award the prize to the one coming nearest to it.

CHRISTMAS

Christmas offers more opportunities to endear ourselves to those about us than all the rest of the year, and he who lets slip one such opportunity must surely live to regret it. This day should he so spent that through the year following it shall shine as a beacon from out the dull gray routine of our daily existence, lighting us on our way. It should be remembered as a time when new friendships were formed and old ones more firmly cemented. It should be memorable for the peace, charity, hospitallty and brotherly love that reigned supreme; memorable as a day when we enjoyed ourselves with the happy sincerity of youth and with the deeper, more lasting joy of later years.

A packit somebodie sent,
An' I'll bet naebodie kent
How awfu' glad an' gay
It made my Christmas day!

Sometimes it seems as if we were a bit selfish at the holiday season. All our love is poured out into the laps of those we love best. It is right to be thoughtful of our nearest and dearest, but let's try to have something flow over into the lives of those who may not have a very good time if we forget them.

If acts of love and kindness are generally done this Christmas season for those who need and don't expect them truly the spirit of giving will measure up to a cup full to running over of human kindness.

One cannot cut Christmas out of the calendar nor the spirit of the season out of the heart of the world.

Fir tree cones, gilded, make handsome Christmas tree ornaments.

NUT CANDIES FOR CHRISTMAS

Here are some fascinating recipes from the booklet of walnut recipes just issued by the California Walnut Growers Association. Read them, try them, then write to the California Walnut Growers Association, Los Angeles, for a copy. The recipes are collected by the principal of the Boston School of Cookery and include 100 recipes for bread, meat and vegetable dishes, salads, desserts, candies, etc.

Walnut Date Bars

Two eggs, one cup brown sugar, five tablespoons flour, one-half teaspoon baking powder, few grains salt, one cup chopped walnut meats, one cup dates.

Beat eggs until thick and lemon colored, add sugar gradually and beat, add flour mixed and sifted with baking powder and salt, chopped walnut meats and dates cut in small pieces. Spread in greased pan seven by ten inches and bake in a moderate oven. When cool cut in bars. Serves 20. Costs 57 cents.

Fruit Nut Caramels

One cup figs, one cup dates, two cup walnut meats.

Wash and stone the dates, wash figs. and remove stems, and put with the walnut meats through food chopper. Mix together thoroughly, and press firmly three-fourths inch thick into a small buttered pan. Cut in squares and wrap in wax paper or shape in small balls and roll in powdered sugar. Makes one and one-half pounds. Costs 94 cents.

Fudge Squares

One cup walnut meats, two squares chocolate, one-half cup butter, three eggs, one cup sugar. three-fourths cup bread flour, one-half teaspoon baking powder, one-half teaspoon vanilla.

Melt chocolate, add butter, stir until butter melts, and set aside. Beat eggs, adding gradually one cup sugar. Mix and sift bread flour with baking powder and salt. Add to eggs with walnut meats chopped fine and vanilla, then add chocolate mixture. Spread in shallow pans, bake about ten minutes and cut in squares while warm. Makes 25 squares. Costs 63 cents.

Nut Macaroons

White one egg, one cup brown sugar, one cup walnut meats, one-fourth teaspoon salt.

Beat white of egg until stiff and add sugar gradually while beating constantly. Fold in walnut meats, finely chopped and sprinkled with salt. Drop from tip of spoon, one inch apart, on a buttered and flowered sheet, and bake in a moderate oven until delicately browned. Makes 20 macaroons. Costs 33 cents.

Marguerites

One and one-half cups sugar, one-half cup water, five marshmallows, two egg whites, one-fourth teaspoon vanilla, one cup walnut meats, saltines.

Boil sugar and water until syrup will spin a thread. Remove to back of range and add marshmallows cut in pieces. Pour slowly, while beating constantly, onto stiffly-beaten egg whites; then add vanilla and walnut meats cut in pieces. Spread saltines with mixture and bake in a moderate oven until puffed and delicately browned. Serves 24. Costs 54 cents.

Chocolate Circles

One-half cup walnut meats, one-half cup figs, one-half cup almond paste, grated rind one orange, one-fourth teaspoon salt, two squares unsweetened chocolate, orange juice, sugar.

Put walnuts, figs and almond paste through food chopper, add orange rind, salt and enough orange juice to make mixture of consistency to handle. Knead on a board or marble slab sprinkled with sugar, cut in circles, brush with chocolate melted over hot water, and decorate with walnut meats broken in quarters. Serves 36. Costs 53 cents.

Chocolate Walnut Caramels

One cup sugar, one-half cup white corn syrup, one and one-half cups boiling water, one teaspoon vanilla, one-third cup powdered whole milk, three squares chocolate, one cup walnut meats.

Put sugar, corn syrup and water in saucepan, stir until sugar is dissolved, bring to boiling point, and boil until mixture will form a very firm ball when tried in cold water. The caramels when cold will be of the same consistency as this firm ball. Do not beat, as beating may cause the candy to become granular. Add vanilla, powdered milk sifted, chocolate grated and walnut meats cut in large pieces. Pour caramel into a buttered pan seven inches square. When cool cut in squares and if desired wrap in wax paper.

One and one-half cups cream may be used instead of boiling water and powdered milk. Makes one pound three ounces. Costs 39 cents.

Sugared Walnuts

One cup walnut meats, one cup sugar, one-half cup water, one-half teaspoon vanilla.

Put walnut meats in a saucepan and keep in warm place. Put sugar and water in another saucepan, stir until sugar is dissolved, and boil without stirring, until candy forms a soft ball when tried in cold water. Hold pan of walnuts several inches above the fire and shake vigorously while slowly pouring syrup over the nuts. Occasionally stir the nuts, then add remaining syrup drop by drop until all is used. Nuts should be evenly covered with a coating of sugar. If coating is not thick enough, more sugar and water may be boiled and added as before. Makes three-fourths pound of candy. Costs 32 cents.

HOUSEHOLD QUERIES

Lye Hominy

Will you kindly give me a recipe for making hominy in the old fashioned way with lye.—Subscriber, St. Helena.

To every gallon of corn take one tablespoon concentrated lye. Cover the corn with water. Boil slowly until the skin comes off easily and the dark tips on the grains begin to come out. Wash thoroughly. Let soak over night in cold water, drain, return to kettle and boil in plenty of water until tender. Put in a stone jar and set in a cold place and it will keep several days or it may be canned and kept as long as desired.

Or if you want to make your own lye with ashes: Take three cups hard wood ashes, two quarts cold water, two quarts dry corn. Put ashes in water and boil 30 minutes. Leave until the ashes settle to the bottom. Pour off the clear water which should feel slippery. Add corn to this water and boil until the hulls begin to come off. Drain and wash the corn in cold water, rubbing thoroughly with the hands to remove the hulls. Wash until there is no taste of the lye. Put into clear water and boil several hours until tender.

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2. All remaining weekly 1919 issues.
3. The Companion Home Calendar for 1920.

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4. McCall's Magazine for 1920, $1.00—the monthly fashion authority. Both publications for only $2.95.

THE YOUTH'S COMPANION,
Commonwealth Ave. & St. Paul St.,
Boston, Mass.

New Subscriptions Received at Office of California Cultivator.

Arizona had 32,000 acres planted to cotton in 1919.

Los Angeles Markets

Los Angeles, December 17, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 67 cents.

Dairy Exchange prices last week on extras:

Dec.	10	11	12	13	15	16
'19 ...	67	67	67	67	67	67

CHEESE

Brokers' prices:

California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 68 dozen; case count Produce Exchange closing price 64 dozen; pullets, Produce Exchange closing price 60 dozen. pewee pullets, 56.

Dairy Exchange prices last week on extras:

Dec.	10	11	12	13	15	16
'19 ...	72	71	68	68	68	68

POULTRY

Prices to producers: Hens, lt. 31; heavy, 33; colored over 4 lbs., 33; broilers, 34@37; fryers, 35; roasters, 32; old roosters, 19; ducks, old, 23; ducklings, 30; ducklings, Pekin, 3½ up, 33; geese, 25; turkeys, live, young tom, 37; dr., 43; old, live, 35; dr., 41; hen turkeys, live, 35; dr., 41; squabs, 45@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Weighed and delivered off cars without food or water:

Los Angeles, Dec. 16—Weighed and delivered off cars without food or water: Hogs (hard-grain fed), 125 to 150 lbs., 14.00; 150 to 175 lbs., 14.50.

Cattle (on foot gross weight): Steers, good, 10.50@11.00; medium, 10.00@10.50 heifers, good, 8.50@9.00; fair, 8.00@8.50; bulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep—Ewes, 8.00@8.50; lambs, 14.00@14.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock December 16, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Sixteen cars Cal., 1 Ore., 1 Wash., 1 B. C. arrived. New stock: Stockton Burbanks, fancy, 4.75@5.00 per cwt. Salinas, Burbanks, sacked per cwt., fancy, 5.00; Russets, 4.90@5.00; bakers', 5.50@6.00. Local: Lug boxes, 1.50@1.65; local White Rose, 4.50@4.75.

Sweet potatoes: Market steady. Lugs, 75@1.00, mostly 90@1.00; cwt., 2.75@2.85.

Carlots: Market strong, per cwt., mostly 2.75, few fancy mixed cars, 3.00 @3.25.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, lug 1.25@1.40; cwt., 4.50@5.00, some low as 4.00. Yellows and Browns, 5.00@5.25. Lug boxes, White Globes and Yellows, 1.40@1.60. Yellows and Whites, in boxes and lugs, fancy 5 per lb.

VEGETABLES

These are the actual prices obtained December 16, by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans, green, lb., best, 15@20; other 15@17; Limas, 15@17.

Beets, doz., 45@60; lb., 4@5; sk., 2.50 @2.75.

Cabbage: Market easier. Per lb., 4 @4½; cwt., 4.00@4.50; crates, 3.75@4.00; sacks, 2.50@3.25.

Carlots: Demand and movement moderate, little change in prices, supplies limited. Winningstadt and Cannonball, mostly 70.00@75.00 per ton.

Carrots, dozen, 35@45; lb., 3; sk., 1.50 @1.85.

Cauliflower: Local stock, per dozen, best, 1.50@1.60; field crates, 2.25@3.00.

Carlots: Demand and movement moderate, market weaker, prices lower. Supplies limited, few sales. Crates Snowball and Pearl, mostly Pearl, straight cars 1.35; mixed cars mostly 1.50.

Celery: Market strong. Local stock: per dozen bunches 1.00@1.35. Crates, wide range prices, 5.00@6.00; fancy shipping stock 6.50@8.50, mostly 7.75@8.50. Celery Root, per dozen 1.25.

Carlots: Demand and movement moderate, market weak, prices lower. Per dozen, best, straight cars, 75@80, mostly 75; mixed cars 80@85, mostly 80.

Cucumbers: Local stock scarce, lug boxes 2.50@3.00; some best high as 3.25; 1.25 per dozen.

Chicory, dozen, 45@50.

Eggplant, scarce, lb., 15@17, poorer 10.

Peas, local, lb., 15@18, best 18@20.

Lettuce: Market weaker, prices lower. Per dozen, 40@50; crates, 1.00@1.50; best, high as 1.75@1.85.

Carlots: Fair quality, cr. Iceberg straight cars, little stock moving, mostly 2.00; mixed 2.25@2.50; straight cash low as 1.50.

Peppers: Supplies very light, lug boxes, wide range Bells, 12@16 per lb., mostly 15@16; Chills, best 10@12.

Pumpkins, 1¼@2 ll.

Parsnips: Lugs, 85@1.00; sacks, 2.25@2.75; others, 1.65@2.00; per dozen, 50. Per lug, 1.00.

Romaine, doz., 40; cr., 1.50@2.00.

Rhubarb: Local, box, best, 1.25@1.50; others, 1.15@1.25.

Squash: Hubbard, cwt., 2.75@3.00.

Spinach, doz., 35@40; cwt., 2.75@3.00.

Tomatoes: Demand and movement moderate, supplies very light, market stronger. Lug boxes, ripes, best, 1.50@2.00; poorer, overripes, 50@1.00. Shipping stock 1.85@2.25.

Turnips, doz., 40@45; others, 30@35.

FRUITS

These are the actual prices obtained December 15 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California, 4-tier, Bellefleur, 1.85@2.00, mostly 1.90@2.00; 3½-4½ tiers, 1.65@1.75; loose, 4@4½ lb.; Glen Seedlings, 2.25@2.75; White Pearmains and Yellow Newtown Pippins, 2.00@2.50 box. Delicious, loose, 5@7 per lb.; Newtown Pippins, 5@6; Pearmains, 4@5; Winesaps, 6. Northern: Jonathans, extra fancy, 3.40@3.50, fancy, 3.00@3.10; choice, 2.50 @2.60; loose, 6@7½ per lb. Spitzenbergs, extra fancy, 3.25@3.40, fancy, 3.00@3.25; choice, 2.75@3.00; 6½@7½ per lb. Delicious, boxes, 3.50@4.00; Bcn Davis, per lb., 5; Ganos, 6@7; Pippins, 6; Winter Bananas, extra fancy, box 4.25, fancy 3.50. Rhode Island Greenings, 2.50 box.

Bananas, 8@8½.

Coconut, doz., 2.75.

Cranberries: Barrels, 17.00; lb., 16@17; Oregon, boxes, 4.50@5.00.

Grapes: Supplies scarce. Demand and movement good, market stronger. Local and Northern, from storage, per pound: Tokays, 18@20; Malagas, 16@18; Black Cornichons,16@18; Red Emperors, wide range, 20@22; cr., 3.25@3.50.

Pears: Northern Bartletts, No. 1, 11; No. 2's, 9@10 per lb.; poorer, 5@7; lug boxes, 2.00@2.50; best packed boxes, 3.25 @3.50.

Persimmons, lb., 8@15; mostly 12@14.

Pineapples, lb., 19@20.

Pomegranates, lb., 6½@9; half boxes, 2.50.

Quinces: Local lug., 1.10@1.35; lb., 4@5.

Lemons: Valley stock, fy., 4.50@4.75; loose, 3.50@4.00; juice, 2.50. Local: Packed, 3.50@4.00; best, 4.00@5.00; loose, 2.00 @3.50; lh., 3.

Oranges: Navels, 4.00@4.50 box; best high as 5.00. Local stock: packed, 2.50 @3.75.

Grapefruit: Arizona: Seedless, per box, 3.50@4.00; Cal. bx., 4.00@4.25; poorer 3.75; lug, 1.75; local, box, 2.25@2.50.

HONEY

Demand and movement slow, market dull. Carlots f. o. b. usual terms, per lb.: White Orange Blossom, mostly 19; White Sage, supplies very light, mostly 20; Extra Light Amber Sage, 18½; Light Amber Sage, 18½; Light Amber Alfalfa, 16. Beeswax: Demand and movement moderate. L. c. l. lots, 43 per lb.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.
No. 2, 26.
Diamond Brand Buds, 34.
Golden State Buds, 34.
1918 No. 1 price was 28; fancy budded, 31½.

BEANS

California Lima Bean Growers' Association fixed prices October 6: Limas, 14½; baby, 13.

GRAIN AND FEEDS

Price bid local grain exchange, December 2:

Traders refuse to buy either milo or barley in any quantity at present high prices, but the tone of the market very firm for all cereals. One hundred tons of barley for all December shipment brought $3.80, with all May barley selling for $3.67½.

Oats, Red, rust-proof, 3.25.

Corn, Yellow, 3.25; White, 3.32½; mixed, 3.13.

Egyptian, 3.50.

Kafir, Eastern, 2.87½.

Feterita, 3.42½.

Hygeria, 3.27½.

Wheat, 5.10@5.30.

Alfalfa molasses, 34.00.

Alfalfa Meal, 34.00.

Milo, 3.08¾@3.13¾.

Barley, 3.70@3.77½.

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	22.00@25.00
Barley	19.00@24.00
Alfalfa	22.00@27.00
Barley Straw	10.00@12.00

ALFALFA

The alfalfa market yesterday was strong. According to the quotations given out at the office of the Alfalfa Growers of California the following prices ruled f. o. b. Los Angeles: Choice alfalfa, 34.00@37.00; No. 1 alfalfa, 31.00@34.00; standard alfalfa, 29.00@31.00; choice dairy alfalfa, 33.00@36.00; standard dairy, 30.00 @34.00; No. 1 dairy alfalfa, 29.00@32.00.

San Francisco Markets

San Francisco, December 16, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	68

Prices extras last week and year ago

Dec.	9	10	11	12	13	15
'19 ...	68	68	68	68	68	68
'18	63	..	..	63	..	

CHEESE

Dairy Exchange quotations:

Cal. Flats	30@33½
Ore. Y. A.	39
Ore. Triplets	34
Jack, full cream	33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	76
Extras, pullets	71
Undersized	69

Egg shipments to the East are bringing good prices. A large shipment from Australia has just arrived.

Prices extras last week and year ago

Dec.	9	10	11	12	13	15
'19 ...	85	80	80	78	75	76
'18		82½	..	..	76½	..

POULTRY

Wholesale prices are:

Leghorn, 30@32; colored, 34@35; roosters, young, 30@31; old, 20@22; broilers, 35@37; fryers, 33@34; turkeys live, 40; dressed, young 48@52; geese, 23@25; ducks, Indian Runner, 18@20; Pekin, 24 @26; squabs, 50@60.

Belgian hares, live, 16@17; Jaok Rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle—Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10¾@11¼; do, 1,200 to 1,400 lbs., 10¼@10¾; do, second quality, 9@9½; do, thin, 7@8.

Cows and heifers—No. 1, 8½@9¼; second quality, 7½@8; common to thin, 4 @6.

Calves—Light weight, 12½@13; medium, 11@12; heavy, 8@10.

Lambs—Yearling, 10@11; milk, 12@13.

Sheep—Wethers, 9@10; ewes, 6@6½.

Hogs: Weighing 100 to 125 lbs., 14½; 225 to 300 lbs., 14; 300 to 400 lbs., 13.

Moran & Co. quote:

Cattle: Good steers, 1,000 to 1,200 lbs., 10½@11½; good heifers, 1,000 lbs. and over, 8½@9¼; good cows, 1,000 lbs. and over, 8@9; canner cows, 5@6; good bulls, 5½@6½. Calves, light, 12@13.

Hogs: Top packer, hard and well-finished, 150 to 225 lbs., 14½; 225 to 300 lbs., 14; over 300 lbs., 13½.

Usual dock and price discounts for other weights and kinds.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs.: Rivers, fancy, 4.00@4.25; choice, 3.50@3.75; Oregon Gems., 3.75@4.00; Salinas, 4.00@4.25; sweet, 4@4½ per lb.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 5.00; choice, 4.25 @4.50; Yellow, 4.00@4.50; Whites, 4.50@ 4.75; Garlic, lb., 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 15@20; Lima, 12½@15.

Brussels Sprouts, lb., 8@9.

Carrots, per sack, 1.00@1.25.

Cauliflower, doz., 1.25@1.45.

Cabbage, doz., 40@50.

Celery, doz., 45@50; cr., 5.00@6.00.

Cucumbers: Per box, 90@1.50; hothouse, 2.25@2.50.

Eggplant, lb., 7@10.

Lettuce, cr. of 3 doz., 3.00; doz., 50.

Peppers, Bell, lb., 8@10; Chili, lb., 7@8.

Peas, lb., 15@22½.

Pumpkins, per sack, 75@1.25.

Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 25@ 1.00; L. A. cr., 75@1.00.

Squash: Summer, bx., 1.50@2.25; Hubbard, sk., 1.25@1.75.

Spinach, lb., 2@3.

FRESH FRUITS

Wholesale selling price:

Apples: Bellflowers, 1.75@2.25; Newton Pippins, 2.15@2.50; Jonathans, 2.50 @3.00; Spitzenburg, 2.25@2.75 ch.; fy., 3.00@3.50.

Avocados, small California, doz., 75 @2.00.

Bananas, 7@8.

Cranberries, 5.00@5.50 per standard box: barrel, 15.00@16.00.

Figs, double or single layor, 1.00@1.50 box.

Grapes: Malaga, 2.00@2.50 per box; Muscats, 2.00@2.50; Tokays, 1.25@2.50; Isabellas, 1.25@1.75 per crate.

Huckleberries, lb., 18@20.

Pears, box, 3.00@4.50.

Persimmons, box, 1.25@1.75.

Plums, 1.00@2.00.

Pineapples, doz., 3.50@4.00.

Pomegranates, 1.50@1.75.

Quinces, box, 75@1.50.

CITRUS

Wholesale selling price:

Per box: Lemons, fancy, 5.00@5.50; choice, 2.00@3.00; oranges, Valencias, lemonettes, fancy, 3.25@3.50; others, 2.00 @2.50; grapefruit, fancy, 2.50@3.00; choice, 2.00@3.00; oranges, fancy, 4.00@ 3.00@4.00; navels, 4.00@5.00; limes, 1.50 @1.75 per crate; tangerines, 1.50@3.00 cr.

ALMONDS

California Almond Growers Exchange opening prices:

Nonparell @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HONEY

The local market is pretty well cleaned up of dark colored honeys. These have been taken by buyers at between 12 and 13 cents, largely for the bakery trade, which will not stand much higher prices than the current sugar quotations. The darker grades of Hawaiian honey are still arriving from the Islands, and are selling at between 10 and 12 cents. This is not the honey made from refuse of the sugar mills, which lacks that quality in flower-made honey, of holding moisture in cakes sweetened with it, and which bakers are shy of using at much lower prices than true honey. Holders of light colored honeys still look for this government to help out the European situation by financing sufficient credits to enable a freer buying of American products. The demand abroad for all kinds of foodstuffs is as urgent as ever, but with the franc quoted at 9½ cents, against a par of 20 cents, and the mark quoted at 2½ cents, as against a par value of nearly 24 cents our shippers are not able to carry this large deficit in foreign exchange. Our produce is therefore likely to remain in this country until Wall Street acts.

Jobbing prices: Extracted, Water White and White, 18@20 lb.; Light Amber, 16@18; Amber, 13@15; Comb, 25@ 28 for White and Water White and 23@ 25 Light Amber.

HOPS

1919 contracts per lb. around 75@90.

BEANS, PEAS

Jobbing price per cental:

Beans: Small white, 6.50@6.75; large white, 6.50@6.60; cranberry, 7.50@8.00; red Mexican, 7.00@7.25; pink, 6.35@6.50; California Bayou 9.25@9.75; Blackeye, 6.00@6.50; red kidney, 12.00@13.00; Lima 13.50@13.75; Garvanza, 9.50@10.50; Kotenashi (in bond), 5.35.

Dried Peas: California, 6.50@7.00 per cental for green, recleaned.

RICE

Prices per 100 lb. bag:

California: Fy., 10.50; ch., 10.25; flour, 6.25.

DRIED FRUITS

Prunes:

Prune prices announcel by the California Prune and Apricot Growers, Inc., were for the base prices, according to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be paid on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.

Peaches:

Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option, guaranteed against our own decline until January 1, 1920, are as follows:

Standard yellows, 14¾c; Muirs, 15c.
Choice yellows, 15½c; Muirs, 15½c.
Fancy yellows, 16½c; Muirs, 17½c.
Extra fancy yellows, 17¾c; Muirs, 18¾c.
Slabs, yellows, 14½c.

For "practically peeled" add 1½c per pound (any grade).

Prices above are all bulk basis.

For packing in 50 pound or 25 kilo boxes add 1 cent per pound.

25 pound or 12½ kilo boxes, all 1¼c per pound.

10 pound boxes, add 2c per pound.

Blue ribbon peaches packed 2 pound cartons, 12 per case, $10 per case.

Blue ribbon peaches packed 2 pound cartons, 24 per case, $10 per case.

Bakers' special, "practically peeled," 16¾c per pound, bulk basis.

Apples:

Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; fancy (in 50s), 23@ 23½.

Figs:

White: Cooking (in 50s), 15@16; choice (in 50s), 17@18; extra choice (in 50s), 19 @20; fancy (in 50s), 21@22; extra fancy (in 50s), 23@24; bricks, 12 No. 10s, 1.60@ 1.67½; bricks, 24 No. 8s, 2.55@2.65; bricks, 50 No. 6s, 4.00@4.15; bricks, 70 No. 4s, 4.20 @4.35; layers, No. 10, 2.50@2.80. Calimyrna: Cooking (in 50s), 19; choice (in 50s), 23; extra choice (in 50s), 24; fancy (in 50s), 26; extra fancy (in 50s), 27½; bricks, 10 1-lb., 2.75; layers, No. 10, 2.95@ 3.20. Black: Standard 14, choice 17@18; extra choice, 18@19; fancy, 19@20.

Pears:

Standard 20, choice 22½; extra choice, 24; fancy, 26@27.

Raisins:

California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package, 15; fancy, 16s, package, 15; fancy, 12s, package, 11¾; choice, 16s, package, 14½; choice, 12s, package, 11⅜; bulk, fancy in 25s, 14¼; bulk, bakers, in 25s, 13½; bulk, Malagas and Feherzagos, in 25s, 13. Loose Muscatels: 4-crown, in 25s, 14¼; 3-crown, in 25s, 13¾; 2-crown, in 25s, 13¼; 1-crown recleaned, in 25s, 14. Seedless: Thompsons, 16s, 15½; Thompsons, 12s, 12⅛; Thompsons, bulk, recleaned, in 25s, 14½; Thompsons, bulk, bakers, in 25s, 15½. Bleached Thompsons: Choice, in 25s, sulfur, 18; fancy, in 25s, sulfur, 18½; extra fancy, in 25s, sulfur, 21; soda dipped, in 25s, 17¾; oil dipped, in 25s, 17¾. Sultanas, 16s, 15¼; Sultanas, bulk, in 25s, 14¼. Layers: 6-crown, flat pack, 20s, per box, 4.05; 6-crown, flat, 10s, per box, 2.20; 6-crown, flat pack, 5s, per box, 1.20; 4-crown, flat pack, 20s, per box, 3.20; 4-crown, flat pack, 10s, per box, 1.75; 4-crown, flat pack, 5s, per box, 1.00; 3-crown, tray pack, 20s, per box, 3.10; 3-crown, flat pack, 20s, per box, 2.95; 3-crown, flat pack, 10s, per box, 1.60; 3-crown, flat pack, 5s, per box, 95; clusters, 20-1s, cartons, 3.45; clusters, 12-2s, cartons, 3.80; clusters, 4-5s, cartons, 4.50; vineyard run, 100s, 13.00.

GRAIN

Wheat: The prices are based upon federal grades and standards at the terminals in San Francisco Bay and Los Angeles, and are as follows, per bushel of 60 pounds:

Hard White—	Per Bushel	Per Cental
No. 1	$2.20	$3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.13	$3.63 1-3
No. 2	2 15	3 58 1-3
No. 3	2.11	3.51½
Club and Sonora—		
No. 1	$2.16	$3.00
No. 2	2.13	3.55
No. 3	2.09	3.48½

The above are minimum prices.

For sacked grain add 4½ cents per bushel of 60 pounds to above prices. Deductions of three-fourths of a pound made for weight of standard grain bags. Wheat grading under No. 3 mixed or smutty wheat will be purchased according to merit.

Oats: Red feed, 3.05@3.10; black, 3.15 @3.25.

Corn: California yellow, 3.00@3.10 per cental: Egyptian, 3.50@3.60; milo maize, 3.20@3.30.

Rye: 3.30@3.40.

Barley: Spot feed, per cental, 3.42½@ 3.45; brewing, 3.55@3.60.

HAY

Under date of December 13, Scott-Magner & Miller says:

Receipts past week, 1,327 tons. The car situation continues to be a main factor in the market. Trade in the city is very dull, while the demand from country districts is quite active. It is hard to take advantage of this country demand owing to the scarcity of cars at all loading points; this includes San Francisco as well as every other point. It often times takes several weeks to obtain cars at specific points for special shipment.

The recent rains have been most beneficial in all districts putting the ground in best possible shape for plowing where not already plowed and starting the seed in the land which was dry plowed. Grass starting on the ranges and with favorable weather may relieve the stock situation. The market is firm on all grades.

considerable alfalfa is moving from Nevada this way at the present time.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay (light 5 wire bales) .....24.00@26.00
No. 1 Wheat or Wheat and Oat Hay .....21.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@22.00
Choice Tame Oat Hay.....23.00@26.00
Other Tame Oat Hay.....20.00@23.00
Wild Oat Hay .....19.00@22.00
Barley Hay .....19.00@23.00
Alfalfa Hay .....21.00@26.00
Stock Hay .....16.00@19.00
No. 1 Barley Straw, bale..... .50@ .80

Citrus Markets

Los Angeles, December 17, 1919.

Navels are beginning shipping south of the Tehachapi but very cautiously. Central California shipments of Navels ran as high as 285 cars in one day. The usual total from that section is around 100. Northern California, including Butte, Sacramento and other counties, has now shipped out a total of 226 cars of Navels. The extreme cold weather of the East has prevented unloading some fruits but there has been no serious piling up of cars on sidings because the rains of last week prevented picking at an opportune time. Experts are still busy estimating damage from the electrical storm. The damage is more serious than first estimates indicated.

Lemons are in a bad way. Immense numbers of foreigns are coming and the extreme cold has lessened the demand.

Shipments

Shipment of oranges from Southern California to date since November 1, 1919: Oranges, 2,782 cars; lemons, 505; total, 3,287. To same date last season: Oranges, 660; lemons, 869; total, 1,529. Central California: Oranges, 3,003; lemons, 87; total, 3,090. To same date last season: Oranges, 2,295; lemons, 184; total, 2,479. Northern California: Oranges, 226; lemons, 15; total, 241. To same date last season: Oranges, 166.

AT THE AUCTIONS

December 10

New York: 14 Val., 6 Nav., 3 lem. Val., 2.55@7.80; Nav., 3.75@7.15; lem., 75@4.35.

Boston: 9 or., 4 lem. Val., 2.35@5.35; lem., 50@3.10.

St. Louis: 2 or., 2 lem. Val., 3.10@4.50; lem., 1.40@2.05.

Cincinnati: 1 or., 1 lem. Val., 1.25@1.40; lem., 1.30@2.00.

December 11

New York: 16 Val., 2 Nav., 1 Ariz. Nav., 1 lem. Val., 1.75@5.95; Nav., 3.85@6.55; Ariz. Nav., 3.65@6.45; lem., 30@3.20.

Pittsburg: 4 Val., 1 Nav., 1 lem. Val., 2.65@5.10; Nav., 5.45; lem., 1.50@3.75.

December 15

New York: 31 Val., 12 Nav., 1 mixed, 4 lem. Val., 1.70@6.35; Nav., 2.60@6.25; lem., 1.45@3.65.

Boston: 11 Val., 6 Nav., 3 lem. Val., 2.10@5.55; Nav., 4.50@6.40; lem., 1.25@3.55.

St. Louis: 5 Val., 1 Nav. Val., 2.85@4.35; Nav., 4.15.

Philadelphia: 4 Val., 1 lem. Val., 1.90@5.10; lem., 2.45@3.75.

December 16

New York: 20 Val., 7 Nav., 2 lem. Val., 1.50@6.40; Nav., 2.50@6.10; lem., 70@1.60.

Boston: 11 or., 2 lem. Val., 3.45@5.00; Nav., 5.35@6.50; lem., 2.90@6.00.

St. Louis: 4 or., 1 lem. Val., 3.15@4.90; lem., 1.75@2.90.

Philadelphia: 5 or., 1 lem. Val., 2.05@4.30; lem., 1.00@2.15.

Pittsburg: 2 Val., 1 lem. Val., 3.60@5.20; lem., 2.80@5.15.

MARKET NOTES

H. A. Marks, U. S. D. A. market specialist in Florida, reports regarding cabbage conditions in Florida:

"With planting of cabbage still continuing throughout the producing sections an accurate estimate is still impossible, but from present indications the acreage of commercial cabbage will be between 8,000 and 9,000 acres for the coming year, probably closer to 8,000, compared with an acreage of about 4,000 for the past season."

Department crop estimate men report for cabbage in Texas:

"A few growers are reporting rot which they claim due to cloudy, wet weather. No general movement expected until after February 15, with peak the latter part of March. Total planting 15,725 acres, as compared with 4,430 acres harvested in 1918-19."

Specialist Stillwell of crop estimates reports as to cabbage conditions in Imperial:

"Estimated commercial acreage season 1919-20, by shipping points, follows: Brawley, 190; Heber, 80; Poppy, 25; total, 295. The stand and yield are poor."

There are 181 sour cabbage or crout factories in the United States which used last year 30,774 tons of cabbage. The largest acreage devoted to crout is in Michigan which grows over 1,000 acres. The average yield the country over for 1919 was 6.7 tons per acre. The 1918 production was far greater, aggregating 86,239 tons, used by 157 cutters. Cabbage grown in California and the Southwest is almost exclusively sent to winter markets. This section is not in the crout class.

As to cauliflower in Los Angeles district, E. W. Stillwell, specialist, reports: "Recent rains followed by warm weather will hasten maturity. Supplies should be heavier next week. Variable weather has slightly affected quality, tending somewhat to make looser heads for recent shipping."

Lettuce plantings continue in Texas. State will plant 1,300 acres compared to 557 in 1919. Shipments in bushel hampers will not be in full swing till February.

Stillwell reports lettuce conditions in Imperial Valley: "The following estimates of acreage for season 1919-20, by shipping points, are based upon reports from distributors showing prospective, contracted or controlled acreage and upon estimates of independent acreages. Many distributors figure approximations only on account of contracts with growers still unsigned, but figures are quite accurate. Brawley, 332; Heber, 1,620; Calexico, 1,745; Westmoreland, 870; Poppy, 700; Imperial, 413; Kimura, 250; Seeley, 250; Calipatria, 140; Grape, 140; Rockwood, 70; total, 6,530, as compared with 2,650 for season 1918-19. It is difficult to obtain accurate estimates of the average yield on account of new growers and new soil. These factors generally appear to have reduced the yield although weather has been favorable. The average stand is estimated at 70 per cent. Cooperative estimates place the yield of commercial stock available for shipment at 150 crates averaging six dozen heads each per acre, or total 4,328 cars, 330 crates each. Shipments are not expected to reach this figure. Relation between estimated acreage and cariot shipments the past three seasons shows for each season approximately two-fifths cars per acre. Upon this basis shipments will total 3,800 cars. Serious shook and nail shortage and possibility of hot weather in April may stop shipments before crop is harvested, and local authorities believe 3,500 cars probably will move. The shipping season is longer than usual starting about Christmas and continuing to late April. January movement will probably be 500 cars, with peak first part of March. Los Angeles district: Damage by frost ten days ago apparently is limited to freezing out leaves and tops of leaves. In some sections such damage is negligible. It is doubtful if carrying quality is injured, but poor appearance will lower selling value. Recent rains slowed up cutting slightly, but benefited crop. Supplies for shipment increasing, but heavy demand still causing cutting of immature stock."

The Imperial Valley will ship 85 cars of peas.

Spinach shipping from Imperial begins today, December 20. The valley has about 1,200 acres and will ship about 800 cars of 330 crates each. Some of the better fields will run a car to the acre.

Beginning about January 1, 1920, "The Market Reporter," a periodical of general interest devoted to marketing information concerning important agricultural products, will be published weekly by the bureau of markets. It will be sent free to those interested who make request to "Bureau of Markets, U. S. Department of Agriculture, Washington, D. C."

Celery in Florida: Early plantings nearly over. Acreage as usual will be increased by plantings of late celery. The color is good and the growth has been remarkable during the past three weeks. The stand is fairly good and plants are less uneven than earlier in the season, but at the present time the average condition is probably about 70 per cent, with prospects of a yield of about 500 crates per acre. Most shipments this season will be in the ten inch crate.

Celery in Southern California: Rains have made it impossible to harvest celery but have helped late crop. Shipments from El Monte should start again in a few days. Central section: Frost ten days ago nipped tops, causing discoloration both in Antioch and Walnut Grove districts. In a few spots where the frost was especially heavy the carrying quality is probably injured. Rains practically stopped shipments the last few days. Movement is expected to be normal again Monday. With favorable weather shipments from Walnut Grove should be 12 to 14 cars per day the next ten days.

PAMPAS GRASS

The commercial use of pampas grass in California began in 1872, when the late Joseph Sexton of Goleta, Santa Barbara County, planted seeds, raised young plants and set out a block for plumes. In 1874 samples of the female plumes were sent to New York and at once became popular and in strong demand. The early prices were as high as $200 a thousand but of late years $10 a thousand is the ruling price.

But all this is about commercial pampas grass whereas it is beautiful as a garden ornament. Not only do we have the common species, but dwarf ones and one with striped leaves and pink and lavender plumes. While the grass is almost a bog plant it will grow in very dry situations, and there is no garden soil in which it does not thrive. Of late years the common species has been left to parks and large gardens because of its great size, but the smaller and colored plume varieties are very popular.

RUST RESISTANT ASPARAGUS

The Washington family of rust resistant asparagus, developed by the United States department of agriculture in cooperation with the Massachusetts agricultural experiment station and other cooperators throughout the country as the result of 13 years of effort, is now well disseminated among interested growers and seedsmen, some of whom have available stocks of the new strains for sale. The pedigreed stock thus far distributed to growers is intended to form a basic stock for further breeding work. The department of agriculture announces that while it will continue to distribute the new strains, private enterprise must be looked to henceforth to furnish the general trade with its main supply of seeds and roots.

FILIPINO ADVANCE

The Philippine legislature, composed entirely of Filipinos, recently voted 30,000,000 pesos to extend the educational system so that school will be available to every child in the islands. The government now supports 4,700 schools, with 12,303 teachers. The number of children attending shows a gain of 54 per cent in the past six years. All instruction is in English and will continue to be, even though independence is secured. A large number of additional American teachers will be employed and sent to the Philippines during the next year. The total expense of education is paid by the Philippine government.

SOME LETTUCE

It is a matter of record that a New York buyer who ordered a car of California lettuce opened it and wired back: "I ordered lettuce, received cabbage." On being assured that it was lettuce he re-examined it and was astounded as well as overjoyed to find such firm, gigantic heads. He even then doubted if the public desired such large sizes, but now California lettuce commands the highest price wherever it is offered on the market.

BOLIVIA BREAD

The United States ships to Bolivia nearly two-thirds of all her wheat flour, twice the amount imported from its neighbor, Chili. Bolivia grows little wheat and has no flour mills. Ordinary bread is made in the same manner as in the United States, but the cheaper grades are made with an admixture of corn flour.

COCONUT PRICES

Five years ago the export price of coconuts at Colon, Panama, was $20 to $22.50 a thousand. Now the price ranges from $60 to $75 a thousand, the highest prices ever known. For three months previous to September 30, the coconuts invoiced for export to the United States amounted to $5,850,913, valued at $393,932. The high present price has much stimulated the export business.

ADVERTISING IN SPAIN

Copies of the review Messidor, Barcelona, Spain, claimed to have a circulation of 5,000 copies, has been received at Washington, D. C., with a request for American advertising. The rates are based on 35 pesetas a page. A copy of the magazine is filed with the bureau of foreign and domestic commerce as No. 20941. No castles in Spain are advertised.

CEMENT TILE FOR ALKALI

After an interruption of two years the government officials have again taken up the investigation of cement tile drains for alkaline soils. In Minnesota tiles buried two years ago were found uninjured by alkali or acids. The results to date have been published in a bulletin entitled: "Durability of Cement Tile in Alkali Soil."

EXPORTS TO NETHERLANDS

During the first six months of 1919 the United States supplied the Netherlands with 99.3 per cent of the barley imported, 71 per cent of the oats, 94 per cent of the buckwheat, all of the rye (grain), 84.9 per cent of the wheat flour, 99.3 per cent of the petroleum, 67.8 per cent of the lubricating oils and much of the lesser importations of food stuffs.

AMERICAN MOTOR CARS IN INDIA

The returns of the foreign sea-borne trade of India for July throws interesting light on the hold obtained by American motor car manufacturers on the Indian market. During the month 772 cars were imported, 750 of them being from the United States, valued at $632,645.

TO KEEP CABBAGE FROM BURSTING

Cabbage will often all get ready to use at the same time and if not used then may burst. A. F. Yeager of the North Dakota agricultural college states that this can be prevented by waiting until the heads become solid, then pull up on the plant until it starts to give. This breaks many of the roots and will supply only enough moisture to keep the heads in good condition.

SHE WAS TRUE TO HIM

"Now, I wonder," thought Alphonso, the new husband, who was a commercial traveler and away from home, "what Arabella is doing this precise moment. I wonder," he repeated, "what she is doing."

Then a brilliant idea struck him and he visited the nearest spiritualist medium.

"What," said Alphonso, for the third time, "is Arabella doing?"

"She is looking out of the window," replied the medium, "evidently expecting somebody."

"That is strange," said Alphonso. "Whom can she expect?"

"Ah!" continued the medium, "some one enters the house and she caresses him fondly."

"It can't be!" cried the excited husband. "My wife is true to me."

"Now she lays his head on her lap and looks tenderly into his eyes."

"Nonsense!" roared the jealous husband.

"Now she kisses him."

"It's false!" yelled Alphonso.

The medium saw that he had gone far enough.

"Now," he said, "he wags his tail."

Lincoln said: "The value of life is to improve one's condition." Saving is the foundation of advancement. Buy W. S. S.

WEATHER REPORT

San Francisco, Cal., December 13, 1919.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	1.50	7.08	12.64	58	28
Red Bluff	1.02	3.52	7.32	54	28
Sacramento	.58	2.89	4.88	54	30
San Francisco	1.65	4.02	5.44	56	37
San Jose	.36	3.09	4.08	58	26
Fresno	.51	1.48	2.56	58	29
San Luis Obispo	1.10	5.18	4.31	60	32
Los Angeles	.26	4.27	3.11	62	44
San Diego	.28	2.20	1.86	66	43

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Hardy Northern Grown Trees Give Results

Bartlett Pear
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Apricot, Apples
Almonds and
All Other
Cal. Varieties

Send us your want list for quotation

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He Made $1,000 So Can You

J. C. Damsgard made $1,000 in less than a month. A. A. Rousselle writes: "Selling 50 to 100 sets every week." One of our beginners sold 12 sets before breakfast.

You don't need experience. Not a bit hard. Our five startling inventions sell on sight. Every car owner needs them—can't buy from anyone else. YOU can make big money too—right in your own community. But don't wait—hurry! You may never again have a chance like this. Send TODAY for complete information. A post card will do. Mail it now—quick.

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My K Hand Stump Puller

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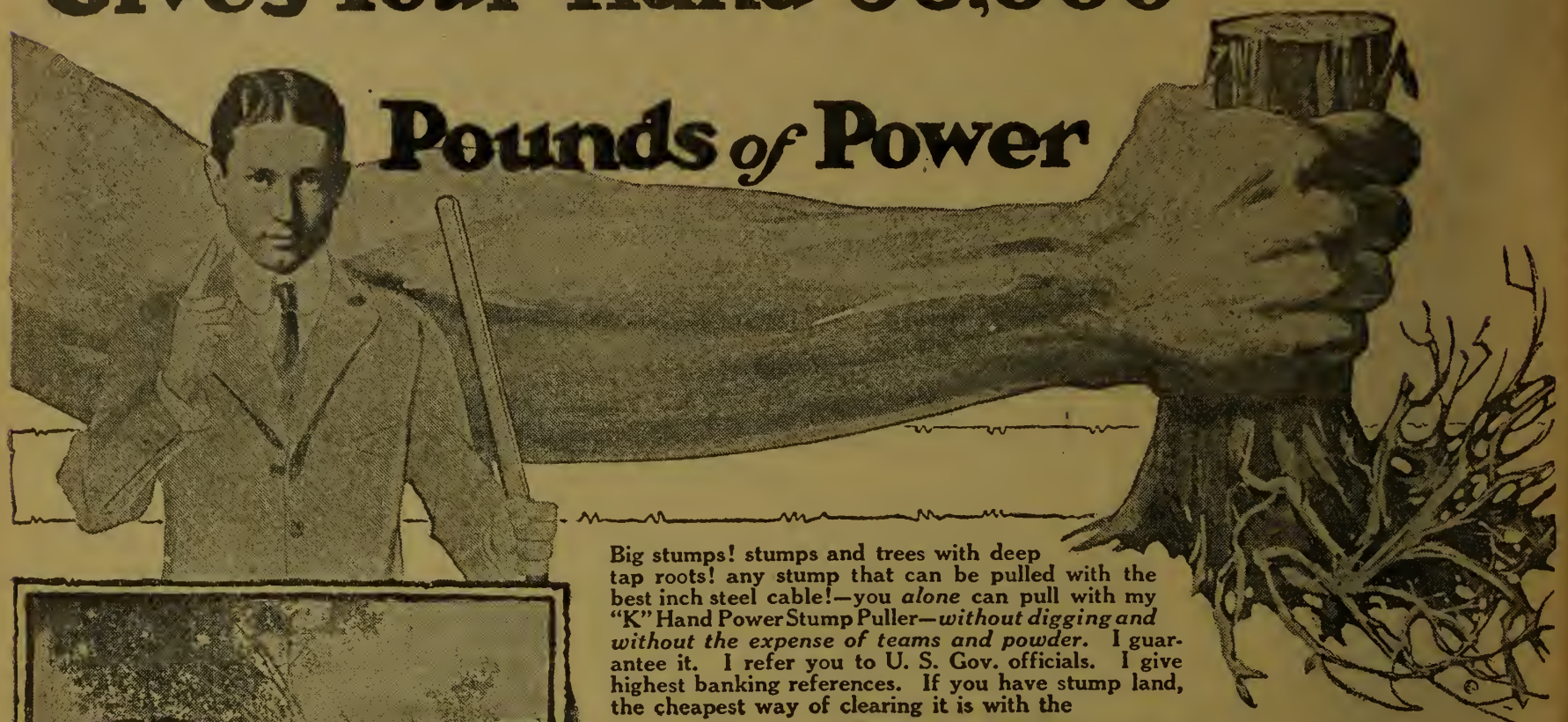

Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable!—you *alone* can pull with my "K" Hand Power Stump Puller—*without digging and without the expense of teams and powder.* I guarantee it. I refer you to U. S. Gov. officials. I give highest banking references. If you have stump land, the cheapest way of clearing it is with the

HAND POWER

K Stump Puller

Frank Hance, a *one-armed* farmer of Bowie, Md., pulling a double silver maple 3 ft. 8 in. in diameter at the ground, with deep tap roots. This is an easy pull for the "K," as the cable can be hitched high and the leverage is consequently greater.

How the "K" Pulls Biggest Stumps

The "K" works on the leverage principle of the ordinary lifting jack, except that the power is applied on a cog-wheel instead of a standard. 100 lbs. push on the lever develops a 48-ton pull on the stump—all an inch steel cable will hold. One man operates it alone—no teams to pay for—no walking.

A Mechanical Wonder

Made of finest steel—guaranteed against breakage. Weighs only 171 lbs.—easily carried or hauled about on its own truck wheels. Has two speeds—60 feet per minute for hauling in cable or for small stumps—slow speed for heavy pulls. *Works equally well on hillsides and marshes where horses can not* work

Owners Praise It

H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder."

Ernest Thompson Seton, author and naturalist, declares the "K" "a great success."

Hundreds of owners write in, telling of pulling six- and seven-foot stumps, of pulling faster and pulling bigger stumps than by any other machine.

Special Offer We are making a special offer to get a "K" Stump Puller introduced in every neighborhood. Write us today for full information and for free book on Land Clearing and about our Wonderful Drag Saw.

The Fitzpatrick Products Corp.
Box 17
99 John Street, New York
Pacific Coast Office 182 Fifth St., San Francisco

H.G. Hunzicker of Foster, Wash., pulling a 24-inch fir stump with deep tap roots out of hard ground, without using powder or cutting any roots.

Tear Out and Mail Today

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182 Fifth St., San Francisco

Send me full particulars on your special offer and your free booklet on Land Clearing.

Name_____

Address_____

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LIII — December 27, 1919 — No.26

A Beautiful Sight---A Productive Orchard---Walnuts

California now has 65,000 acres of walnut orchards. She will plant this coming year approximately 5,000 more. The quality of California grown walnuts has given them entrance to the best markets and a gradually increasing return to the grower has encouraged larger planting. It is estimated that this year's planting would be doubled if trees could be had. This year's return to the State for its walnut crop will reach $20,000,000.

"and it is manufactured especially for California"

Allwork II

That is why the Allwork The Second is so wholly satisfactory and in so short a time its sales exceed that of any similarly priced tractor

¶ Of course you know the Allwork II must have been accepted as a great success because it was designed to meet California conditions.

¶ Knowing the severe conditions a tractor must combat to be successful in California, you will agree that two of the most essential things are **plenty of reserve power** and **the complete** enclosure and protection from dirt of all working parts.

¶ An absolutely dust-proof construction is carried throughout the Allwork II and all gears and other working parts are run in oil.

¶ The same powerful, heavy duty, five bearing crank shaft engine is used that has made the Allwork tractor so famous during the past ten years.

¶ There is power enough to pull three bottoms anywhere without strain or overload and strength, and therefore durability throughout the balance of the machine which the lighter tractors of equal or greater rating do not have.

¶ And still with all of this power and strength the Allwork II is only fifty inches wide, fifty-five inches high, has a seventy-five inch wheelbase and turns in a nine foot radius.

Never before has so Much Power Been Built into such a Small Tractor

Perfect Traction in all soil without the effect of Packing

All Working Parts Completely Enclosed and Running in Oil.

Timpken Bearings Throughout Transmission	4¾x6—4 Cylinder Engine
14-18 Horse Power	900 R. P. M.
Timken Bearings on Differential	5-Bearing Crank Shaft
Hyatt Bearings on Rear Axle	Individually Cast Cylinders
Timken Bearings in Front Wheels	Burns Kerosene or Distillate
Nine Feet Turning Radius	Governor Enclosed in Oil
Differential, with Short Turn Brakes	3,000 Pounds Drawbar Pull in direct
4,500 Pound Weight	3 Speeds Forward and Reverse
55 Inches High	Oscillating Center Draft Drawbar
50 Inches Wide	Timken Worm Jack Shaft
75 Inch Wheelebase	Final Drive Through Gears Running in Oil

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The Outlook for the Pacific Coast Farmer

Cultivator Readers Review Past Year's Industry and Have High Hopes of the Future

NEVER before has the farmer been confronted with so serious a problem as at present. Never has he asked so seriously, "What of the future?" We have all looked to history for that ever-helpful precedent, but in this case it seems impossible to find. After the Civil War conditions somewhat similar to the present confronted this country. These conditions were gradually changed until normal prices and normal transactions returned. This required some 13 or 14 years and was so gradual that no serious jar resulted. Our more careful thinkers are giving much encouragement, so we have gone to them and asked the questions which the farmer is asking of us.

So far as the past year is concerned and so far as food production during the strenuous days of the war is concerned the California farmer suffered from shortage of labor, yet produced more than ever before. Conditions are somewhat different, the labor shortage remains, yet our production has increased and we believe will continue to increase during the next 12 months. As may be seen from the estimates given in the following pages, these products will be absorbed in a way which will be entirely satisfactory to the producer. It is only a few years since the top production of the entire United States reached the ten billion dollar mark. Last year's production, including livestock, aggregated in excess of 25 billions. California's part in this was great, for its farm products alone exceeded in value one billion dollars.

One little section of the state, the Imperial Valley, which less than a score of years ago was unproductive desert, during the past year sent out over 500 trainloads of lettuce, onions, spinach, peas and other truck crops. The citrus growers of the state sent to market well towards $100,000,000 worth of citrus fruits and citrus fruit products. Of apples the state has produced this year well up to 1,300,000 boxes; of pears, 5,000,000 bushels, this according to figures given out by the United States division of crop estimates. Of walnuts there was never such a crop and it will bring $20,000,000 to the state. Then there are almonds, cherries, figs, olives, small fruits, sweet potatoes, onions, corn, sorghum grains and a number of other products which will bring around $100,000,000. Apricots, peaches, prunes, raisins and grapes aggregate well up towards $100,000,000. Then there is $100,000,000 in vegetables, cantaloupes, sugar beets, potatoes and beans. The bean growers have been disappointed over the market situation; closer cooperative methods of marketing are now being used and another year will presumably bring more satisfactory results. Two of our newest crops, rice and cotton, will aggregate far above $50,000,000. Alfalfa and grain hay have produced stock feeds to the value of more than $100,000,000. Still we have not mentioned many of our crops nor animal husbandry which is increasing in importance with a rapidity equal to that of the others mentioned.

These figures give only a slight indication of the prosperity of agriculture in general in California and on the Coast. The individual farmer may well respond: "This looks well for the state; what are my prospects for the next year?" No one has the answer, but there is many an excellent suggestion in the letters which have been received by the California Cultivator from a number who have been asked for their best word for 1919 for the California farmer.

The first letter is from J. P. Riggs, assistant secretary to Secretary Houston of the United States department of agriculture.

A BRIGHT FUTURE

By J. P. Riggs, Assistant Secretary United States Department of Agriculture.

TO me it seems that the path of American agriculture lies straight ahead. There are hills to climb and gullies to cross, but the course is straight and the sun shines all the way. All we have to do is to keep our faces to the front, and, as the expression goes, follow our noses. Thus we shall pass by the crossroad that leads to backwardism and the other one that goes to radicalism. Neither of these "isms" will lead us away from progress and patriotism.

Agriculture is America's greatest and basic industry, and the people of this country as a whole now realize it more than ever before. The splendid response that American farmers made to the necessities of war time emphasized the dignity as well as the importance of their calling. We can build uopn this foundation by doing our duty, by producing food in abundance for the people. That should be an easy and a logical duty, for there is no present indication that good markets and fair returns will be lacking.

Forces are at work everywhere to make farming more stable and more profitable. Steps are being urged and are being taken to eliminate the evils that still exist and to improve the facilities that have been provided. We look forward to additional legislation for the protection of farmers in their buying of feed and fertilizers; to extension of governmental aid in marketing so as to enable them to sell at retail and buy at wholesale; to personal credit unions that will make it less difficult for farmers to obtain financial accommodations; to better rural schools, improved sanitary conditions and medical facilities in rural districts, and to many other developments and accomplishments, some under state laws and some under federal laws, and some requiring state and federal cooperation, that will make country life and country work fully worthy of itself.

The wonderful state of California, whose very name is a symbol of plenty and whose crops are as notable for their variety as for their abundance, has an agricultural future as bright as the evening sun in the Golden Gate. It deserves and undoubtedly will get its full share of the beneficial developments that lie ahead.

THE OUTLOOK FOR THE FARMER

By Stoddard Jess, President First National Bank of Los Angeles

IN reply to your question as to the outlook for the farmer during the coming year, I would say that notwithstanding the great uncertainties that exist throughout the civilized world as the result of the war, in my opinion our farmers will not only be justified but will be acting wisely to bend every effort to produce food products and raw material during the coming year.

While we know that the present prices are abnormal and must eventually approach normal again, no man is wise enough to foretell the time when normal prices will be realized. Hordes of people in Europe are suffering from the lack of food and many will starve to death during the coming winter. The world's supply of food products is short. The high prices during the past two years have largely been the result of the workings of the law of supply and demand. With the many millions of young men engaged in the war, who ceased to produce and became consumers, and the other millions at home whose activities were diverted from useful occupations to the manufacture of munitions and supplies for the use of the army, it is not to be wondered at that the world's supply of food products became exhausted and prices were forced to exorbitant figures. With the restlessness still continuing in European countries, many years must elapse before they produce as they did before the war.

While the farmer should expect a lower range of prices next year, he can with reason expect prices to continue above normal for some years to come, for it will take some years to fill up the world's storehouses that were depleted during the war. Farmers should continue to speed up production, both because it will be profitable for them to do so and because it will be helpful to humanity.

THE FARMER A BUSINESS MAN

By W. H. Joyce, President Federal Land Bank of Berkeley

Going on the general principle that the more the farmer raises the more he will have to sell, I would say that every farmer should make the same arrangements toward perfecting his equipment, securing seed and properly financing himself as he would in any other year.

A farmer is a business man and as such must continually make provisions for the future just the same as any other business man would do. We should all go right ahead on the even tenor of our way doing whatever seems best to us and leaving the future in the "lap of the gods." There is no more reason why a farmer should ask himself what prices he is going to receive for his coming crop than that he should ask himself what the weather is going to be in the future. Man proposes and God disposes, but if man refused to propose and act upon his proposition simply because he did not know how God would dispose, it would indeed be a sorry world.

This is not time to "weary in well-doing." The world is still short of food and staple commodities, and regardless of what prices he might receive, the fact still remains that the more one produces the more he will have to sell. It is extremely unlikely that the cost of his products will exceed the prices he will get for them.

* * *

J. W. Garthwaite, Oakland Bank of Savings, writes of busy times preventing review requested of him, with hopeful expression for the future.

THE PAST YEAR AND THE OUTLOOK

By R. H. Taylor, State Department of Agriculture

THE past year for the California farmer has unquestionably been one of the most problematical he has had to face for a long time, not from the standpoint of returns for his products, because they have been generally high, but from the uncertainties incident to the continuation of his business. Costs have been excessive and production has been precarious.

First, the close of the war left the farmer uncertain concerning the prospects for the new year's crops. No one was sure what effect the shutting down of war industries would have on prices generally. Prices were soaring with no prospect of relief. Supplies incident to the conduct of his business were difficult to secure and when finally obtained were generally of inferior quality. His own living expenses kept increasing.

Labor conditions went from bad to worse. High wages in the cities attracted most of the desirable labor and that left in many cases became more and more unreliable. The shifting labor demanded higher pay and shorter hours, cutting down the possibility of production by the shorter hours and in addition did less in proportion to the time than when the hours were longer. Then, with a greater amount of money in hand after a shorter period of work, such labor took vacations without warning right in the middle of the busy season, especially in harvest, leaving the producer to shift for himself, unable to find the help or to do it himself. The result was a considerable crop loss in many instances, which in the aggregate has been very great.

The uncertainty and unreliability of much of the available labor prevented the cropping of thousands of acres which would otherwise have been producing.

Another major difficulty preventing maximum production has been lack of adequate transportation facilities. This has been especially serious with the perishable products, as most fruits and vegetables.

Lack of sufficient rainfall during the last winter and spring has further prevented maximum production where irrigation was not available in ample quantities.

In spite of these handicaps the California farmer has been producing to the limit of his ability and yet the cry is for more. There is nothing that will bring down the high cost of living like increased production, not only on the part of the farmer, but by everyone. The answer to the high cost of shoes is more shoes, to the high cost of clothes is more clothes, and to the high cost of food is more food. The answer to the laborer who wants cheaper food is to produce more food by his labor. This is so simple as to be axiomatic, yet labor as a whole does not comprehend it.

The California farmer has accomplished wonders in spite of the manifold difficulties. Chief among these accomplishments has been his effective method of cooperation. There has been a long and loud cry against the profiteers. The farmer through his cooperative methods of marketing has done more to stabilize markets, reduce

Continued on Page 854.

Agricultural News Notes of the Pacific Coast

Northern California

Yolo County grew 30,000 tons of sugar beets this year.

Colusa has voted $20,000 in bonds for building a swimming pool.

Gridley, Butte County, is to have a $335,000 cannery on a 13 acre site.

The largest can factory in the state is the one recently completed at Oakland.

The ice crop of the Feather River in Plumas County is now being harvested.

The cherry growers of Santa Clara County have organized to get better prices.

A new dried milk plant will be built at Point Reyes Station, Marin County.

Oroville, Butte County, lays claim to shipping the first 1919 olives to Eastern markets.

Mountain lions are becoming a serious menace about Nevada City, Nevada County.

A new barrel manufactory has just been completed at Winehaven, Contra Costa County.

Contra Costa County officials say the last season's rodent war saved the county $83,722.25.

Rice at Colusa has reached $6.71 per hundred and is expected to reach $7 in the near future.

The pear acreage of Butte County will be heavily increased during the present planting season.

Alameda County is to have the largest woolen mill west of New England, to employ 1,000 persons.

A movement is on foot at Benicia, Solano County, to drain and fill the swamps for factory sites.

Hop growers in northern counties announce prohibition will force them to grow other crops in 1920.

Reports from Butte County show that the orange crop will be much larger than that of last year.

Shasta County's fair at Anderson was such a success that a permanent fair association has been formed.

The Sperry rice mill just completed at Chico, Butte County, is the most northern one in the United States.

Ranchers in Northern California want more stringent laws to govern fruit and nut thefts by auto parties.

The tobacco growers of the Sacramento Valley will erect a large tobacco factory, site not yet determined.

In Butte County the Gridley district chamber of commerce organized with 260 members, half of whom are farmers.

A black silver fox farm has been established in El Dorado County; three pairs of breeders cost $2,600 a pair.

Rains have been so heavy about Redding, Shasta County, that trains and traffic have been seriously delayed.

The California Bean Growers Association has opened a district office at Sacramento to wage a campaign for membership.

Nearly 100 horticulturists and orchardists are enrolled in the horticultural short course at the Davis university farm.

In Butte County the horticultural commissioner estimates 2,400 orange trees have been killed by mice girdling the trunk.

Central California

San Jose has 38 canneries.

Last year 1,800 acres of prunes were planted in Tulare County.

Clovis, Fresno County, ships five cars of raisins per day to England.

Orange shipments from Lindsay will total 1,300 cars for the present season.

Lindsay, Tulare County, reports its season's citrus shipment will total 1,500 cars.

Tulare County growers of pomegranates netted five cents a pound on Eastern shipments.

A Watsonville apple shipper was last week fined $150 for sending out defective apples.

Hollister, San Benito County, reports no more rain at present is needed in that district.

Porterville, Tulare County, navels have been selling in Eastern markets for $4 to $4.50 a box.

Modesto, Stanislaus County, has voted $289,000 in bonds to be used in municipal improvements.

Bishop, Inyo County, is seeking to have Red Rock canyon near that city declared a national park.

The top price at the last Modesto, Stanislaus County, sale was $13.75 a hundred for a carload of hogs.

The Selma, Fresno County, cannery had a short tomato run by reason of crop failure and early frosts.

The El Pescadero ranch of 13,000 acres, near Tracy, changed hands recently at a price of $1,435,000.

Fresno County produced 3,145,545 pounds of butter and 451,163 pounds of cheese during the past year.

Livingston, Merced County, this year shipped 323 cars of grapes as compared with 244 cars in 1918.

Six Hanford, Tulare County, school boys planted a quarter acre each of sorghum and each cleared $30.65.

The Terra Bella, Tulare County, cannery has just finished packing more than 27,000 cans of tomatoes.

The fig growers about Dinuba, Tulare County, are back of a movement to erect a cannery for that district.

The last farm bureau hog sale at Tulare was 488 hogs that ranged in price from $12.55 a hundred to $14.60.

The winery at Clovis, Fresno County, is being dismantled to be shipped to Buenos Aires, South America.

The Merced-Stanislaus Sweet Potato Growers Association, recently incorporated, is getting $3.50 a hundred for cellar sweets.

Seventy acres of rich Tuolumne River bottom land near Turlock, Stanislaus County, sold for $1,000 an acre without a crop of any kind.

The Tulare County Cooperative Poultry Association reports November as the biggest month for business and prices the highest ever known.

The Fresno County board of supervisors has approved the electrification of artesian wells on the James ranch in order to develop 27,000 acres of land.

A Japanese, with wife and three children, stepped off the train at Porterville last week and was induced by the police to purchase a ticket to another town and hustled aboard the first train

Southern California

There are 603,841 acres under the Imperial irrigation district.

Ventura County has decided to erect a war memorial building.

A new cement plant is being built at Whitewater, Riverside County.

Orange County's 1919 walnut crop is valued at more than $5,000,000.

A large fish cannery is being built at Newport Beach, Orange County.

A vigorous campaign is on now to rid the Palo Verde Valley of Johnson grass.

A Yucaipa apple shipper is to make a test case in the apple standardization law.

The Irvine Walnut Association of Orange County this year shipped 865 tons of nuts.

The American Fruit Growers is building a warehouse at Anaheim 60 by 300 feet.

The Victor Valley, San Bernardino County, shipped a total of 89 cars of fruit in 1919.

The Pomona Valley received an average of five inches of rain up to December 10.

A new firm, the Santa Ana Preserving Company, is erecting a factory at Santa Ana, Orange County.

The Yucaipa Apple Growers Association of San Bernardino County packed 72,300 boxes of apples in 1919.

The first Eastern vegetables from Brawley, Imperial County, were two cars of spinach shipped on December 11.

The 1919 citrus crop of Orange County is the heaviest ever grown there and in value will total $15,000,000.

Imperial Valley cotton growers held a meeting in El Centro recently to discuss means of getting better cotton seed.

The Artesia section of Los Angeles County this year shipped 224 cars of sugar beets, 150 cars less than in 1918.

The railroad to the new townsite of Ripley, on the eastern edge of Riverside County, will be completed February 1.

A Riverside firm has issued a bulletin calling attention to the local section as a natural home of pecan orchards.

On the Faries ranch near Indio 75 date palms of the 1913 importation yielded 2,700 pounds of fine Deglet Noor dates.

Eucalypts will be planted in the dry, windswept country east of Ontario in San Bernardino County, to prevent soil shifting.

Pomona voted a $30,000 bond issue on December 11, the proceeds to be used for needed street paving, jail and storm drains.

The directors of the orange show to be held in San Bernardino in February have leased Urbita Park and will cover ten acres with big tents.

The Santa Barbara chamber of commerce is carrying on a campaign for the planting of wild flower seeds along all highways leading to the city.

The city of Riverside has been given a permit by the forest service to use 23 acres in Bear Valley, San Bernardino County, for a municipal playground.

The Coast and General

Canada's apple acreage for 1919 is twice that of 1918.

Oregon has more than 8,000 acres planted to walnuts.

Seed potatoes are scarce in both Colorado and Idaho.

A heavy acreage of figs is being planted near Umatilla, Florida.

The biggest cabbage acreage in Texas is 450 acres at Asherton.

Potatoes in Oregon are higher, selling at from $3.50 to $3.75 a bag.

The Eugene, Oregon, fruit growers shipped 49 cars of apples in 1919.

The California lettuce crop is estimated at 9,500 acres, which will fill 4,328 cars.

The Mosier, Oregon, fruit growers have built a $25,000 community packing house.

An immense deposit of high grade gypsum is being developed at Winkleman, Arizona.

Twenty-one islands in Prince William Sound, Alaska, have been leased for fox farming.

A movement is on foot to hold a potato show at Los Angeles for the entire Pacific Coast.

More than 250 cars of apples were produced this year in the district about Lewiston, Idaho.

Canals have just been finished for the irrigation of 10,000 acres in the Walker Basin, Oregon.

Washington prices for turkeys at Stattle and Tacoma are 35 cents live weight or 45 cents dressed.

Four carloads of dairy cattle were shipped from Chandler, Arizona, to Havana, Cuba, on December 10.

At the Yuma sale of government lands 175 acres were sold at prices ranging from $180 to $500 an acre.

Farmers around Svenson, near Astoria, Oregon, are setting out a large acreage of the New Oregon strawberry.

Cotton growers of Graham County, Arizona, wish to purchase 1,500 pounds of good Mebane seed for next year's planting.

The 1919 crop of peppers in the Isle of Pines is about 75,000 crates and 400 acres of other vegetables are being grown.

The largest cargo of apples ever leaving the Hood River Valley in Oregon was 25 cars in one train recently sent to England.

A grade cow of mixed breed at Florence, Washington, produced 1,132 pounds of milk and 60 pounds of butter during October.

One acre of Delicious apples at Selah, Washington, is said to have returned a net profit of $2,000 for each of the last four years.

One Guernsey cattle raiser near Astoria, Oregon, recently purchased 31 Guernseys in Wisconsin, 17 of them importations from the Guernsey Isles.

A farmer at Harmony, Skagit County, Washington, harvested 75 bushels of wheat per acre from January sowing, worth $150 per acre at the mill.

The government is asked to apportion the 2,000,000 acres on the Klamath, Oregon, reservation to the 1,150 Indians living there, so that they may develop the farms.

The Outlook

The symposium begun on third page and continued on others affords a most excellent review of producing conditions on this Coast

It is by the Farmer for the Farmer

THE WALNUT OUTLOOK

By Carlyle Thorpe, Manager California Walnut Growers Association.

AS the population of the United States increases, so also does the area of improved farm lands. While it is true that our population is increasing at the rate of 21 per cent every ten years and that the acreage of improved farm land is increasing only 15 per cent during the same period, nevertheless the unimproved area which is largely used as grazing land for cattle is constantly becoming very limited. It seems most apparent that the area of cheap grazing land in America will continue to diminish and as it does we may expect a shorter production of cattle with a corresponding higher level of prices for meat.

The American public is already giving considerable thought to possible meat substitutes. Nuts seem to be the most ideal substitute for meat, and at present prices, of these two foods, nuts are really much the cheaper when measured in actual food vaiue units.

Thus it is not surprising that the consumption of nuts in America should be so rapidly increasing. Wainuts are generally conceded to be the most popular nut on the market. They are among the most nourishing foods, containing 3,180 calories per pound as against beefsteak, for instance, with less than 1,000 calories.

Few of us appreciate the fact that the output of California walnuts has more than trebied since 1914, this year's crop reaching the remarkable total of 53,000,000 pounds, or more than the entire United States consumed of both domestic and imported walnuts in 1914. Still the goods have moved out at prices that have proved generally profitable to the growers, which is certainly evidence of the fact that many people are using nuts as a substitute for various kinds of meat.

It seems easily conceivable that America wiii ultimately consume on an average one hundred to two hundred million pounds of walnuts annually, and at prices that will prove profitabie to producers. There is perhaps less chance of overproduction in the California walnut industry than in most other orchard undertakings. The crop is one that is comparatively easy to produce and harvest, is not as susceptible to damage by the elements as most other tree crops. We may thus expect that the walnut industry in this state will rapidiy continue to increase and to prove generaily profitable.

PROSPECTS OF THE RAISIN GROWER

By Wylie M. Giffen, President California Associated Raisin Company

ON AN average we have probably never had a better year in the history of the business than the one just closing. Crops have been good, weather conditions for curing have been exceptionally good and prices far higher than we have ever dreamed of getting. Of course the increase in price has been largely offset by the increased price of labor, and in fact everything that enters into the producing of grapes, but after aii aliowances are made for these there are but few fruit growers in California that will not make at least some money. I think, however, this is not alone true of the fruit growers, but of the farmers the world over, and the prosperity we are now enjoying here is being enjoyed by the producers of corn, wheat, hogs, beef, sheep, and in fact practically all other farm products.

As to the future, of course, as you suggest, a prophecy made today might look very foolish a year hence.

In regard to our business, as far as our organization is concerned, we are neither trying to encourage nor discourage planting. We believe if the growers continue to sell their product through their own organization so that these products can be advertised, that the consumption can be kept up with the normai planting which is now from 10,000 to 15,000 acres a year, and, of course, increasing the total amount of raisins very rapidly. From the time we were producing 20,000 tons of raisins a year in 1890 until we were producing about 70,000 tons in 1912 there never was a year when we did not complain of overproduction, and there never was a year in that time that an entire crop of raisins sold for more than the cost of production to the producer. There were times when parts of some crops sold for a fair price, but never an entire crop, and the reason attributed for it was the fact that there were too many raisins produced. Last year's crop amounted to about 165,000 tons and was entirely eaten up. This year's crop wiil amount to 175,000 or 180,000 tons and there would be no difficuity in selling 40,000 or 50,000 tons more than we have. Of course, there are many contributing causes to this great increase in consumption. There has been some reduction in the amount of importation of currants, and, of course, the unusual demand for all food products has been helpful as far as raisins are concerned. In addition to this there are probabiy a good many raisins that are finding their way into private homes these days to be used in the manufacture of family liquor, but we feel absolutely sure in our own minds that the biggest single factor in the increased production of raisins has been the fact not only that we are advertising extensiveiy but that we are marketing in a fairly inteliigent way, and to reply in a word to your question as to the prospects of the raisin growers I would say if we continue these same activities it is my judgment that we can sell for at least a fair price as many raisins as we can produce in this state for many years to come.

PRUNE AND APRICOT GROWERS

By F. M. Coleman

THOSE who grow prunes and apricots have been favored with the best year of their experience in 1919. The largest prune crop, about 250,000,000 pounds, with much the largest price ever received, naturally puts the grower in a pleasant frame of mind. The cooperative pian of marketing did not make the crop but is very largely responsibie for the price.

At the start of the war and just before the organization of the California Prune and Apricot Growers, Inc., the outlook for these fruits was unfavorable enough to reduce planting to the minimum. During the last three years planting has revived to the extent of using all possible nursery supplies; 80,000 acres of bearing prunes and 40,000 acres of bearing apricots are being increased now at the rate of 14,000 acres of prunes and 5,000 acres of apricots annually. Very much has been done to stabilize the markets and to improve and standardize quality of fruit.

The grower has recently learned that the success of his industry depends as much on efficient and scientific marketing as on the like character in production.

A great light has dawned on the producer, revealing his ability to save unnecessary waste in added cost between producer and consumer by the modern system of cooperative marketing.

The outiook in our industry is very favorable provided due intelligence and caution is exercised in directing its development. A profitable product always insures an increased production, which puts a very heavy responsibility on the marketing part of our industry to develop and maintain a demand at a profit, equal to the increasing suppiy.

DRIED PEACH PRODUCTION IN CALIFORNIA

By J. L. Reeder, Assistant Manager, California Peach Growers

THE question is often asked by those who contemplate planting new or additional acreage: "What should I plant to secure the best returns on my investment?" As representatives of the California Peach Growers we naturally say "peaches, preferably Muirs or Lovells, provided the soil is suitable." It naturally follows that a recommendation of this kind will carry very iittle weight unless it can be supported by facts which are either a matter of common record or emanate from some recognized authority. In order that a comprehensive view of the situation may be obtained without unnecessary detail, we must recall briefiy the condition of the peach orchards, as weil as the market, prier to the organization of the California Peach Growers as compared with conditions at the present time.

For several years preceding our organization the average price secured by the growers for dried peaches (average grades) did not exceed three cents per pound. Through the efforts of the association we were able to return to our growers an average of the following prices: 1916, 6½ cents; 1917, 8.32 cents; 1918, 11 cents per pound, based on average gradings. While the present season is not sufficiently advanced to enable us to determine how much we shall be able to return on the 1919 crop, we feei confident that it will show an advance over the price paid last year, which will be quite satisfactory to our members. In addition to the above a dividend of eight per cent was paid to the stockholders. During the period when such extremely low prices prevailed many orchards became diseased, were aliowed to die from lack of proper care, or were uprooted and replaced with other crops in order that the farmer might receive a reasonable return for his efforts.

The stability of the market, which is the direct result of cooperative effort, together with the very favorable prices which have been secured during the last four years, encourage the producer of dried peaches to the extent that he is willing to give his orchard the proper care and attention. As a result of improved conditions we now see progressive farmers on every hand endeavoring to improve the quality of their fruit by using advanced methods of pruning, spraying, using fertilizers or cover crops and otherwise safeguarding the health and productiveness of their trees. It is noticeable that many growers have learned that proper thinning is necessary to produce a larger percentage of the higher priced grades, as Fancy and Extra Fancy.

The method of packing and marketing dried peaches has also been an important factor in making their production a safe investment. The elimination of the Extra Choice and Jumbo grades correspondingly raised the standard of our other grades. The introduction of our practicaily peeled peaches (the machinery for the manufacture of which is controlled by our own patent) has, on account of the sanitary methods of preparation and attractiveness of the product itself, created an enormous demand throughout the United States and other countries. The practically peeled peaches are packed in attractive 11 ounce, two pound and five pound machine sealed cartons, also in bulk, 25 pound and 50 pound cases.

The foregoing will, we believe, justify our assertion that peaches will be a profitable investment, especially when the fact is taken into consideration that but a very limited acreage has been planted to peaches during recent years to replace those which died or were taken out. The average production per year of dried peaches for the past five years in this state has been approximately 30,000 tons, and as our intensive and systematic national advertising is constantly increasing the demand far in excess of our ability to supply, we feel that our suggestion to plant peaches is worthy of careful consideration.

SHALL WE PLANT?

By Frank L. Palmer

YOU have asked me to express my opinion upon two important questions. The answer to one of them is clear—at ieast I think it is clear—and the answer to the other seems most sadly obscure.

First, "Shali the orchardist plant to the limit?" As to citrus fruits I think the answer should be "No." There already exists a considerable overplanting of both Valencia oranges and iemons. There is a better outlook possibly for Navels but the marketing season for Navels is year by year being shortened. The late market which a few years ago was the most profitable of the year, has more recently been steadily encroached upon by the early shipments of Vaiencias, and at the present time the eariy Navel market is competing with an oversuppiy and consequent late shipments of Valencias. So that the Navel market is being shortened at both ends. The most serious aspect of the situation is that there are in Orange County large plantings of Vaiencias not yet in bearing, that in Tulare County there are perhaps 15,000 acres of Navels not yet in bearing, and that in Ventura County and other sections there are large plantings of lemons not yet in bearing.

I understand the sentiment in Tulare County among the most experienced orchardists is that there is more

Continued on Page 855.

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Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Twenty-five thousand tons of California walnuts this one year is the result of tilth and upkeep such as indicated in the cover illustration. This exceptional care has been given an impetus by the prices which have been obtained during the past few years. This year the state produces its biggest crop for which it will receive the biggest price in the history of the industry. Practically every available tree has already been purchased and contracts are now being made for 1921 delivery. A great industry, a growing industry.

LOOK UP, NOT DOWN

Look forward and not back—though we have looked backward in the present issue of the Cultivator to the extent of securing data for conclusions as to what the future has in store for us. Some of California's largest producers have aided us in this backward look or review of California's conditions agriculturally. This in order to afford the thinking farmer an opportunity for thinking ahead.

The coming year will be a great one in California's productive industries if the estimates of thinkers whose articles are in this issue are verified. And everything looks toward such verification. It will be many years before the world will be producing normal crops. America will be compelled to take up the burden of feeding the world to a greater extent than she has ever done before. Before the war American agricultural exports were gradually decreasing. Year by year our population with its demands has increased more swiftly than our production. The war made a material change, and with food economies and improved methods and appliances the farmer was enabled to overcome the labor shortage, and this country exported a tonnage undreamed of as a possibility. We are still producing, but the food and other economies have been greatly lessened.

HAPPY NEW YEAR

While the joy bells ring with the glad Christmas time passing and the new year coming there is occasionally a touch of pathos and here and there suffering but Peace on Earth is coming and Good Will toward all will prevail.

Speed the Day.

For our readers, every one, we hope this may be a year full of opportunity for service, opportunity for speeding the day of Peace and Good Will, opportunity for Happiness.

MY CREED

I believe in my job. It may not be a very important job, but it is mine. Furthermore, it is God's job for me, if I am honestly trying to do His will. He has a purpose in my life with reference to His plan for the world's progress. No other fellow can take my place. It isn't a big place, to be sure, but for years I have been molded in a peculiar way to fill a peculiar niche in the world's work. I could take no other man's place. He has the same claim as a specialist that I make for myself. Yes, I believe in my job. May I be kept true to the task which lies before me—true to myself and to God, who intrusted me with it.

I believe in my fellow man. He may not always agree with me. I'd feel sorry for him if he did, because I myself do not believe some of the things that were absolutely sure in my own mind a dozen years ago. May he never lose faith in himself, because if he does, he may lose faith in me, and that would hurt him more than the former, and it would really hurt him more than it would hurt me.

I believe in my country. I believe in it because it is made up of my fellow men—and myself. I can't go back on either of us and be true to my creed. If it isn't the best country in the world, it is partly because I am not the kind of a man that I should be.

I believe in my home. It isn't a rich home. It wouldn't satisfy some folks, but it contains jewels which cannot be purchased in the markets of the world. When I enter its secret chambers and shut out the world with its care, I am a lord. Its motto is service, its reward is love. There is no other place in all the world which fills its place, and heaven can be only a larger home, with a Father who is all-wise and patient and tender.

I believe in today. It is all that I possess. The past is of value only as it can make the life of today fuller and freer. There is no assurance of tomorrow. I must make good today.

FOR THE THINKER

At a meeting held in Los Angeles last Saturday, Dean Thos. Forsyth Hunt of the college of agriculture made an address on the motive for better farming. It was a farm bureau meeting to consider matters of rural betterment. As an incident of the address one paragraph touched upon the Japanese question. Here it is:

"In a certain county in a certain state of a country beloved by all of us, one-half of all the children born outside the incorporated cities in 1917 had two Japanese parents, while one-third had two Mexican parents. It is a fair guess that these races are not far from twice as prolific as the white race which occupied the main city of this wonderful country. I venture that there is not a Protestant church in that city whose cradle roll will maintain its membership. It follows as a mathematical certainty that if conditions continue the Japanese and Mexican races must outnumber the white race, and it is only a question of time in which the principal city of this beautiful county, which is now conducting a better community conference, will have either a Japanese or a Mexican mayor, I am not quite sure which."

Yet the unthinking sometimes say Californians are inspired by race prejudice and race hatred. Californians and Pacific Coast people generally are thinking a lot and talking a little as to the heritage of future generations.

AMERICAN FARM PRODUCTS

It is but a very few years since the department of agriculture called attention with much pride to the fact that the annual production of farm crops of the country totaled in value more than ten billion dollars.

Absolutely accurate figures as to the entire farm production may never be had, but approximately this year's farm production, including livestock, totals in value over 25 billion dollars. In corn, wheat and other cereals alone there is more than the ten billions of the total production of some four or five years ago. Then there is hay with another five billions. And one of the minor items is a two billion dollar seed crop, which is surprising because we have looked at our importation of sugar beet seed, Dutch bulbs and other agricultural seed and considered that America produces no seed. In fruits the country has produced over one billion dollars' worth. This is not surprising to the Californian acquainted with the citrus industry which alone is responsible for one-tenth of a billion. Then animal husbandry is responsible for two billion dollars' worth of hogs, one billion worth of sheep, two billion of dairy products. Then comes the little old farmyard hen. A half a dozen years ago we predicted she would some time lay $500,000,000 worth of eggs. During the past year eggs and other poultry products totalled in value over one billion.

But what is a billion dollars to the human mind? If Adam had saved a dollar a day and lived to the present he would only possess all told about two million—that is, unless the savings bank had aided by compounding interest. It takes a thousand million to make a billion.

KEEPING UP INSURANCE

The government, through the bureau of war risk insurance, wrote approximately $40,000,000,000 of insurance upon the lives or more than 4,500,000 service men and women. This is a larger volume of insurance than is in force in the old-line insurance companies in the United States. Approximately 90 per cent of the men in active service during the war were protected by war risk insurance, and the average protection was $8,700.

Great numbers of the boys are now dropping their insurance. They should keep it up and it may be still renewed if it has been allowed to lapse.

THE OUTLOOK

Continued from Page 851

costs and prevent profiteering than any other one thing.

In the year 1920 there will be opportunity for greater cooperation than ever before. The farmers of the state must and will unite, not alone for more effective marketing of their products, but to improve their purchasing powers, to aid in production, to protect themselves from unjust legislation and to be generally on the alert for whatever may come.

Two of the historic steps taken by the farmers in 1919 were the formation of the state farm bureau and the organization of the horticultural and agricultural legislative committee of the farmers' cooperative organizations of the state. These will both be heard from in 1920 and through them the farmers of California will speak in no uncertain tones.

The development of the land settlement idea is taking root deeply and next year will be firmly grounded in the ratification of the $10,000,000 bond issue provided by the last legislature. This is significant in view of the pressing need for a thorough consideration of the Oriental problem as it faces us at the present time. The farm worker of today will be the farm owner of tomorrow without a doubt. The future of our great state lies largely in the hands of our people to decide in 1920 whether we will help to put our own children on our farms or those of a foreign race.

The protection of our agricultural industry from dangers within and without our borders devolves upon the newly created department of agriculture, another accomplishment of the year just closing. The plant quarantine to prevent the introduction of pests and diseases not now existing in this state; the standardization laws to prevent deception and the sale of fruit unfit to eat, thereby protecting both producer and consumer; the control of infectious diseases of animals, and the many other phases of the department's work are becoming increasingly effective even though seriously hampered by shortage of funds. The combining of the various branches of the agricultural work into one department is already telling in increased efficiency and will even more during 1920 in providing the needed protection to the California farmer, and he must respond with his hearty cooperation to render it effective.

State Director of Agriculture G. H. Hecke in a recent article said: "In this new era of advanced agriculture, the intelligent development of those projects which make for the agricultural progress of the state should be seriously considered by all who have the interests of the commonwealth at heart. We must exclude the things that appeal to us personally at times and promote the things that vitally affect the people at large."

Here, then, is the opportunity and the call for the California farmer in 1920. Will he rise to it? We believe he will. If he does, we look for a great development of agriculture the coming year, despite the problems of labor, transportation and increasing cost of supplies, for he will attack and solve these problems in the big way that he has done with his other problems in the past. The farmer has demonstrated that he is the balance wheel in American economy and he will continue to be in 1920.

* * *

J. M. Henderson, president Sacramento Bank, touches in his article upon animal husbandry and its outlook. See his article at top of Page 864.

SHALL WE PLANT?

Continued from Page 853.

encouragement to plant figs, peaches and olives than to plant orange trees, and I concur in that opinion.

Secondly, as to the general business outlook for the next few years, I am not so rash as to be willing to venture a prediction.

There never was a time in the history of our country when Americans were confronted with problems of greater importance to our social welfare. The underlying causes of the present social unrest and its solution are questions which are taxing the wisest minds. If they are settled right, settled uopn a basis of peace and justice and good will between employers and employed, there is a period ahead of us of unprecedented prosperity, but at the present moment the outlook is not encouraging. The spectacle of the United States senate doing politics at a time when the highest patriotism is demanded is not pleasant to think about. Both Republicans and Democrats seem more concerned with partisan advantage than with adopting the treaty of peace. And meanwhile every avenue toward a new era of reconstruction and progress is apparently blocked by the failure to enact a formal declaration of peace.

Let us not be deceived by politics masquerading as patriotism uor by ambitious politicians masquerading as patriots. It is high time that the force of public opinion should express itself in such unmistakable terms that public servants, honored with the highest places in our government, should remember that "you can't fool all the people all the time."

THE CITRUS

By A. Layman

SHALL I plant oranges and lemons?"

Surely, provided you can buy the stock.

Every nurseryman is already sold out on navel stock; there is still a small supply of Valencias and Eureka lemons. And the new year will not be very old before these few remaining trees will be picked up. The past year has been a wonderful one for the orange grower; the lemon grower has done well, but the return has not been so liberal as he expected.

Following the usual custom of Californians, and perhaps of all producers, we are observing what our neighbor is doing, and, of course, following his example. This accounts for the fact that all navel trees have been gathered in whereas a few years ago Valencia trees were sold and navels were proving a drug. Now, if planters will follow the other rule, in effect, to plant what others are not planting, a better result will be secured. Like everything else, from salt to sugar, trees are high. Ordinarily deciduous trees are commanding $50 to $60 per hundred; walnuts as high as $2.75 each; one year old orange or lemon bud $1.25 to $1.50, two year old bud $1.50 and up. These were the prices a few days before the Cultivator went to press.

Excepting where long distance shipments are made, nursery citrus trees are now sold balled. Where this work is done carefully and the setting equally so, 100 per cent stand should be secured. Plant 20 to 28 feet apart according to soil and as to whether you are planting for your own care and keeping or, as one orchardist has expressed it, "for sale to the other fellow." Where one wishes a long lived orchard which will produce in later years he should not plant closer than 24 to 28 feet. Dig holes deep and broad in soil perfectly prepared, set the balled trees no deeper than they were in the nursery. At least, such should be the case if the bottom of the hole has abundance of fine loosened soil as it should have. The ball will then settle so that the tree will be somewhat lower than it originally stood in the nursery. Fill in with dirt, pack very lightly so as not to break the ball, follow immediately with water, cultivate, irrigate again in two weeks, protect from sun, rabbits, etc., by using tree protectors. If nothing better, tie old newspapers around them; where one's time is valuable, the prepared protector is best and cheapest. Plant a few rows of corn for winter protection.

In no case plant more than can be given the best of care; only the exceedingly rich man can afford to give indifferent care to an orchard of citrus trees. The cost of land, the cost of trees, the cost of labor call for most careful attention to the young orchard if these costs are ever to be returned.

PRUNES, PLUMS, CHERRIES

By Leonard Coates

NOT having reliable statistics at hand it is not possible to give with any degree of accuracy the number of trees planted of these various fruits. As a rough guess, we may suppose 1,500,000 prune trees planted last year and about the same in prospect the present season, which number would be increased if the stock were available. Probably 50,000 plum and 25,000 cherry trees would be a reasonably safe guess, with some increase in plum trees for this season, and the same being restricted owing to shortness of supply.

The future is particularly bright as to these fruits, simply because of increased demand and ever expanding market and the fact that we have a practical monopoly in the production of large shipping and canning plums and sweet cherries for the same double purpose.

The great impetus given the prune will mean justifiably increased planting for many years. No one yet has any conception of the demand that will ensue as a result of the advertising campaign of the Prune and Apricot Growers to make known their "Sun-Sweet" brand, and it will be a market hitherto unexploited, for a majority of the readers of high class periodicals published in the East have had but little acquaintance with our dried fruits. And the great dehydrating campaign now going on will only tend to draw the thoughtful attention of the public to the benefits to be derived from eating more fruit especially when the expense is so much lessened by the reduction of transportation charges when water and tin are eliminated. Further than that, dried fruits, properly cooked, are more palatable and free from any possibility of injurious content.

Planting

When the trees are received from the nursery, after inspection is made, untie all the bunches and spread the roots in a wide, shallow trench, covering them with fine earth so that no spaces are left for air to enter. Water well if weather is dry. Your local inspector will help you in every way possible. Do not abuse him if he does not inspect your trees the moment they arrive; he is doing the best he can.

I always advise that the diameter of the hole is of more importance than the depth. After rains commence it is too late to "shoot" with dynamite, so dig large holes, at least two and one-half feet across and two feet deep, with bottom of hole convex, allowing for natural, downward spread of roots. Press some fine earth around the roots with the hands and then fill in. Do not let the point of union of bud or graft be more than one inch below ground after earth has settled.

Remember you can make no better investment than careful attention to all of these details. If your inspector

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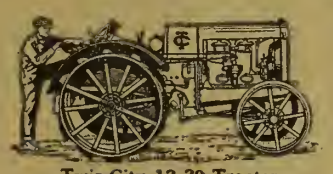

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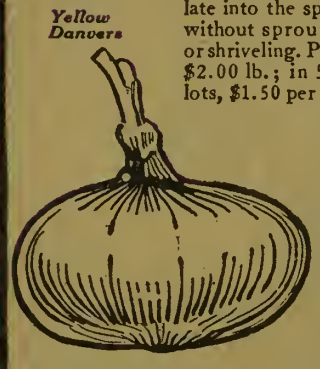

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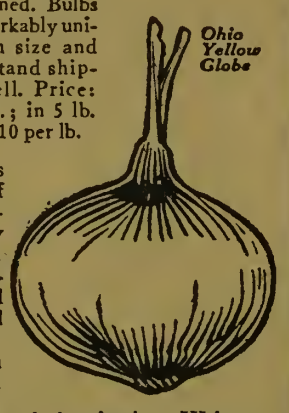

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When Writing Advertisers, Mention the Cultivator.

O. K.'s the trees it is the planter's fault if he does not get a perfect stand. One of the most prevalent causes of partial failure in young orchards is the neglect to keep roots moist all the time until they are permanently set in the ground. No better plan has been advised than the use of a barrel of water on a sled, drawn around while planting is going on with a bunch of trees in it and each tree placed in the hole while roots are still dripping.

Pruning

Dr. Whitten and his assistants are advocating the non-heading of a tree the first year and, from my own observation and experiments in our own orchards, I am inclined to agree, although for years I have advised that a tree should be left 24 to 30 inches high after first pruning rather than be cut to 16 inches, the usual way. Dr. Whitten's method causes all of the otherwise dormant buds to push out into spurs rather than to force a strong wood growth at top. Results have shown that this method will in a few years show a tree larger in diameter as well as prepared with fruit spurs to produce an earlier crop.

THE NURSERY OUTLOOK

By J. S. Armstrong

THE present unsurpassed activity in the nursery business began immediately following the signing of the armistice. At once the demand became strong for all lines of stock, ornamental as well as economic. Every rural home seemed to have neglected crops that did not tend to immediate food productioon, therefore in planting annual crops were largely substituted for fruit trees. When the fighting ceased there came a wave of reviving the home place and ornamentals were in active demand, followed later in the season by the planting of the home orchard, a variety of fruits for family use.

The 1919-20 booking season started earlier and stronger than any previous year and advance orders were received early in the season for the total available stock in some lines of deciduous fruit trees. This does not mean that the home planter will be unable to get the stock he needs, for every nurseryman reserves some of all lines to meet this select trade. But the outlook for the large commercial planters is that not more than 40 per cent of them will be able to get all they want in the way of deciduous fruit trees, grape cuttings, etc. As nurserymen do not finish digging this stock before the first of January, the surplus, if any, will not develop until that time. Catalogues are usually issued in December, and by that time growers have rather definite knowledge of what they can offer. They can not, however, risk reservation of a heavy stock or some of it will perhaps remain unsold.

The strongest demand has been for peaches, walnuts and apricots, and it is anticipated that it will still further increase in 1920. The outlook for another season is the brightest that ever faced the California nurserymen and includes every line of stock grown. Prices will keep pace with the increased market prices of fresh and dried fruits which have of late been unusually favorable to the grower. This statement calls to mind the splendid returns that came to some California peach growers near Redlands, who were fortunate in having bearing orchards of the J. H. Hale. These brought $63 a ton in the orchard, and no doubt the Hale peach will be extensively planted in Southern California. It is a fine freestone with all the firmness of a clingstone, with a flavor second to none. The best yellow cling peaches brought as much as $85 per ton. But all peaches are now under process of improvement, for slowly but surely propagators are adopting the same methods of bud selection followed by the best citrus growers for several years past. This will lead to a rapid improvement in type and no doubt all the peaches recently listed in the Cultivator by a local cannery superintendent will be extensively planted. The California fruit industry is but in its infancy, and with the rapid development so manifest at present, the nurserymen owe it to the grower to improve all standard varieties and develop them to the highest. This is now being done and the outlook is the brightest in history for a steady improvement of all fruits to the highest type possible. While peaches have the strongest call in the south, apricots and walnuts are good seconds, with no danger of overplanting if the best varieties are used.

The planting of cherries, pears, apples and prunes also in various parts of the state is rapidly consuming all the available trees now in the nurseries. The peculiar thing about the fruit tree situation is that there is an equally increased demand in every part of the state wherever fruit is grown commercially.

THE PROBLEM OF THE BEAN GROWER

By R. L. Churchill, Manager California Lima Bean Growers Association

WE are at a loss to know how best to reply to your letter. As you are probably fully aware, the bean market of the United States has been in a rather peculiar and uncertain condition for more than a year past. This statement applies with special emphasis to small white or navy beans, but in general has been true of all varieties. It has been rather difficult to understand why the consuming public has not purchased beans of all kinds very much more freely when a dollar expended for beans would procure for the purchaser a greater food value than was obtainable in any other product offered on the markets. There is no question but that people have spent money very freely to satisfy their desires for luxuries in foods, jewelry, clothing and other lines, and while complaining bitterly about the high cost of living have refused or failed to take advantage of their opportunities to buy the cheaper and in many cases equally good or better articles, available at lower prices. So far as the bean growers are concerned, this state of affairs has caused them to be practically, if not actually, the only producers of valuable food products who have been obliged to sell their product at prices below the actual average cost of production.

We, however, are not pessimists. If the conditions above outlined should continue for another year or two, bean growing would undoubtedly be almost entirely discontinued. We believe that the present state of affairs will be remedied in several ways. First, we think that the end of the wild wave of extravagance will soon come and that people will shortly begin to consider the value of reasonable economy instead of giving heed to satisfying every whim, and when that time comes beans, which are both cheap and high class food, will be given much greater consideration than they have been given during the past year or two. Our association is now engaged in a national advertising campaign that is designed to carry an educational message to the housewives of the whole country. Secondly, we believe that before another bean crop is produced congress will see to it that a reasonably adequate tariff is placed uopn all beans imported into the United States, thus giving some sorely needed protection to the bean growers of this country who otherwise cannot afford to grow beans in competition with beans grown in the Orient, where the labor and other production costs are only a fraction of the costs in this country.

We believe that every farmer should continue to do his best to bring his farm up to its fullest productivity and that in doing this he should exercise his best judgment in determining the crop that his lands will best produce and then grow that crop, whether it be wheat, alfalfa, sugar beets, rice beans or vegetables. The proper preparation and cultivation of the soil go very far toward insuring success. Our particular knowledge and interest is in the lima and baby lima bean industry. We have faith in its future. There are still many opportunities for improvement through better seed selection and consequent production of larger yields of finer quality

THE ALFALFA GROWERS

By G. H. Emory, Manager

OUT of the bewildering upheaval of the world has come a broader understanding. Our experiences have taught us that this must be an era of cooperation; that all must work together for the good of the world, the good of our country and of our own community. Without the spirit of tolerance and sympathy to bind us into one great body we must inevitably fall behind in the march of progress.

Alfalfa Growers Warehouse at Lemoore

Tbis new spirit of cooperation is impressing upon us the necessity of so planning our work that it may benefit others as well as ourselves. We must produce that which is needed by our fellows if we would secure for ourselves our portion of his products. The great body of consumers which depends uopn the labors of the producer must be better served if the producer is to find ready markets for his goods.

Among the farmers of California the cooperative idea is proving the means of benefiting both classes. It is undeniably true that the aim of the growers in forming a cooperative association is to assure themselves of a fair profit upon their investment and labor, while at the same time assuring the consumer a low price. To accomplish this it is necessary to eliminate every trace of speculation and speculators. In a word, waste profits must go.

This standard is the one by which the alfalfa growers of California are working. The 2,000 members are bending their efforts toward universal cooperation in the belief that it will result in increased benefits to both producer and consumer. Little more than a year has elapsed since a little organization of alfalfa growers at Riverside saw the need of a state-wide association. Since that day they have expanded and increased in membership until today their association is strong and healthy and daily increasing in power. Over 45,000 acres of alfalfa, in addition to 12,000 acres of milo and Egyptian corn, are represented in the Alfalfa Growers of California. Five per cent of the total production of the state is represented by the members of the organization.

Enthusiasm is unbounded among these members. The principles and purposes of the association are sound and unshakable. It is an organization which aims, simply and plainly, to get for the grower a fair share of the price that the consumer pays for his product, to eliminate the present method of marketing which permits artificial control of prices and withholding from the market of needed foods. The strength which comes with organization will enable the association to accomplish these aims.

Alfalfa growing today stands very near the head of California's producing industries. Over a million acres are devoted to the raising of alfalfa. It may be assumed that the average value of this land is not less than $250 per acre. When one considers the total investment that is represented by alfalfa lands, the amount is stupendous. Annual production is in the neighborhood of 5,000,000 tons, which represents a crop valued at over $100,000.000.

Broad and far-reaching vision is essential to the conduct of an organization which will organize the handling and distribution of such a crop. The tonnage which the association will market this year is only a small part of the total in the state, yet it involves countless varied activities. The simple goal toward which the association works, namely, the marketing of this crop to the right buyers at the right time, is not easy of accomplishment. It must take into consideration the improvement of farming methods, decrease of cost of production, increase of yields, and installation of business methods of cost determination. System, as found in the modern factory, must be applied to the farm. Storage facilities must be found, whicb means that warehouses must be erected and maintained. Grading and standardizing of the product must be simplified and consolidated. Analysis of production possibilities must be undertaken. Research work in developing additional districts and in creating new markets is essential.

It is evident that such great work cannot be accomplished under individual handling and distribution and that association is therefore a vital factor in the economic welfare of the industry. To the bettered systems of production and to the simplifying of distribution must be added the strength of a democratic organization which will work for the interests of everyone connected with the production of alfalfa or its consumption. This organization, operated on a non-profit basis, is personified by the present association of the Alfalfa Growers of California.

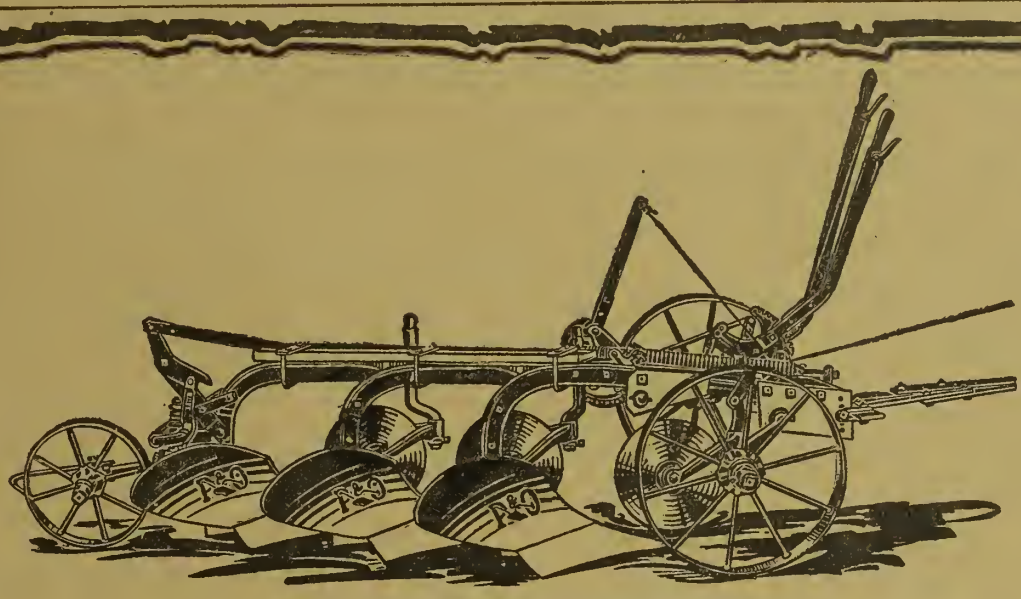
As an example of the development work which this organization is undertaking, there is the mealing of alfalfa hay. There is already a considerable foreign demand for California alfalfa meal, which has not received much consideration, yet which is capable of almost infinite expansion. The association has installed a mill at Bakersfield wbich is turning out a high quality of meal. Members in other districts are watching with interest the operations of the present mill and are in hearty accord with the plans of the association to put several additional mills into operation when the season opens for grinding. They realize that this can be developed into an industry which will be important among the commercial activities of the state.

Then again the association is already establishing warehouses as insurance against the certain loss which is incurred when winter storms can reach the hay. In the past growers have lacked facilities of this kind and as a result have been forced to throw their product onto an already glutted market and suffer a considerable loss. The new warehouses will be points of concentration to which can be brought all the products grown by members in each district. Members will own their warehouses at points convenient to their farms and operate them under the supervision of the home office in Los Angeles. Already warehouses for this purpose have been erected in Oakland, Bakersfield, Perris Valley, Lancaster and Imperial Valley.

The acreage of milo and Egyptian corn is considerable. Tbese products are receiving the same minute analysis and study as alfalfa, with a view to broadening their market and finding new uses for them. The peculiar qualities of these products and their value in certain lines of activities will be exploited. Such intelligent promotion in this field cannot but result in better conditions and resultant lowered costs to the consumer.

For every food product there is a willing buyer at some time and at some place, and at that time and place the product can be marketed at a fair profit. Scientific distribution will place the buyer, distant though he may be, in touch with the producer, to the infinite advantage of both.

Under the plan of the Alfalfa Growers of California that science is in process of demonstration, backed by the constructive, cooperative work of



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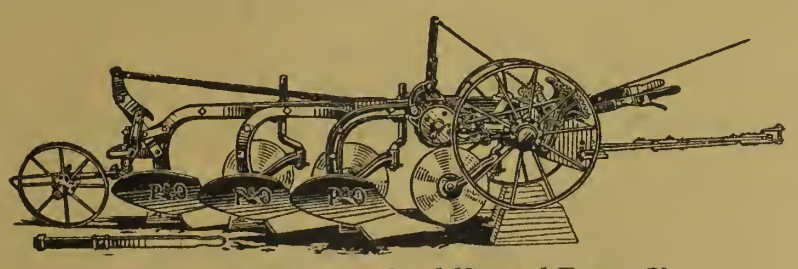

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its members who are united in a complete and proven plan calculated to forever banish the evils which now beset the unorganized producer.

FUTURE OF THE SUGAR BEET INDUSTRY IN CALIFORNIA

By C. H. Weaver

CALIFORNIA with its uniform climate and its rich soils offers ideal conditions for the successful culture of the sugar beet. Records show that California produces a sugar beet of exceptional quality, with special reference to its high saccharine content. Considering these natural advantages and the increasing demand for this staple article on account of the increasing rate of consumption, which reached 89 pounds per capita in 1914 against 15 pounds in 1870, added to the benefits derived from sugar beet culture, such as the possibility of stock feeding on the beet tops, we feel that no other industry has such a wonderful opportunity to rapidly develop.

Sugar beet culture is still in its infancy compared to the old sugar beet growing district of Europe, where the average yield per acre surpasses our average returns very materially. The explanation for this discrepancy must be found in our system of farming. For many years the single crop system was followed on the beet farm, and although our beet growers have produced good crops they have failed to return to the soil the plant food taken out by the sugar beets. They have wasted the valuable by-product, the sugar beet tops; they have failed to apply to their system of farming the most elementary rule of permanent agriculture, crop rotation and fertilization.

As soon as our farmers realize that the sugar beet has a place on every farm and that livestock husbandry is a necessary adjunct to successful agriculture, then sugar beet culture will become the leading crop of California. We feel that the California beet sugar industry offers the greatest opportunity in the world today, both to the grower and the manufacturer, from an economic and financial standpoint.

CARE OF YOUNG TREES AND PROSPECTS OF THE ALMOND, APRICOT AND PEAR

By J. E. Bergtholdt

PLANTERS should see to it that trees are immediately inspected by the receiving horticultural inspector and that roots are not exposed longer than necessary in the process.

Heeling In

Inspection accomplished take the tree home, the roots protected. Dig a trench in loose soil two feet wide, 14 inches deep. Cut strings, put trees in side by side, cover roots with fine earth, being careful that it is well filtered in among the roots. Give a copious watering when the trench is half full, then fill the balance of the trench to the same depth as the trees stood in nursery row.

If the trees open up dry on arrival, they should be taken from the package and buried in moist soil for several days and kept damp.

Preparing for Planting

With a sharp knife cut off all broken and bruised root ends. Cut back the tops to 14 to 24 inches, and if branched, cut back the branches to two or three buds, leaving three or four branches so pruned as to make a symmetrical tree.

Preparation of Soil

The preparation of soil for orchard planting is of great importance. By plowing deep and cross plowing and intensive cultivation the soil must be put in the best possible condition before planting; this preparatory work is laying the groundwork for a structure which is to stand for a lifetime. This is a most important feature and the soil where trees are planted should be placed in the best possible receptive condition.

Planting

Set tree, with the roots and tops pruned as per above instructions, to the same depth as set in the nursery trenches, with roots in normal position, filling in with fine dirt, settling the dirt well among the roots. Before the hole is completely filled it is beneficial to apply two or three buckets of water and then fill with fine earth.

Shading

On account of our long hot dry summer it is advisable to employ a tree protector. This prevents borers.

After Culture

A tree just transplanted has undergone a severe surgical operation. Its vitality, until it has recovered therefrom, is necessarily low. Its growth depends upon the care received immediately after it is transplanted. Irrigation, when available, should be regularly but not too copiously applied. Intensive cultivation works wonders.

* * *

FUTURE OF ALMONDS, APRICOTS AND PEARS

Almonds

Number of trees planted last year, 1,170,000. Number of trees available for planting this season and that will likely all be used in planting, 880,000.

Almonds in North America are grown commercially only in California. Can be grown successfully only in localities free from danger of frost damage, and as a result the limited acreage adapted to almond culture in California will in course of time be unable to adequately supply the consumption of the North American markets.

Apricots

Number of trees planted last year, 899,000. Number of trees available this season and that will likely all be used in planting, 474,000.

Apricots, like almonds, are grown commercially only in California, are adapted only to districts free from frost damage. The acreage where they can be successfully grown is therefore limited. Green, canned, and dried, they have the monopoly of the North American market, and canned and dried the possibilities of their export trade is unlimited. For that reason the available apricot acreage in the state can never over supply the market and in those districts adapted to their culture apricots are a safe bet.

Pears

Number of trees planted last year, 1,004,000. Number of trees available for planting this season and that will likely be used in planting, 788,000.

Pears have a wide scope of adaptability. The coast valleys of California and the foothill regions of the interior are practically immune from serious blight damage, while in many of the interior valleys the blight can be so controlled as to make pears, in spite of the blight, one of the most profitable fruits to plant.

While pears are grown in many localities of the Northwest and throughout the East, yet no other section has the long dry California summer, but has either, as in the Northwest and Middle West higher altitudes, a shorter but more intensive growing season, or, as in the East and South, periods of very rapid and luxuriant growth on account of the weather conditions, both causing a greater susceptibility to blight than under any conditions prevalent in California. As a result the East and Northwest pear grower is so handicapped with loss from blight that he can hardly be rated as a competitor of the California pear grower.

Furthermore, the California Bartlett pear on account of its keeping quality can be distributed to any market of the world, and for the same reason can be canned like a cling peach and will not rag out, aside from the fact that eaten out of hand or canned it is the peer of all deciduous fruits. Eastern pears cannot be canned except for pie.

Due, therefore, to our peculiar climatic conditions in California the Bartlett pear as a canned fruit has no competitor in the world's markets.

This monopoly, enjoyed by the California fruit grower in the growing of not alone pears, but clingstone peaches, almonds, apricots and other fruits, on account of the peculiar climatic conditions in this state, gives to the California fruit grower a permanence and assurance not enjoyed by horticulture in any other section of the world.

THE PEAR IN CALIFORNIA

By Max J. Crow

A CAREFUL estimate indicates there were 6,650 acres of new pear orchard planted in California during the season of 1919. Owing to a shortage in the supply of nursery trees the planting of pears for 1920 will likely not exceed 5,500 acres, though the demand indicates that a much larger acreage would be planted were the trees to be had. Of this total of 12,150 acres probably 85 per cent, or something over 10,000 acres, are Bartlett, the remaining 15 per cent being divided among seven or eight later ripening sorts which are being grown quite extensively in a few sections to meet a limited demand of the Eastern markets for a pear coming in later than Bartlett.

While Doyenne du Comice, P. Barry, Easter Beurre, Winter Nelis, Beurre Clairgeau, Beurre d'Anjou each has its advocate in certain sections, and for the last several years has paid the grower well, yet it is the old reliable Bartlett which will always lead the race unless some new sort of the future shall displace it. At this time it has absolutely no rival during its season and, after the prune, has probably made for its California growers more money than any other one deciduous fruit.

The future for pear growing in this state looks particularly bright as the clear, smooth appearance and high quality has created an enormous demand which, under improved methods of growing and standardization of quality and pack, is bound to open many new markets and stimulate an ever increasing consumption.

And this leads us back to the Bartlett. While the other sorts named can be grown with more or less success in several sections east of the Rockies, throughout that entire territory the "King of Pears" cannot be profitably grown; first, on account of lack of hardiness in the colder sections and, second, on account of its susceptibility to blight, scab and other diseases which flourish during the warm, humid summers of that entire region. During a residence of 11 years in the Mississippi Valley the writer attended a great many fruit exhibits and frequently visted the immense fruit markets of Kansas City, St. Louis and Chicago and never once saw a Bartlett

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pear of commercial quality exhibited or offered for sale that was grown east of Colorado, though accasionally a few Bartletts are produced in a few favored Eastern localities, but they are decidedly inferior in appearance and will never cut the least figure in opposition to the Western product. So for all practical purposes the Pacific Coast has a natural iron clad monopoly which neither man nor his laws can break.

Furthermore the coast grower has three strings to this Bartlett bow: He can dispose of his crop fresh to the canneries where it will always be in demand at profitable prices so long as the Pear Growers Association functions; if no cannery is available equally large profits, frequently larger, are to be made by packing the fruit and shipping it East; if for any reason that is not advisable then he can follow the example of the Lake County pear growers who, though many miles of mountain roads stretch between their orchards and the nearest railroad, have found that the dried Bartlett brings them a greater profit than any other crop their lands have ever produced.

CANNING AND DRYING PEACHES

By R. E. Miller

EXPERIENCE of the peach growers of the central San Joaquin Valley, including Fresno, Kings, Kern and Madera Counties, as well as of Merced and Stanislaus, point to a few standard varieties of peaches as most suitable for planting.

Some are suitable for drying, others for canning or shipping green, and others are adapted for two or more purposes. For drying the Muir is generally recommended. It is not as vigorous a grower as some but its habit of low growth is an advantage in economical picking. The Muir is the preeminent peach for drying, being meaty, firm, of good color from the skin to the pit, and ripening early before the great rush of grape harvest. It has the additional strong recommendation of standard quality, commanding a better price on the market and especially lending itself to the process of practical peeling. Stripped of its fuzz and most of the skin by our peeling process, it is without question the finest dried peach ever offered for human consumption.

Two other peaches which are largely used for drying are the Elberta and Lovell. Both of these are also used for shipment fresh, and the Lovell is often used for canning. The Elberta is the finest shipping peach. It often yields a very good tonnage of dried fruit, being left on the tree to attain larger size than when picked for shipment green. As a drying peach the Elberta runs to large sizes which make for better selling qualities. The Lovell is a good bearer and one of the best yellow peaches. Although it is not quite as attractive in color as the Muir and does not peel as readily, it is one of the leading drying peaches. It is extensively used for canning, and considerable tonnages are shipped green. It ripens later than the Muir, as a rule. Very few other varieties for drying are to be recommended under existing conditions in this section of the state.

There are a number of canning peaches suited to planting in this valley; Tuscan, Orange and Phillips Clings, especially the two latter, are advised by most canners. A quantity of clings were dried this year by splitting them on four sides and permitting them to dry on the pit. This fruit proves to have an excellent flavor. It is removed from the pit by soaking overnight before cooking.

In addition to the commercial varieties, there are many excellently flavored peaches and nectarines suitable for the home garden or orchard.

THE FUTURE OF SOME OF OUR NEW FRUITS

By W. R. Wood

IN FORECASTING the future of any of our new products the first essential is to consider their worth, second the effort put forth in introducing them and acquainting the public with their value and use. Many a useful product has never reached the popularity it deserves simply because it has not been properly introduced.

As to the value of the avocado as a food there can be no question. Its high fat content makes it equal to meat and much more easily digested. It would therefore seem that the only thing that could keep it from being used would be a lack of proper introduction at prices commensurate with its actual food value. At the present time it is considered more as a salad fruit and, as the prices would indicate, only to be used by the wealthy.

We are told that in Florida where they are grown quite extensively and the price of seedling fruit runs as low as ten or 12 cents a pound, their consumption is general amongst all classes. When the seedling fruit is off the market and the better varieties of budded fruit are ripe the price is advanced to as high as 50 cents a pound. Thus we see that in order to get it into general use the price must be reduced considerably from what it is at present. At 75 cents to $1 a pound we can not expect avocados to take the place of meat even at its present high price.

The next consideration is the cost of production and marketing. This is rather hard to determine on account of its culture at present being in a more or less experimental stage. However, with the introduction of the better and more prolific varieties the cost per pound of production should be very little more, if any, than that of citrus fruits. The cost of marketing will necessarily be higher until the volume of production reaches a point where it can be handled in large quantities.

The main consideration in giving California avocados favorable publicity is to grow a good quality of fruit and market it in the proper manner so that it will be at its best when it reaches the consumer, and then we need have no fear but that the consumption will take care of the production for many years to come.

In as much as avocados are more or less tender, only the hardier varieties should be planted and on lands where lemons can safely be grown. For commercial purposes only budded trees should be planted, care being taken that the root stock is of a vigorous and hardy variety.

The California Avocado Association has done a wonderful amount of work in its study of the avocado and in eliminating poor varieties and recommending those that seem to have commercial merit, the sole object of the association being to educate both the producer and consumer, the former to know the value of avocados as a food and the latter to grow only the best varieties.

Their work has tended to increase the interest in this fruit to the point where the present available supply of good trees for orchard planting is far short of the demand. The uncertain supply of hardy seed for root stocks and the changing conditions due to the constant elimination of varieties as seemingly better ones were introduced has caused the nurserymen to grow only limited quantities of such varieties as they felt there would be a demand for.

Probably the present supply of good trees in our California nurseries, ready for transplanting in orchard form in the spring of 1920, will not exceed a sufficient number to plant 100 or 150 acres.

The feijoa is another fruit that has particular merit and should be planted more extensively. The tree or shrub, as it may more properly be called, is very ornamental in appearance and perfectly hardy. The fruit has a fine flavor and can be used fresh from the tree or cooked, makes excellent preserves and jelly and for pies is unexcelled.

Until quite recently feijoas have been propagated almost entirely from seed and the quality was uncertain, but with the successful methods of grafting now practiced planters can be assured of getting varieties true to name. The Choiceana and Superba are two of the leading varieties. The former are oblong fruit three to three and one-half inches in length and about two inches in diameter; the latter a round fruit about two to two and one-half inches in diameter. When properly introduced this fruit should meet with a heavy demand.

As with the avocado, the supply of good trees is limited and planting will

Continued on Page 879.

Teagues' Quality Citrus and Tropical FRUIT TREES

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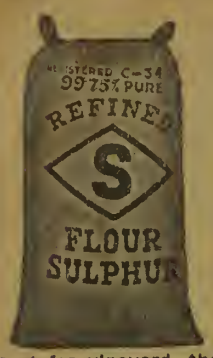

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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

BIGGEST CROP IN HISTORY OF WALNUT INDUSTRY

By H. H. Warner

THE biggest and most successful season in the history of the walnut industry in California has just been concluded. For the second successive year the most optimistic estimates at the opening of the season proved too low and the actual tonnage was larger than the growers, packing house managers or officials of the California Walnut Growers Association had anticipated. The association, which is credited with marketing 80 per cent of the production in California, has shipped this year more walnuts than were produced in the entire state by all growers last season.

The entire production this year, according to C. Thorpe, manager of the association, was almost twice as much as in 1916 and three times as great as the 1914 crop. The volume of the entire total production in California reached the amazing figures of 52,000,000 pounds and paid the growers about $15,000,000. This immense production is 6,000,000 pounds more than the consumption of both foreign and domestic walnuts in this country as recently as 1914, but even then would provide every man, woman and child in the country with only two walnuts apiece.

In addition to harvesting the largest crop in the history of the industry, the growers received bigger returns than ever before, although buyers were generally surprised that the prices named by the association were not advanced as much in proportion to last year's figures as was the case on most other California food products. The United States bureau of labor statistics shows that the average cost of 22 principal food commodities in October of this year had increased more than 12 per cent over the cost of the same items in October, 1918. The walnut prices represented an increase of scarcely ten per cent over those of last year, and that they were considered fair was indicated by the fact that the association's total estimated tonnage at the beginning of the season was sold within two days after prices were named.

There is no questioning the fact that walnut growers in California have made big money this year, but this has been due largely to the unusually heavy crop rather than to an excessively high price. The advance in the price of this year's crop hardly paid for the increase in the cost of production over last year owing to the necessity for heavier and more frequent irrigation on account of the scanty rainfall last winter.

The crop matured later than usual in many sections but after the harvest started it taxed the capacity of the packing houses to the utmost to grade, pack and ship the walnuts as fast as the growers delivered them. About two-thirds of the entire crop dropped from the trees within ten days following the early rains the latter part of September, and the long dry spell afterwards permitted harvesting under the most desirable conditions. Approximately 25 per cent of the crop were No. 2's in size and the No. 1's averaged smaller than in many years when there is a lighter crop.

There are at the present time about 65,000 acres of walnuts planted in this state, representing an investment of more than $60,000,000. The commercial industry is centered in Southern California. Los Angeles, Orange, Ventura and Santa Barbara Counties produce by far the bulk of the California walnut crop.

The industry has been given a tremendous impetus since the organization of the California Walnut Growers Association six years ago and the practicing of fair merchandizing methods which have always succeeded in moving the crop at prices satisfactory to the growers. The walnut enjoys a most unique distinction among tree products, in as much as it can be stored for a year or more, awaiting disposal, without loss from deterioration. This feature has given the industry a stability and freedom from speculation that is not enjoyed by the perishable food crops. A walnut produced is money earned without anxiety of probable loss in storage while awaiting marketing. Another advantage is that walnut trees are found to bloom and bear fruit after the danger of frost is past. The absence of the smudge pot in the walnut industry is one of its attractive features. Even in California, where climatic extremes are practically unknown, this quality of the tree is not unappreciated.

The remarkable expansion of the industry is evidenced by the fact that nursery stock in commercial quantities suitable for planting next spring is not to be had today anywhere at any price. Thousands of acres which have formerly been in barley, alfalfa or other field crops are being leveled and piped for irrigation in preparation for setting out the trees this winter and spring.

The value of the walnut orchards and land suitable for planting to this crop varies widely in different localities and depends largely upon soil and climatic conditions. Bare land under irrigation suitable for planting is held at from $600 to $1,000 an acre. Bearing walnut orchards can be purchased at from $900 to $2,000 an acre, the average being valued at somewhere around $1,300. The practice of taking out walnut trees and replanting to oranges and lemons, which was common several years ago, has been practically abandoned, as a full bearing walnut orchard in some districts is considered just as desirable property as an orange or lemon grove.

The walnut tree usually comes into bearing at from five to nine years from time of planting and with good treatment will apparently bear indefinitely. A safe estimate of the average yield from mature trees is from 900 to 1,200 pounds per acre. A careful survey of 922 walnut growers, made by the field department of the California Walnut Growers Association last year, revealed the cost of setting out an orchard, including the cost of the nursery trees, to run between $40 and $50 per acre. The average annual cost of maintenance, including taxes over the years before the trees come into bearing, was $45 per acre. The average total cost of planting the grove and bringing it into profitable bearing for these 922 growers was $257.65 per acre. The annual cost of operation of a bearing grove, including irrigation, fertilizing, cultivation, pruning, harvesting, taxes, etc., was shown to be between $40 and $60 per acre. The following table shows the results of the survey in detail with particular reference to the net income which may be expected:

Per Acre	Safe Estimate for Business Purposes	Income Which Competent Men May Hope to Obtain	Income Not Infrequently Obtained Under Favorable Conditions
Yield	1,000 lbs.	1,500 lbs.	2,000 lbs.
Valuation	$1,100.00	$1,500.00	$1,800.00
Gross income (1)	$163.70	$245.55	$327.40
Operation (2)	$60.00	$50.00	$55.00
Packing and marketing	15.50	22.50	30.00
Total expenses	75.50	72.50	85.00
Net income	$ 88.20	$173.05	$242.40
Interest on valuation	8.02 Per Cent	11.54 Per Cent	13.47 Per Cent

(1) Based on average selling price of No. 1 Soft Shell for last ten years—16.37 cents per pound.
(2) All costs, including irrigating, fertilizing, cultivation, pruning, harvesting, taxes, etc.

The success of the industry in this state is largely due to the untiring efforts of the California Walnut Growers Association which is a strictly co-operative marketing organization of over 3,000 growers. Some 30 local associations, each owning and operating its own packing plant, hold the central office, whose management they employ, responsible for the selling of their output. So far this selling expense, including the cost charged to advertising and maintaining field department, has never exceeded three per cent of the f. o. b. value of the walnuts, plus the customary one per cent cash discount to the trade. This is believed to be a record in the economical marketing and distribution of this immensely valuable crop.

Much of the present success of the industry has been due to the aggressive management of the association and its recognition of the possibility

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One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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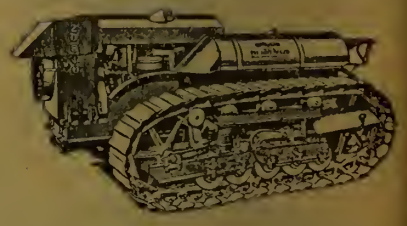

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"Caterpillar" 45 Tractor handles bigger loads than small tractors, hence doesn't have to work as close to trees. Does considerably more than two smaller tractors, does it faster, better, cheaper, with one engineer instead of two. Handles easy, turns short, and—it's *dependable*. Send for catalog 412.

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If you would start right consult us.
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of lower returns with increasing production, unless consumption could be increased through advertising. They are directing an advertising campaign in publications of national circulation, and a consistent effort is being made to persuade the consumers to eat walnuts all the year round and to keep the demand ahead of increasing production through spreading the period of consumption.

This propaganda is having the desired effect and consumers are beginning to get away from the old fashioned idea that walnuts are only to be eaten along with turkey, cranberies and plum pudding during the holidays. The importance of the food value of the walnut is being emphasized and the housewife is learning how to use it in salads and desserts through the summer months.

The association serves its members through its field department composed of scientifically trained orchard men and has done exceedingly valuable work in solving problems of production and pest control. An affiliated company known as the Walnut Growers S. ay Manufacturing Company has recently been organized to manufacture and supply at cost to association members material for the control of aphis, codling worm and other orchard pests.

The growth of by-products from this business has been spectacular and profitable. The cull walnuts of the association members are cracked by machinery and the good meats picked out, sorted and sold to wholesale confectioners and candy manufacturers all over the country. This year the value of these meats will run somewhere around five million dollars, returning to the growers per pound almost one-half of the value of their merchantable nuts. The shells from the cracking plants are being turned into charcoal and sold to large manufacturers of chicken feeds.

The proportion of walnut growers who entrust the marketing of their crop to the association is annually increasing and the splendid results which this organization has been able to accomplish in stabilizing the market and distributing the products at satisfactory prices have been an object lesson to all the world in cooperative marketing.

WESTERN STATES EXTENSION CONFERENCE

The extension directors, state leaders, state boys and girls club leaders and state home demonstration leaders, together with representatives of the United States department of agriculture, are to hold their annual conference at Berkeley on December 29, 30 and 31. The eleven states represented will be Wyoming, Montana, Idaho, Colorado, Utah, Nevada, Arizona, New Mexico, Washington, Oregon and California. At the close of that conference those who desire to remain will take a two day traveling tour of inspection through Alameda, San Joaquin, Contra Costa, Solano and Napa Counties. The traveling farm bureau conference which has been an annual feature in California is new to most of the states and this brief traveling tour of inspection is intended to serve as a demonstration to the other states of such a method of holding a conference.

THE TRUE VALUE OF COOPERATION

Cooperative measures among California fruit growers and farmers are now no longer a novelty, but the Eastern farmer declined to proceed along our well ordered lines until he had literally been "driven to the wall"!

Two years ago in Maine something happened that no doubt as an object lesson will have a far reaching effect in the East. Along with the gradual and insistent increase in the price of everything came the increase in the cost of commercial fertilizers. Now the potato growers of Maine use 100,000 tons of fertilizers a season, and in 1919, when the price had reached the grand sum of $96.25 a ton, the humble spud grower ceased to be humble; an indignation meeting was held and the outgrowth was the "Aroostook Federation of Farmers"!

Fertilizer was purchased in carloads, mixed and sold to growers at $35 a ton under the dealers' price. Now, in addition, it is worthy of note that the home mixed fertilizer yielded better results than the commercial product had ever done. In 1920 the association expects to handle $1,000,000 worth of fertilizer business. Thus the true value of cooperation in one of its many phases is apparent.

INCREASE PEACH PLANTING

The Eastern peach grower has been frightened by the fearful inroads of peach yellows, and while he knows the advance of this disease is extremely slow it is deadly when it does come. Georgia produced 4,200,000 bushels annually less than ten years ago. Today, because of the depredations of the yellows, it is producing 2,700,000 bushels. Michigan, at one time one of the principal peach producing states, now has practically no output.

California peach growers have had their troubles with blight, scale insects, and formerly with bad marketing conditions. Today there is no reason why every available acre should not be planted to desirable table, canning or drying peaches.

TO GROW COTTON IN PERRIS VALLEY

By A. F. Clarke

Growing of cotton is to be undertaken in the Perris Valley, and it is predicted that 2,000 acres will be planted the coming season. Ample financial backing has been secured for the enterprise and Riverside capitalists will erect the necessary gin and warehouses to handle the 1920 crop.

A meeting of Perris ranchers was held one night the past week when the cotton proposition was presented by J. C. Odell who has been a prominent factor in the development of the great cotton industry in the Palo Verde Valley in Riverside County.

Mr. Odell stated that soil and climatic conditions in the Perris Valley were similar to those of the San Joaquin Valley where cotton growing has passed the experimental stage. Cotton is produced there for 22 cents a pound and all over that is net to the grower. Cotton requires less water than alfalfa, the staple crop for years of the Perris Valley, and it is believed that 25 cents will be the minimum price per pound for some time to come.

The Riverside Business Men's Association at its last meeting went on record as favoring the cotton experiment and its members will give financial aid to the project. The sum of $20,000 for a cotton gin and as much as is needed for warehouses has already been pledged.

GAS TRACTOR COURSE FROM FEBRUARY 23 TO 28

"Do you operate a tractor? Are you thinking of buying a tractor? Do you wish to learn something about gasoline engines?

"Attend the gas tractor short course at the Citrus Experiment Station, Riverside, from February 23 to 28. You will learn the principles of the gas engine, how the valves and ignition should be timed, how to adjust a carburetor, and many other things which will help you to be a better operator. You will learn the advantages of the various types and styles of tractors and have an opportunity of studying and operating every one of the ten or more makes of tractors which will be used in the course.

"Lecture demonstrations are scheduled every morning from 8:00 to 9:15 and every afternoon from 1:00 to 2:15; practice work or demonstration during the remainder of the time. Several evenings will be devoted to showing motion pictures of various tractors at work.

"The only charge for the course is a registration fee of $1. If you are interested write Citrus Experiment Station, Riverside. The course is limited to 180 students."

FARM BUREAU

Los Angeles County is making a thoroughgoing campaign for increasing its membership and renewing old memberships which expire January 1. The membership dues, which were formerly $1, have been doubled in order to cover membership in state and national organizations.

The state land settlement board has announced that the colony lands in Merced County will be partially opened in the spring, the remainder in the autumn of 1920.

FREE—New Book on Fruit-Fog Spraying!

Every fruit grower should send coupon for the book. Read why Fruit-Fog, the scientifically atomized super-spray, is the ONLY spray *fine enough* to seek out and kill the *hidden* pests—millions of which infest the microscopic niches in bark, buds, and foliage where no coarse spray can reach. The book explains why this amazing Fruit-Fog *thoroughness* is adding *fortunes* to fruit growers' profits each year. Send coupon now.

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Fruit-Fog spray is produced by Hayes 300 lb. high pressure and the scientific Hayes nozzle. Its vapory fineness gives it wonderful *adhering* power. No drops form—no solution wasted—no buds or leaves knocked off—as with heavy, coarse, low-pressure sprays. Fruit-Fog Sprayers are skillfully made in every part to give enduring service and greatest efficiency under high pressure. Service stations all over the U. S. assure new parts within 24 hours in case of accident. The Fairbanks-Morse famous "Z" Engine means supreme engine satisfaction.

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Send coupon telling us how many fruit trees you have and their average age. We'll tell you the style Hayes Sprayer best suited to your needs, and its price. We'll also send our Big FREE BOOK showing 50 styles of Hayes Sprayers and our Valuable SPRAYING GUIDE. Send coupon below today.

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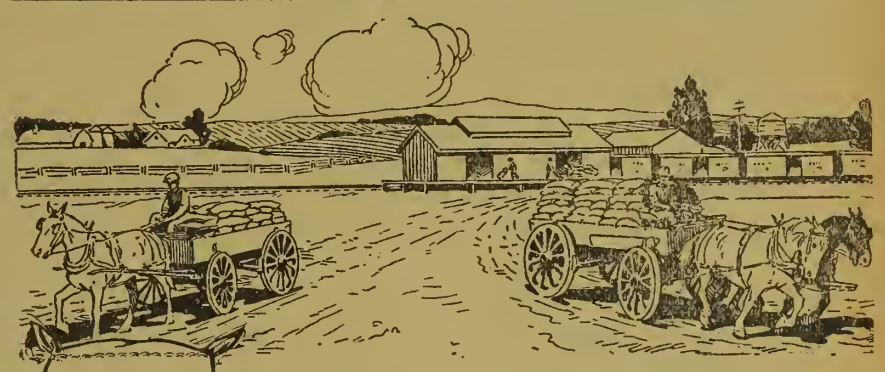

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Its fine, dry condition means a further saving of time and labor in top-dressing orchards, truck crops, grass, grain, corn, cotton and tobacco. It is the great American ammoniate.

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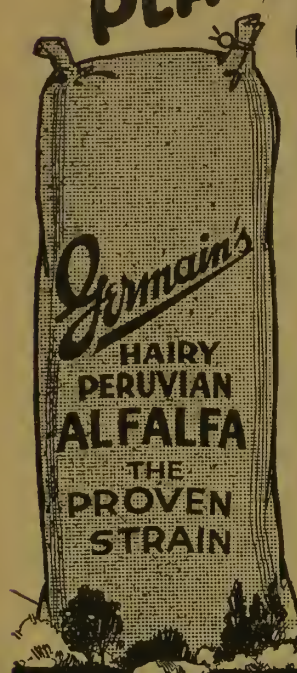

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First prize senior pig 1919 State Fair.
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35 sow pigs—a wonderful opportunity to buy for fall sales.
One herd boar, Fresno Sampson, sells.

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FRESNO, SATURDAY, JAN. 10th, 1920

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AVIATOR WHY THIS NAME ?

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The Big Livestock Shows

By H. M. Barngrover

Having again received a great deal of enjoyment and encouragement from attending the American Royal Livestock Show at Kansas City and the International at Chicago, I feel that the readers of the Cultivator might be interested in a little account of my impressions.

California was splendidly represented at Chicago by our state university staff and by the remarkable showing of cattle from that institution that certainly must convince the most skeptical that we have exceptional climate and feed for producing the best cattle in the world.

Other California breeders of Herefords who attended the Eastern shows were: John A. Bunting of the Mission Stock Farm, Mission San Jose; H. H. Gable of the Diamond G Ranch, Esparto, and Romeo Jacks of Monterey. The very cordial greetings that we received at the shows was not only pleasant but encourging because it indicated what we frequently heard admitted that the Pacific Coast is the next big field for Hereford cattle.

One of the biggest things that we can do to put good beef bulls on the ranges and ranches of California is to encpurage a really big show at San Francisco, Sacramento and Los Angeles next year. I am glad to report that we received very much encouragement from the American Hereford Association at Kansas City and from the breeders in general. The showing made at San Francisco in November was a fine start and really foretells what we may hope to do if we all pull together next year. When we can show classes of 20 to 40 well fitted cattle, such as we saw at Kansas City and Cbicago, we are going to convince the ranch and range men that they can afford to buy high class bulls and at prices double their present ideas. All they need is to be shown, and I know of no better way than through the medium of livestock shows.

I wish that more of our breeders would attend those shows and look over the great classes of beef cattle and meet the big hearted, hard headed, practical breeders who have done so much to create and advertise our wonderful beef cattle. It is inspiring and educates us away from the purse-pinching tendencies that too many of us think necessary. We get a broader vision of our possibilities and gain confidence that our fellow breeders will support us by buying the better kind of cattle.

I feel that we in California should follow in the footsteps of [illegible] who have made the Western [illegible] Livestock Show at Denver such a success. We should stress the importance of a bull show—carlots if possible for we have many large ranches that require such numbers. What could be more convincing than to show a long string of well developed bulls at the shows? Since the cow man's business is to produce steers, we should [illegible] the strongest possible steer classes. The steer classes at Chicago were especially strong and showed conclusively the value of good sires coupled with good feeding. There were nearly 500 Herefords at the Royal and a larger number at Chicago.

I believe that attending these shows will convince any new breeder that he cannot afford to miss them. We breeders need the education even more than the ranch and range men for we of necessity must pioneer the introduction of good cattle.

If these few lines will induce some breeder to start fitting registered cattle or steers for our 1920 shows I will feel greatly repaid.

In closing, I wish to mention the enjoyment we obtained visiting some of the large and successful herds near Kansas City. We advance by imitation and what better way than to see how successful breeders arrive at their results?

Morris Holsteins to Many New Herds

The old adage that "it is an ill wind that blows no good" was demonstrated at the sale of Holsteins held by A. W. Morris & Sons, Woodland, at the state fair grounds, Sacramento, Thursday, December 18. The sale, which was made necessary on account of a disastrous fire which destroyed the large barn at the Morris farm, proved to be an opportunity for a number of men just entering the Holstein business to select foundation stock from an unusual offering. The sale not only attracted a large number of new buyers but brought together most of the leading breeders of this state. Besides the local breeders attending, several prominent Eastern breeders, including E. C. Schroeder of Minnesota; B. L. Crampton, manager of the Pabst Stock Farms in Wisconsin; H. M. Corwin and son of Iowa, and C. W. Peters of the Hollywood Farm, Washington, were present.

The top of the sale was registered by the four year old cow, Princess Valley Mead Walker, a 16 pound daughter of Prince Gelsche Walker. She was purchased by H. E. Vogel, prominent breeder of Fresno, for $1,050. Chas. Harrington of Compton paid $1,035 for Riverside Seeley Girl 2d, an eight year old daughter of King Mead of Riverside, with a two year old record of 21.19 pounds butter.

James H. Hayes of Sacramento made a number of choice selections for the newly established Hayes Stock Farm. Gleason & Walker of Hollister, J. D. McKindley of Acampo, Brownell & Marsball of Woodland, Anderson & Fogarty of Sacramento, E. M. Holje of Calistoga were among the heaviest buyers.

Twenty-eight buyers absorbed the 50 cows at an average price of $498 and the 12 bulls, most of which were youngsters, at the avcrage price of $324. The entire 62 head made an average of $464.

The sale was managed by C. L. Hughes of the California Breeders Sales & Pedigree Company, Sacramento. Col. Ben A Rhoades of Los Angeles was the auctioneer and Col. Geo. W. Bell of Tulare was in the ring.

A detailed list of the sale follows:

1. Aaggie Acme Burke, June, 1914; P. Brunold, Modesto, $875.
2. Riverside Seeley Girl 2nd, June, 1910, 751.1 lbs.; Chas S. Harrington, Compton, $1,035.
3. Segis Netherland Walker, March, 1914; Hayes Stock Farm, Sacramento, $575.
4. Segis Pontiac Aralia Mead, May, 1915; Anderson & Fogarty, Sacramento, $300.
5. Riverside Seeley Girl, April, 1907, 795.11 lbs.; A. P. Dutro, Dixon, $230.
6. Queen Pontiac Charlotte, April, 1912, 714.17 lbs.; H. Meckel, Venice, $850.
7. Pauline Creamelle Mercedes, July, 1908, 1,081.98 lbs.; Louis Beck, Modesto, $500.
8. Pride Hengerveld Segis Aralia, February, 1916, 21.16 lbs.; P. Brunoid, $460.
9. Margaret Pontiac Terpstra, August, 1913; E. M. Hoije, Calistoga, $410.
10. Miss Aralia Pontiac Burke, November, 1914; H. E. Vogel, Fresno, $525.
11. Miss Filied Korndyke, August, 1911, 29.67 lbs.; Hayes Stock Farm, $775.
13. Empress Pontiac Electra, August, 1915; Gleason & Walker, Hollister, $500.
14. Colantha Contenta Creamcup, September, 1912; Hayes Stock Farm, $300.
15. Anoakia Pontiac Segis, March, 1916; E. M. Holje, $400.
16. Segis Pontiac Salambo, December, 1912, 908.10 lbs.; P. Brunoid, $750.
17. Aralia Pontiac Dutch, April, 1916, 15.96 lbs.; Anderson & Fogarty, $375.
18. Contenta Creamcup 2d, March, 1910; Gleason & Walker, $300.
19. Miss Blaney Walker, April, 1913, 23.56 lbs.; J. McKindly, Acampo, $560.
20. Aralia De Kol Josephine, May, 1916; J. McKindly, $400.
21. Nydia Creamcup 2d, March, 1910, 14.75 lbs.; Hayes Stock Farm, $175.
22. Segis Pontiac Creamcup, November, 1914; Gleason & Walker, $675.
23. Wilhelmina De Kol of Nevada, January, 1913, 20.69 lbs.; J. McKindly $469.
24. Molly Korndyke Aralia Alcartra, May, 1916; Hayes Stock Farm, $350.
25. Segis Meade Salambo 2nd, February, 1915; Brownell & Marshall, Woodland, $600.
26. Lady Korndyke of Linwood, April, 1915; A. Gaul, Stockton, $340.
27. Molly Korndyke of Nevada, August, 1912, 18.39 lbs.; Chas, Barboni Penngrove, $450.
28. May Pontiac Korndyke Aralia, February, 1915; Bast & Johnstone, Corona, $450.
29. Miss Blaney Pondyke Aralia, January, 1915, 20.88 lbs.; E. B. Goodwin, Ripon, $500.
30. Piebe Hengerveld of Linwood, December, 1915; E. B. Goodwin, $525.

Continued on Page 867.

Greatest Offering of

DUROC-JERSEYS

in the West

Public Sale

Wednesday, Jan. 28, 1920

Sale to Be Held Under Cover, Rain or Shine

40
BRED SOWS and GILTS

You need some of these foundation sows sired by the breed's most noted boars. They will prove valuable assets to your herd.

Bred to Our Three Great Super Sires

Ace of Pathfinders
One of the greatest Grand Champion sons of the famous sire, Pathfinder.

Mammoth Sensation Jr.
The greatest living son of Mammoth Sensation, the largest 2-year-old boar that ever lived.

Great Sensation 2nd
The same breeding as the World's Grand Champion, 1919.

Look Over This Wonderful Offering

10 Two-Year-Old and Senior Yearlings

by Model Chief 2nd, Model Triumph and Councillor. Bred to **Ace of Pathfinders, Mammoth Sensation, Jr., California's Great Wonder, Orion Reformer.**

10 Yearling Sows

by Pathfinder, Great Wonder I Am, Pathfinder's Wonder, A Top Pathfinder and Creator. Bred to **Ace of Pathfinders, Mammoth Sensation, Jr., Great Sensation 2nd.**

10 Fall Gilts

by Bark's Premier Gano, King's Col., Golden Col. and Creator. Bred to **Ace of Pathfinders, Mammoth Sensation, Jr., Great Sensation 2nd.**

10 Spring Gilts

by California's Great Wonder. Bred to **Ace of Pathfinders, Mammoth Sensation, Jr., Great Sensation 2nd.**

These sows are either winners or their sires and dams have been winners at the leading 1919 Fairs and Expositions, both East and West

Offering Cholera Immune

Mark the date on your calendar NOW and be here. If unable to attend, send your bids to Ralph P. Royce or Bruce S. Bennett, who will represent the California Cultivator, care of Diamond Bar Ranch.

Plan To Attend

Diamond Bar Ranch

"Where Size is the Fashion and Quality Reigns Supreme"

Spadra Los Angeles County **California**

Ord L. Leachman, *Auctioneer* **Walter T. Gatton,** *Supt. Swine Dept.*

Xmas and New Year's Greetings

from Frank P. Gardiner & Son to Our Friends and Customers

We also wish to announce the safe arrival from Ed Kerns of Stanton, Neb., of the latest and Greatest Sensation to arrive on the Pacific Coast.

Greater Sensation

Sired by

Great Sensation

who sired world's champion boar at National Swine Show, 1919. Also the world's grand champion boar 1919. His get has won more prizes at the fairs and swine shows this year than any living boar.

NOTICE—To farmers and breeders: We will produce over a thousand high class Durocs next year sired and damed by the best blood lines of the breed. Write us your wants. Satisfaction in every transaction. Prices reasonable.

Gardiner Ranch

Route No. 4, Box 735 Sacramento, Cal.

Experience Has Taught

us that if we make money out of hogs we must have prolific sows bred for quick maturity. They must be of the type producing the highest quality of pork. A careful survey of my herd will convince you that I am breeding the kind you want to breed. I have breeding animals—both sexes—for sale at reasonable prices.

Les McCracken *Ripon, Cal.*

Bred Sow Sale, on farm, Feb. 3rd, 1920

200 Bred Duroc-Jersey

sows and gilts bred for spring litters. All carefully selected from Glenn County herds. They are the kind that will make a profit on any farm. All are priced at exceedingly low prices. Bargains for car lot buyers. Get busy and write or come and see us immediately as they won't last long at the price.

H. P. Slocum and Son

Willows, California

Breeders of Duroc-Jerseys. The Key Herd of the Pacific Coast.

YOUR FUTURE DEPENDS

on your selections now. In Duroc-Jerseys we have some gilts and boars of type, breeding and conformation that we guarantee to satisfy and at reasonable prices. Write for full description.

Greenwood Farms

H. C. Witherow, Mgr. Live Oak, Sutter Co., Cal.

Why Not

get just what you want and need when you buy Duroc-Jerseys?

Orion King Gano is a proven sire of Duroc-Jersey swine—the kind you will eventually buy so why not now? Our prices are reasonable and worth the price.

Donald H. Graham Lancaster, Cal.

Special Notice to Duroc-Jersey Breeders

I leave for the East in January. Several breeders have given me orders to buy bred sows and gilts for them. I will be pleased to purchase for you anything you want. Will personally select them. Write me what you want and the blood lines. I'll tell you just what I pay for them.

Clayton Slocum Willows, Cal.

N.B.—Write me at once

Duroc-Jerseys

Bred and raised under right conditions. Correct as to type and size.

D. C. Cummins & Son

VISALIA, CALIF.

Breeding Date Book---FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

CALIFORNIA BREEDERS SALES & PEDIGREE CO.

C. L. Hughes, Sales Manager

Sacramento Cal.

Size and Type

Are combined in the unusual lot of Poland Chinas I am now offering. Both sexes and all ages. I readily refund the money to any dissatisfied purchaser. Write me what you want—I have it—priced reasonable.

R. J. Yates, Orland, Cal.

The Stray Dog of Industry

By J. H. Henderson, Jr., President Sacramento Bank

OLD KING SOLOMON said, "A word fitly spoken is like apples of gold in pictures of silver." Your paper has asked me for a financial forecast as it affects the farmer for the coming year. For exact information you might as well ask which way the wind is going to blow next summer. You can't always tell by scientific forecasts which way the financial wind is going to blow. There are too many unknown elements that no mortal can fathom.

How many successful men do you know who are pessimists? There are surprisingly few. Recently I saw a definition of a pessimist as one who had to live with an optimist. But what would you call the man who had to live with a pessimist? When you are inclined to be downhearted, think of the hopeful things you have to be thankful for. Our money has the highest standard of any nation in the world; our bonds are more valuable; our national wealth is greatest; there is less poverty, and the purchasing power of each individual is higher than in any other nation.

The farmer has things to sell. He has a hungry nation to clothe and feed. He is the greatest of all producers. But America is only one nation the American farmer has to feed—the whole world needs our products.

Produce all you can. Buy machinery and tools, even at the prevailing high prices if you need them in order to put in your crop. It is good sound business to do so. You may ask, "But will I be able to sell my products at a profit?" There are several factors that determine prices. One is supply and demand; another is speculation; another is the cost of production, and the other is the ability of the consumer to pay.

We will take them in order. The demand is certainly enormous. The supply is too small under the best conditions. Farm products are most likely to stay up.

Speculation forces prices too high. This should be eliminated as far as possible. Cost of production of a farm depends largely upon labor. Certainly labor has no intention of lowering his wages. This is another incentive toward high prices because of high costs. You cannot be expected to sell at a loss.

The ability of the consumer to pay is the deciding factor in high prices. The American consumer, as already mentioned, is the one most able to pay in the entire world. He is the richest. A large percentage of foreign consumers demand supplies and are able to pay.

High wages, great demand, high cost of production, ready cash purchasers and a certain amount of lamentable but unavoidable speculation all keep prices up. Too high prices will kill any industry. I am not elated at high prices. It is deplorable. But when a farmer spends a large amount for materials and labor he is entitled to expect a high price for his products. That is the natural law of industry.

Although advising farmers to increase immediate production, I also would urge some greatly needed reforms in the business of agriculture. In the recent labor unrest and its kindred agitation, there were only two classes of people considered, labor and the consumer. They quarreled with each other violently with a great ing of fists, and eventu their differences by a which neither was ed. Of course the farme consulted and is being crus between the hammer of labor on one side and the anvil of the general consumer on the other. Labor has its unions for collective bargaining; consumers form their associations for lowering prices. Business men have associations for mutual benefits. I have tried to get bids from various printing houses for printing, and every bid was the same to a cent! Does this show any collective agreements? The farmer must organize for self protection. If he doesn't he will be the stray dog of industry, stealing his living from the doorsteps of society, when he is entitled to the guest chamber.

Therefore I would urge every farmer to join his nearest association, and if there is none near him, to form one.

You ask of the future of the dairy business. Our association is doing a great work for both the dairyman and for the public. We have been attacked, vilified and slandered, but we are still in the ring and are going to stay there.

If by any queer twist of justice and the tortuous course of events, our Associated Dairymen of California should cease to exist, the vultures of the vested interests, hovering like buzzards ready for their intended victims to die, would wax fat on our remains. They would force the price of milk so low to themselves that within a year there would be a great shortage of dairy cattle. Dairymen would be forced to beef their herds. Then prices for dairy products would increase so rapidly that the consuming public would become agitated and would turn in justified wrath upon those buzzards of industry—the food speculator and the vested dairy interests.

I can only urge the dairymen of California to stand firm because their cause is just and for the eventual benefit of both themselves and the average consumer.

Farm Bureau Livestock Auction Sales

By R. N. Davis

THE advance in prices in general and the increased cost of living which became very apparent during 1917-18 made it essential that the livestock farmers receive more for their product.

The high prices of grain brought this fact so plainly before the hog growers of the San Joaquin Valley that they realized they were not receiving as much for their hogs as it cost to grow them. It was apparent that something must be done to relieve this condition or the hog growers would be compelled to divert their efforts to other lines of farming.

This was at a time when our allies were looking to us for large amounts of pork and pork products, saying nothing of our own enormous requirements. It was at this time that the American government was making every effort to increase animal products, so essential for the winning of the war. At this critical moment the Kern County farm bureau conceived the possibility of using the auction sale which has been used so successfully in Australia.

Before these sales could be conducted successfully the cooperation of the packing houses of the state must be secured. At this time only one of the big packing houses had a representative in the valley. Cooperation of the packers was sought and arrangements made for a sale.

Although the first sales were conducted with only a limited number of buyers present they were considered very successful and the auction sale spirit soon spread to the adjoining counties of Kings and Tulare. As soon as other counties began to hold auction sales it was realized that there must be some kind of cooperation between the different counties in order to prevent conflict in sale dates so the different buyers could attend all sales. This, of course, could best be accomplished by an organization, the manager of which should be directly in charge of all the sales in the different counties.

The natural result was the organization of the California Farm Bureau Marketing Association which was perfected and the association became operative on November 1, 1918.

At the time of its organization the association consisted of the farm

bureaus of Tulare, Kings and Kern Counties. The board of directors was composed of one director from each of the three county farm bureaus. D. H. Bitner, a progressive farmer of Kern County and a strong believer in cooperation among the farmers, was selected as manager.

The sales continued very satisfactory and resulted in the addition of other counties to the association. The present membership of the association includes seven San Joaquin Valley counties, viz: Kern, Tulare, Kings, Fresno, Madera, Merced and Stanislaus.

Although there were only three counties in the association for three months after its organization and some of the counties have only been members for a short time, the association during the first year of its existence conducted 155 sales at which were sold 526 carloads of hogs, or a total of 42,000 head, which compose a gross weight of 8,500,000 pounds of pork which brought $1,500,000. There were 4,300 different consignments during the year. The manager considers $100,000 a very conservative estimate of the amount received by these consignors above what they would have received had they marketed their hogs otherwise than through the association.

In addition to hogs there were over $19,000 worth of cattle and $3,000 worth of miscellaneous products marketed through the association, a result which was very satisfactory.

The reader will note by the number of consignments given above that a large number of small consignments were made. A large per cent of the total number of hogs was made up of entries consisting of from one to 20 head. However, a number of large growers sell through the association and are convinced that they receive better prices for their hogs than they would if they had shipped direct to the packing houses, this because of competition between the different buyers.

The packers state that the hogs cost them more when purchased through the auction sales but they are getting a better quality of hogs and prefer to pay a better price and get a better product.

A great deal of credit is due packers of the state for the success of these sales. Without their cooperation the sales would be impossible. It is very gratifying to know that all the principal packers of the state have representatives at these sales.

Although only a limited number of cattle have been marketed through the association the results are such as to demonstrate that the farm bureau auction sales would be as valuable to the cattle growers as they have been to the hog growers, both in price and improvement in quality of product. Therefore why should not cattlemen and other stockmen get together and profit by this wonderful demonstration of cooperative marketing?

Freeman Heifer Breaks State Record

The California record for 365 day milk production in the junior two year old class has just been broken by Belle Faskie De Kol Witkop, owned by E. E. Freeman, Modesto. It will be remembered that this great heifer at freshening time made an official record of 24.86 pounds butter from 479.5 pounds milk in seven days, and 98.59 pounds butter from 2,061.2 pounds milk in 30 days. In seven days, eight months after calving, she made 16.29 pounds butter from 433.2 pounds milk, her butter record falling only .2 of one pound short of the state record at that time. She still ranks third in class in this division, her record having been exceeded only by Aralia De Kol 3d and Miss Aaggie Acme Burke. On December 10 she completed her full year's work with a total of 810.28 pounds butter from 20,373.4 pounds milk, exceeding by 212.9 pounds the former state record held by Madrigal Mooike 2nd. This heifer won $70 in association prize money on her seven and 30 day records and should be well up to the top in the prize lists for eight months after calving and yearly production. A most pleasing feature of her record is the fact that she carried a calf over seven months of the time, and she is due to freshen next as a junior three year old. She is sired by Sir Inka Witkop who is by the same sire as Groveland Inka Netherland, 16,640.4 pounds milk and 832.75 pounds butter in one year, and is out of Belle Faskie Hengerveld De Kol 2nd, the 25 pound cow that was grand champion at California state fair in 1918. Her sire, Sir Inka Witkop, is out of a granddaughter of Woodland Dairy Maid's Artis, sire of the dam of Adirondac Wietske Dairy Maid, the 41.02 pound cow developed by Bridgford Company, present holder of the California records for butter in seven and 30 days. This splendid heifer ranks fully as high as an individual as she does in producing ability, possessing good size, straight top, a broad, square rear end, exceptional depth of body, and a perfect udder of fine texture and balance. She is easily one of the outstanding two year olds of the breed in the West, judged from any viewpoint.

A full aged half sister to the record making heifer, by the same sire, recently completed a yearly record of 21,558 pounds milk and 812 pounds butter in Mr. Freeman's herd. This cow, Vina Pietertje Hengerveld De Kol 2nd, is likewise a high class individual of great dairy capacity.

Still another great cow in the Freeman herd, Julia Clothilde of Sleepy Hollow, is just finishing a yearly record that will go close to 24,000 pounds milk and 1,000 pounds butter. She is a daughter of the well known sire Brom Bones. These records are the most substantial justification of Mr. Freeman's judgment in selecting foundation animals. Without large capital for initial investment he selected females bred along substantial lines, but paid particular attention to size and good type. As a result he has one of the most attractive small herds in the state from the standpoint of individuality, and the production records speak for themselves. The bull end of his herd is fully up to the standard of his females, the herd sire being Segis Pontiac De Kol Dutch, a son of Segis Pontiac De Kol Burke and Miss Dutch, a 30 pound 1,025 pound yearly record daughter of the 1,008 pound cow Miss Blaney. He already has a very choice lot of young daughters out of the top notch cows that Mr. Freeman is developing.

COOPERATIVE LIVESTOCK SHIPPERS

Over 300 cooperative livestock shipping delegates, representing 21 states and four Canadian provinces, assembled in Chicago December 3-4 and unanimously perfected a permanent National Federation of Cooperative Livestock Shippers. The following states in the order named were represented by the largest delegations: Iowa, Michigan, Indiana, Illinois, Wisconsin, South Dakota, Minnesota. Other states represented were: Nebraska, Ohio, Kansas, Oklahoma, Washington, Colorado, North Dakota, Missouri, Tennessee, New York, California, Kentucky, Louisiana, Pennsylvania and Canada.

Knute Espe, Ames, Iowa, was elected president; C. E. Compson, Remus, Michigan, vice-president; John Miller, Galva, Illinois, treasurer; Selby E. Peterson, Waconia, Minnesota, acting secretary; Earl J. Trosper, 906 Royal Insurance Bldg., Chicago, organizing secretary; C. Hoover, Longmount, Colorado, T. M. Patterson, Mississippi agricultural college, A. S. Anderson, Beresford, South Dakota, C. H. Gustafson, Omaha, Nebraska, H. M. Phillips, Palmyra, Missouri, J. F. Larson, Ellsworth, Wisconsin, M. E. Sherman, Kendallville, Indiana, directors.

The objects of this federation in a general way are:

To encourage better and more economical methods in the production and distribution of livestock and livestock products; to promote cooperative education, and to encourage the organization of cooperative livestock marketing organizations; to develop uniformity in the plan of organization and method of operating of local live-

We Accept the Opinion

of the breeders generally that we have one of the top herds of

Poland Chinas

now maintained on the Pacific Coast and fully appreciate their judgment of our efforts. It's a source of satisfaction to us to know that in our herd is to be found the blood of such eminent Poland Chinas as:

King's Massive Orange — The Yankee
Giant Buster — Liberty Bond
Surprise Prospect — The Californian
and King's Big Bone Leader

This blood will predominate in my bred sow sale to be held in Hanford, January 24th. 1920. I feel sure you will appreciate this offering. The animals will have the size, type, quality and conformation you desire.

H. D. McCUNE LEMOORE, CAL.

Write me for catalog and look over the offering. You'll like it.

Chas Gatewood Sells

In Fresno, Monday, January 26th, 1920,

Thirty-five sows and gilts bred to Giant Bob, 1919 grand champion, 10 bred to Prospector and Gatewood's Prospect; 15 sell open. Five boars including Giant Bob, Prospect or by Long Prospect out of a Bib Bob dam and Gatewood's Prospect by Wade's Prospect out of Long Prospect dam.

Geo. W. Bell, Tulare, Auctioneer

Sale at 10.30 A.M. *Lunch at Noon*

Write Now for Catalog

TAKE NOTICE! THE HIGHEST PRICE paid for a car load of fat hogs at the California International Livestock Show came from the

BASSETT

Herd of Advance Type Poland Chinas

Many firsts, seconds, senior champion sow and GRAND CHAMPION SOW were won in the open classes, proving without a single doubt we are breeding the kind the packer wants and the farmer should raise. Animals of all ages, high class young boars, bred sows and gilts for sale at reasonable prices.

M. Bassett & Son **Hanford, Cal.**

Success in Breeding

depends largely upon your foundation. It demands type, conformation, early maturity and size. Our herd is typical of what you should desire in your own herd. We can supply one or more of this kind at reasonable prices.

Geo. V. Beckman & Sons **Lodi, Cal.**

Bred Sow Sale, January 27. Send Name for Catalog

What Counts with You Hog Raisers?

Are you raising hogs for profit or show ring records—I raise Poland China hogs that mature quick and make a profit—I sell the same kind for breeding purposes. My herd boar

BIG MODEL FELLOW

was reserve grand champion at the State Fair—proof I can win in the hottest competition. Write me or attend my bred sow sale, February 21, 1920, if you want this kind.

J. F. McSwain **Merced, Cal.**

Just Out From the East

THE WESTERNER, by Big Bob, dam by Smooth Big Bone, 2nd dam by Big Bob.
CALIBUSTER, by Big Ed, by Buster's Giant, by Giant Buster—dam by Smooth Bob, brother of Caldwell's Big Bob.
We will offer later a few choice sows and gilts by King Jones Over and Kansas King, bred to these young boars. Spring boars and weanlings for sale now.

McCarty and Starkweather R.C. Box 384, Modesto, Cal.

When Writing Advertisers, Mention the Cultivator.

GUERNSEYS

First Prizes and Gold Medals were awarded to Guernsey milk and Guernsey cream at the 1919 National Dairy Show.

Guernsey products are consistent winners at local as well as national contests. Write for our free booklets.

The American Guernsey Cattle Club,
Box C-38, Peterboro, N.H.

QUALITY ECONOMY QUANTITY

Some of the finest
GUERNSEYS
in the West are at
Hollow-Hill Farm
Colton, Cal.
Only Bull Calves For Sale

WANTED
POSITION as HERDSMAN
in California or Arizona only. Eight years experience breeding Durocs. Recommendation furnished. Write me now. E. B. DUNCAN, OKOLONA, ARK.

stock shipping associations; to aid such organizations in problems of general interest in transportation, handling and marketing; to lease, buy, build, own, improve, mortgage, sell and control such buildings and other real and personal property as may be necessary in the conduct of its operations; and to perform any other work which may be of benefit to its members or helpful to the industry.

Live Stock News Notes

Fred Gatewood on January 10 will sell, in Fresno, 55 head of strictly big type Poland Chinas with such blood lines as Big Orange, Big Orphan and Big Joe. Twenty-five of the sows and gilts will be bred to Fresno Boy, the first prize senior boar pig at the 1919 state fair and junior champion at the Fresno fair. Mr. Gatewood has practically decided to retain this boar and show him next year although he has received several excellent offers to sell him at private treaty. In the sale there will be sold 30 sow pigs which will afford the breeders the opportunity of securing animals for a fall sale. Mr. Gatewood states that every animal in the sale is of strictly big type breeding and of as good blood lines as the breed contains.

J. F. Lehman, Poland China breeder, Lodi, is securing a boar by Surprise Prospect, premier sire of Wilverdell Farms, St. Joseph, Missouri, for mating with his young gilts, a number of which were seen at the shows this year and were consistent winners for him. Recent sales include a boar to Hunt Bros. Packing Company, Linden; one to E. W. McClelland, San Francisco, and the junior champion boar at the Stockton fair to J. L. Blossom, Stockton. A sow pig went to A. M. Mann, Ukiah.

C. J. Gilbert, breeder of Hampshire swine at Lancaster, reports things flourishing. It will be recalled that Mr. Gilbert bought the outstanding first prize junior yearling boar at Los Angeles Livestock Show, Black Beauty, shown by Roy E. Fisher, Lincoln, Nebraska. This fine son of Young Senator was made grand champion at San Francisco. Mr. Gilbert reports a fine line of sows safely bred to this great boar since early November. The older boar, The Harvester Again, was grand champion at Portland 1919 while the favorite brood sow Wavelet is to be remembered as the Riverside grand champion 1919 and reserve grand champion at Los Angeles. Mr. Gilbert has opened offices in the Bradbury Building, Los Angeles, as secretary of the local association, as well as in the interest of the Hampshire Record Association.

In the consignment sale of Shorthorns held at Portland during the Pacific International Livestock Exposition the second highest priced bull sold was Silver Knight, a junior yearling purchased by R. C. Bennett of Milsall, Montana, for $2,600. California breeders will be interested to know that the dam of Silver Knight was Mildred's Type sired by Cumberland's Type and out of Mildred of Greeley—thus making her a full sister of Sir Type, the bull at the head of the herd of William Bond of Newark. Sir Type is regarded a high class sire.

Donald H. Graham, Duroc-Jersey breeder of Lancaster, has recently purchased through E. J. Barker of Thorntontown, Indiana, who judged Durocs at the Los Angeles Livestock Show, a junior boar pig sired by American Orion King, a son of Orion Cherry King, and out of a sow by American Top Col. Mr. Graham has also secured a foundation flock of Hampshire sheep from Joe Levy of the Calla Grove Farm, Manteca.

H. C. Witherow, manager of the Greenwood herd of Duroc-Jerseys, Live Oak, reports having sold a splendid young boar sired by Johnson's Defender Jr. to H. S. Johns of Shavista Ranch, McArthur, Shasta County. Mr. Witherow also has made deliveries as follows: Bred gilt to Edw. R. Aspen, Wasco; boar to Geo. M. Sparks & Company, Ingomar; bred gilt to C. H. Hartwig, Yuba City; two sow pigs to Dr. R. S. Christman, Yuba City. Mr. Witherow will consign a few select sows to the association sale to be held at Davis.

John A. Bunting, proprietor of the Mission herd of Hereford[illegible]'s sale of the senior [illegible]lec, sired by New Era [illegible] of Pearl Ranier, to Ed Brow[illegible]ue Miller & Lux Company. Alec was first in class at the recent state fair and second in class at the San Francisco show. The price paid was $2,250 and Brown stated that after a visit to Eastern herds he was unable to find a better value.

H. M. Barngrover, who owns the Veramont herd of Herefords, has purchased a heifer calf sired by the famous bull Beau Blanchard owned by Jesse Engle & Son, Sheridan, Missouri. The calf is a full sister to Bell Blanchard 61st, second prize two year old at the last American Royal and is a half sister to the long list of famous sons and daughters of Beau Blanchard, including Beau Blanchard 76th, the bull for which J. I. Cazier & Sons of Wells, Nevada, paid $10,000.

Four carloads of dairy cows have left the Salt River Valley of Arizona for Havana, Cuba, according to Dr. J. P. Jacks, extension veterinarian. Several hundred have already been shipped and it is expected two cars will follow to Cuba as long as the dairy stock is offered for sale.

Manager Lovell of the Blackhawk Ranch, Diablo, Contra Costa County, reports having sold the three year old Shire stallion, Blackhawk Forest King, sired by Blymhill Forester and out of Witchford Darby, to Henry Moore of Pleasanton; Blackhawk Mystery, a four year old son of Anwick Arthur, to N. S. Boone of Dublin, and Blackhawk Ring O Bells, a four year old son Anwick Arthur, to Donahue & Son of Alamo. Lovell states that the demand for draft stallions of quality is more active now than at any time during the past few years.

GLENN COUNTY POLAND BREEDERS GUARANTY SALE

The Glenn County Poland China Breeders Association, one of the many livestock organizations that are putting that county to the front as a source of high class pure bred livestock, will sponsor a sale of bred sows, gilts and boars to be held at the Glenn County fair grounds, Orland, January 13. The sale will consist of around 65 head that have been selected from the top herds of that county and advance information is to the effect that the quality of the offering will be high. Ord L. Leachman of Sacramento is in charge of the sale.

REPORT OF TAGUS RANCH SALE

The Merritt-Bowers Company disposed of more than $25,000 worth of livestock and farm implements in the two day sale at the Tagus Ranch near Tulare, December 16 and 17, and, had the days been a little longer, a much larger list of sales would have been recorded.

The first day of the sale, which was handled by Ord L. Leachman, the livestock auctioneer of Sacramento, was devoted to selling $12,500 worth of implements, horses and mules. It was dark before the pure bred horses were reached, only two registered Shire mares going through the ring. These brought $335 and $330 from H. J. Stokes of Visalia and R. K. Smith of Clovis respectively. The work horses and unbroken horses averaged $150. The ten spans of mules averaged $255.50, the tops being the four show mules that the Merritt-Bowers Company had over the fall circuit, the sor

Berglund's Duroc-Jersey Sale

Gilts bred and open, bred sows and spring boars that will be just what you want. They are of true, big-type breeding and grow that way. Eight open gilts that will attract every one. Five spring boars that will be fit and right to head your herd. Any breeder needing females that are right attend this sale. Sale at

Dixon, Cal., 1 P. M., January 15th

For Catalog write

Col. Ord L. Leachman, Sacramento
Auctioneer

H. M. BERGLUND, Owner
Dixon, Cal.

Announcing First Annual Bred Sow Sale

California Duroc-Jersey Breeders Association

University Farm, Davis

Wednesday, January Fourteenth

40 — High Class Bred Sows and Gilts — 40

This sale has been planned to afford established breeders and beginners an opportunity to select foundation stock that represents the best that is being produced in the top herds of California.

Every animal has been selected with great care and is guaranteed to be a breeder. The offering is right individually and the bloodlines are the best available.

THE DUROC FILLS EVERY REQUIREMENT OF THE PRACTICAL HOG RAISER. Durocs are prolific, Durocs mature rapidly, Durocs feed economically, Durocs breed uniformity in size, type, conformation and color, Durocs are profitable, that is why Durocs outnumber any other breed.

Watch the Cultivator for detailed announcement. PLAN TO ATTEND THIS SALE. Write for the Catalogue

California Duroc-Jersey Breeders Association

Harvey M. Berglund, Sales Manager
Dixon, California

S. E. Whiting, Secretary
Sacramento, California

Ord L. Leachman, Auctioneer

rel wheelers going for $670 to E. D. McSweeney of El Monte, and the black leaders to Joe Ross of Stratford for $630. Fifteen suckling mules went for $30 each.

The Shorthorn sale, which occupied the second day, brought an average of $247 for the 50 females and $220 for the five bulls. It was just about dark when the bulls were sold and the buying was slow on these, as a result of which the Merritt-Bowers Company decided to hold a bull sale in the spring when the trade would be calling for herd sires. The six unregistered Hereford bulls averaged $153.

The cattle offering was presented in breeding condition, as a result of which the purchasers reaped the benefit on values, for in the lot were any number that would have sold at a considerable advance in price had they been put up in what is usually termed sale condition. The Merritt-Bowers Company, however, was well pleased with the sale.

T. R. Carlyle of Sanger, one of the heaviest buyers, topped the sale with $500 to [illegible]en, a big cow with red bull calf at foot. J. A. Knight of Tipton was a heavy buyer. Thomas Harrison and Dr. J. J. Summerfield made the trip from Santa Rosa to take home several head, and Turney Brothers of Strathmore bought a number.

Announcement was made that another two day sale would be held March 16 and 17.

The Shorthorn sale list follows:

Females

Heard's Queen (with red bull calf, T. R. Carlyle, Sanger, $500.
La Belle Phoenix, Dr. J. J. Summerfield, Santa Rosa, $210.
Bonn Boy's Milkmaid, J. A. Knight, Tipton, $275.
Milkmaid (with red heifer calf), Thos. Harrison, Santa Rosa, $410.
Belle Heard, T. R. Carlyle, $245.
Beechwood Bloom, Turney Bros., Strathmore, $260.
Bewitching Harriett, Turney Bros., $250.
Creamy Nectarine (with roan heifer calf), Jesse C. Werly, Raymond, $210.
Bluebell Mineola, T. R. Carlyle, $245.
Narcissus (with red bull calf by Knight Avon 2nd), Dr. J. J. Summerfield, $245.
Bonnie Dairy Avon, T. R. Carlyle, $230.
Countess Jr., Thos. Harrison, $260.
Blossoming Lady Fair, J. A. Knight, $225.
Native Flower, T. R. Carlyle, $305.
Nectarine, Dr. J. J. Summerfield, $205.
Carnation Bloom, T. R. Carlyle, $175.
Heard's Beauty, T. R. Carlyle, $360.
Minnehaha, Dr. J. J. Summerfield, $210.
Lucy Queen, Chas. Weaver, Tulare, $335.
Nellie Queen (with red calf), J. A. Knight, $220.
Luclnda May (with heifer calf), J. A. Knight, $210.
Lady Heard, J. A. Knight, $215.
Bonn Boy's Countess, J. A. Knight, $335.
Beverley Daisy, J. A. Knight, $275.
Cora Queen, J. A. Knight, $250.
Nuggett Daisy (with roan heifer calf), T. R. Carlyle, $310.
Colfax Daisy Avon, T. E. Cochrane, Hanford, $165.
Nettie Hinshaw (with roan heifer calf), J. A. Knight, $340.
Cherry Beatrice, T. E. Cochrane, $175.
Leonora, Dr. J. J. Summerfield, $255.
Lily (with red heifer calf), J. A. Knight, $250.
Charlotte Glenn, W. F. Berry, Porterville, $205.
Colfax Daisy 6th (with red heifer calf), J. A. Knight, $155.
Chyle Moss Rose, J. A. Knight, Tipton, $185.
Charming Queen, J. A. Knight, $230.
Nora Headlight (with roan heifer calf), J. A. Knight, $250.
Laura Colfax (with red heifer calf), J. A. Knight, $260.
Bessie Coronado, J. A. Knight, $145.
Belleflower Phoebe, W. F. Benz, Porterville, $225.
Lady Lovell (red heifer calf), Dr. J. J. J. Summerfield, $245.
Nantucket (with red bull calf), Turney Bros., $320.
Polled Duchess, Thos. Harrison, $140.
Clover Beauty, Dr. J. J. Summerfield, $140.
Gwynne, J. A. Knight, $245.
Best Arizona Bloom, Turney Bros., $295.
Clara Hyacinth, T. R. Carlyle, $170.
Beaming Fair Beauty, Turney Bros., $360.
Mineola, T. E. Cochrane, $215.
Lillian Colfax (with red bull calf), T. E. Cochrane, $200.
Carmine Native Flower, T. R. Carlyle, $200.

Bulls

Bryant Knight, T. R. Carlyle, $280.
Bartlett's King Avon, Jesse C. Werly, $200.
Emeritus Glenside, J. A. Knight, $250.
Cedar Craggs D., Jesse C. Werly, $170.
Emir Gwynne Sequel, Thos. Harrison, $200.

MORRIS HOLSTEINS

Continued from Page 862.

31. Segis Pontiac Ethel; Chas. A. Harrington, $735.
32. Nydia Creamcup Walker, April, 1914, 23.3 lbs.; Brownell & Marshall, $600.
33. Natoma Verona Korndyke, January, 1916; J. Pfiester, Grigley, $235.
35. Heil Pontiac Mechthilde, April, 1911, 350.33 lbs.; J. Self, Williams, $190.
37. Albina Veeman Hengerveld, January, 1911, 29.98 lbs.; H. Michel, $525.
38. Changeling Tidy Abbekerk Clyde, April, 1911, 18.74 lbs.; Anderson & Fogarty, $410.
39. Cora Fobes of Linwood, May, 1916; E. M. Holje, $410.
40. Creamcup Electra Pontiac 2d, May, 1914; P. Brunold, $485.
41. Aralia Arcula Alcartra, April, 1914, 18.08 lbs.; Hayes Stock Farm, $525.
42. El Prado Contenta, April, 1913, 27.65 lbs.; A. P. Dutro, $675.
43. Arcula Alcartra De Kol Burke, August, 1916, 15.96 lbs.; Hayes Stock Farm, $500.
44. Maylyntje Alcartra, January, 1916, 15.75 lbs.; C. O. Parkhurst, Dixon, $725.
45. Miss Dutch 2d, August, 1912, 26.71 lbs., Leeman & Kilgore, Ripon, $600.
46. Pearl Beets Walker, December, 1914, 701.49 lbs.; E. H. Fink, Acampo, $700.
47. Princess Valley Mead Walker, February, 1915, 15.80 lbs.; H. E. Vogel, $1.050.
48. Adralla Walker, March, 1915, 14.43 lbs.; J. McKindley, $575.
59. Emerald De Kol Segis, October, 1914, 11.38 lbs.; Chas Barboni, $225.
60. Cobossie Korndyke Burke, August, 1914, 665.3 lbs.; J. McKindly, $460.
61. Stem Winder Karen Tilly Alcartra, September, 1915; J. McKindley, $410.
62. Miss Alcartra Aaggie, September, 1915; J. McKindley, $275.
65. Jetze Zwarthak Lady 2d; Hayes Stock Farm, $450.

Bulls

49. Sir Aaggie De Kol Acme 8th, November, 1917; Brownell & Marshall $550.
50. Sir Aaggie De Kol Acme 11th, April, 1918; Joe Cardoso, Los Banos, $310.
51. Sir Aaggie De Kol Acme 12th, April, 1918; J. N. Frey, Franklin, $260.
52. King Morco Alcartra 17th, May, 1918; E. M. Holje, $210.
54. Prince Gelsche Walker Terpstra, August, 1918; W. D. Trewhitt, Hanford, $500.
55. Prince Gelsche Walker Mandel, August, 1918; Wm. Martin, Woodland, $205.
56. Prince Gelshe Walker Sita, September, 1918; E. R. Goodwin, $410.
57. Prince Gelsche Hermana Walker, November, 1918; A. J. Zabala, Soledad, $200.
58. King Mead Hark, October, 1918; William Remke, Woodland, $210.
64. King Clorinda Sadie Vale, March, 1917; Hayes Stock Farm, $650.

FIRST ANNUAL GUARANTY SALE

Glenn County Poland China Breeders Association

Orland, Cal., Tuesday, January 13th. (Glenn County Fair Grounds)

65 Selected Bred Sows, Gilts and Boars

For the initial sale the following herds have been drawn upon to furnish an offering in keeping with the established quality of Glenn County Livestock:

R. J. Yates
R. M. Rankin
Penfield Bros.
V. H. Warnock
J. A. Miller
J. K. Burnett
M. H. Summers
Adam Lachenmeyer
J. E. Faltings
Ferguson & McKaig
Chas. Templeton
W. A. Ort
Mrs. C. J. Lathrop

Every animal listed represents the most popular and proven blood lines known to produce strictly big type Poland Chinas.
Watch this paper for further announcements. For catalogs address

Ord L. Leachman, Auctioneer and Sale Manager

1111 Seventh Street Sacramento, California

Prince Walker Cornucopia

The Highest Record Son of Prince Gelsche Walker

His dam ALBA SADIE CORNUCOPIA CREETA has just completed official records of 36.26 pounds butter from 516.7 pounds milk in seven days. Her previous records were as follows:

At seven years—
Milk 338 days 13,849.40
Butter 866.23
At six years—
Butter seven days 34.13
Milk 532.40
At five years—
Butter seven days 28.85

She is a daughter of Sir Sadie Cornucopia, son of the first 30 pound cow, Sadie Vale Concordia.
Over 60 of our best females are bred to PRINCE WALKER CORNUCOPIA, and he will be given the fullest opportunity in this herd. Put one of his young sons at the head of your herd.

Santa Anita Rancho
Anoakia Breeding Farm
Santa Anita, California
Anita M. Baldwin, Owner W. H. Taylor, Supt.

Holstein Bull Calves for Sale

No use in using a grade bull when you can have a PUREBRED for the same price

We will accept your GRADE BULL as payment for a fine PURE BRED and REGISTERED HOLSTEIN BULL CALF. You can keep your bull until the calf is old enough for service.

We have several very fine calves on hand now. Come and see them and their dams, or write for photos and pedigrees.

BURR FARM

26th and Downey Road, R.F.D. 2-Box-220, Los Angeles, Cal.

Recent Sales

both public and private have demonstrated the value of animals bred on Sunnyside Farm. Our experience in breeding Holsteins and Poland Chinas might assist you in making the right selection.

R. F. Guerin Visalia, Cal.

Buy a Young Bull

From the Family of Wonderful Producers

We have no room for boarders on this farm as every Holstein is a worker

King Pontiac Segis Netherlands 3d

Our senior herd bull, has proven his ability as a sire by the remarkable records of his daughters.

When you buy a bull from this farm you are not disappointed——prompt action is necessary as our young bulls are sold as fast as we can offer them. Good individual animals, in good health, free from disease of any kind is the only kind we sell. Description, breeding and prices furnished promptly on application.

Rosamaines Ranch, Stalder Bros Owners **Riverside, Cal.**

WATCH YOUR CALVES.

At the first indication of Cholera or Scours give them

DR. DAVID ROBERTS'

Calf Cholera Remedy

—the treatment that gets quick action

DO YOU KNOW THAT CALF LOSSES REACH THEIR MAXIMUM DURING THE FIRST MONTH

You know what happens when such ailments are neglected. It usually means a dead calf or a stunted calf. *Prompt first aid* has saved many an animal—lack of it has resulted in many a loss. *Dr. David Roberts' Calf Cholera Remedy* is regarded as a necessity on thousands of farms. Breeders do not feel safe without it. If others get good results you can do the same.

Keep It On Hand for Emergencies

PRICE $1.00 PER CAN, POSTPAID

There is a Dr. Roberts' Prescription for Every Common Animal Ailment

Ever have a cow with paralysis or stoppage of the bowels? *Laxotonic* will give quick relief. Ever have a cow retain the after-birth? Use *Cow Cleaner* and *Antiseptol* and get prompt results. Ever lose a horse with colic? *Colic Drench* at the right time would have saved him. Use *Badger Balm* for sore teats and inflamed udders; *Fever Paste* for colds and lung trouble; *Absorbent* for healing wounds and reducing enlargements.

Go to the Dealer in Your Town

Get DR. DAVID ROBERTS' Prescriptions—*not* something "just as good". Send for illustrated price list and *free* copy of *"Cattle Specialist"* with questions and answers pertaining to *abortion in cows.* Treat your own herd—Small expense.

WRITE

Dr. David Roberts Veterinary Co., Inc.
212 Grand Avenue Waukesha, Wisconsin

If you are interested in this very great breed you will find it worth your while to visit the

Ortega-Underhill-Rancho
O. U. R.
Registered Hampshires

Thos. T. Dinsmore, Manager Santa Barbara, Cal.

You will find there some of the best blood in the country and a truly great herd in course of construction.

The Poplars----Hampshire Headquarters

Our reserve grand champion sow Wavelet at the big Los Angeles show is the mother of 8 little Wavelets—a flourishing family. We won 1st on boar and 3 sows bred by exhibitor, also 3 other herd prizes. We were in the money on aged boar, twice on junior yearling boar, and once next the top on junior boar pig. All young stock the get of our great boar, The Harvester Again. Write us your wants.

C. J. Gilbert Lancaster, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147 at head of our great herd of brood sows.

HARVEY'S CHOICE
Grand Champion Boar at Los Angeles 1919

LOOKOUT CHEROKEE
Grand Champion at Liberty Fair

SIOUX QUEEN
Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager Redlands, Cal.

Hauser's Digester Tankage

Gives Greatest Value for Least Money
It Makes Them Fat

Hauser Packing Co. Los Angeles

Better Percherons

In his annual report made to the Percheron Society of America President White said:

"I am convinced that the time has come when American breeders must give close attention to the blood lines of their Percherons if they are to make progress in the production of better Percherons, particularly those which will transmit their own good qualities with a high degree of certainty to their progeny. It is better to produce two good ones than 20 of the mediocre kind. Castration of the inferior stallions with unsparing hand must occur if the average of our breed is to be improved. The importation of Percherons, in my opinion, is a thing of the past. Some no doubt will be brought over, but not many. With this in mind it is the desire of the society to do everything possible to encourage the American breeder and the dealer in American bred Percherons. I believe that the interests of the breed can best be served by the development of some great breeders shows in connection with state fairs and I hope that plans to this end may be worked out during the coming year."

Secretary Wayne Dinsmore in his report said: "We recorded more American bred Percherons during the last fiscal year than in any previous year except 1917. Registrations amounted to 3,515 American bred stallions, 5,615 American bred mares, 19 imported stallions and two imported mares, making a total of 9,130 American bred animals and 21 imported animals, or a grand total of 9,151. Imported animals were all imported in past years and recorded in minor associations, but were registered in the Percheron Society in order to permit of the registration of their produce. A year ago the registration of stallions was 25 per cent less than the registration of mares, but this year the registration of stallions fell short of mares by 2,100, or 37 per cent less. This proves conclusively that while Percheron breeding is increasing slowly but surely owners are, with wisdom, castrating the inferior stallions, and this is as it should be. During the past year the society has issued 8,764 transfer certificates, transferred 324 more animals at the time their pedigrees were rewritten at the request of buyers, and 1,038 colts which were sold prior to registration, making a total of 10,126 animals which were transferred on our records during the past fiscal year. This is a decrease of about ten per cent as compared with last year; but the steadily growing interest in Percherons is well shown by an analysis made about August 1, which revealed the fact that no less than 4,831 men not yet members of the Percheron Society of America had transferred to their ownership the past three years. This shows many states ha[ve] and are back their money.

"Illinois [has] the largest number of Percherons during the past year, with a total 1,349 head purchased by breeders in the state. Iowa came second with 1,224 and Canada third with purchases of 742 head bought in the United States.

"Forty-six Percherons were exported to Great Britain during the last fiscal year and since November 1 17 head went to Japan. These shipments promise to be but forerunners of more extensive purchases."

Directors elected to serve for the next three years were as follows: U. L. Burdick, Williston, North Dakota; C. F. Curtiss, Ames, Iowa; W S. Dunham, Wayne, Illinois, and Arthur Colegrove, Girard, Kansas. E. B White of Leesburg, Virginia, was re-elected president; U. L. Burdick of Williston, North Dakota, vice-president; C. N. Stanton, treasurer, and Wayne Dinsmore continues as secretary.

Venezuelan Salt Meat Finds Market in Trinidad

In meeting the higher cost of living problem the people of Trinidad find considerable relief in the plentiful supplies of cattle on the llanos of the neighboring country of Venezuela. The retail price of fresh beef or veal in the local market is 18 cents per pound, which is not over two or three cents higher per pound than the prewar price.

An interesting new method, however, has lately been put into effect for providing the people of Trinidad with meat from Venezuela, taken from cattle slaughtered under sanitary conditions before leaving that country and while in superior condition, and boning and salting the meat, and packing in such a way that it reaches Trinidad still full of fat and juice, and in a most tender and palatable condition, so that it meets with a very quick and ready sale at 16 cents per pound, two cents per pound less than the price for fresh meat, but the real economy being very much greater, as the weight per pound represents all solid meat, whereas the fresh meat sold in the local markets contains a large proportion of bone and other wastes. The large estates in Trinidad are especially anxious to get this meat, as it keeps in condition under conditions of rural transit and tropical heat much better than the ordinary fresh meat from Port of Spain.

Only oxen are at present used for this purpose. They are brought from the llanos into large savannah inclosures about one mile from Maturin and pastured on luxuriant grass until they weigh 1,000 pounds or over, and then slaughtered. The carcasses are then cut into four quarters, temporarily salted, and taken to another department where they are hung on iron bars and allowed to drip. The day following the meat is cut away in slices from the bones. These bones are sold on the spot to local peasants for six cents per pound. The heavy side portions of fat are also removed and sold to a local soap factory for 12 cents per pound. The hides are shipped to Port of Spain, where they are sold to local tanneries and fetch from 25 to 26 cents per pound.

The meat, after having been sliced from the bones, is thoroughly salted about 25 bags of salt, each weighing about 100 pounds, being used on the meat portions of about every 30 oxen slaughtered. The meat is then bagged (100 pounds each) and shipped by boat about four days from the time it is first salted. The beef arrives at Port of Spain practically fresh but is re salted after arrival and is now in condition so that it can be readily preserved for several months.

The Cattle Situation

The cattle situation in California is not very complex at the present time; prices are good for beef; grass is sure but will be late; the banks are full of money. Now if some way for a cow man to get it can be found!

The feeder movement, with the exception of a few lots of Southern and Central Arizona cows, is over. The undelivered Northern Arizonas will remain undelivered this year as lack of cars and heavy snows ran deliveries short 40 per cent. The only movement now in feeders is more or less local and concerns the Inyo County cattle which fattened and those which did not.

The cows, principally aged, being shipped in are being priced on a basis of $50 to $60 Los Angeles or $5 higher in the San Joaquin. The steers which sold brought seven cents for yearlings up and eight cents up for twos and threes f. o. b. shipping points. By the head the Northern Arizonas ran better than $80 for twos up and the yearlings $45 up. Cows sold at six and seven, or from $50 to $70 a head for Arizona. Utahs were scarce and averaged slightly better. Nevadas averaged eight and nine cents for steers and seven for cows, but weighed heavier.

At the present time there are abou

8000 cattle in the Globe yards owned by various packers mostly, but this is only a few weeks supply for the Los Angeles market alone. Not over 4,000 head of beef can be expected from the Bishop and Independence country; nothing from Utah or Nevada as affecting Southern California; a very limited supply in Phoenix or Imperial; few cattle are being fed in the San Joaquin; practically none on the Coast south of Betteravia. Kern County has some beef in the making, as has Madera County, but few considering normal numbers in ordinary years.

It is rumored that two cars of fancy steers cost San Diego 13 cents recently and that Imperial contracts have been closed on a 13 cent steer basis with stronger tendencies.

The summing up of the situation is that anything fat before April or May will command high prices and the late rains preclude the possibility of any grass beef before May or June or probably later.

The [illegible] market needs will be in the [illegible] months at least 60,000 cattle, as the people flocking in have increased demand. The cattle in sight, figuring roughly, to fill this demand hardly number 34,000 head, so our good people of California can figure to eat many old dairy cows this spring, as they will be in demand if some unknown beef supply doesn't show up.

The coast and vicinity kills about 750,000 a year and considering the apparent shortage on the ranges in all the states except Arizona, it's difficult to tell where the cattle will come from. The slaughter and forced sacrifice of breeding cows, three years of drouth, the low prices paid by the packers, and the difficulty in securing money for cattle ranch purposes has hit production hard.

California is a third short on normal range cattle supply. Arizona is short both on number shipped this year and its calf crop. Utah is short and also Nevada, Montana, and Wyoming and the entire West has suffered from drouth and is now losing again from blizzards and heavy snows.

As for figuring prices any cow man of discernment and experience knows better than to attempt it, as the packers and a very few men among them on this coast will tell us just what price we will get when the time comes.

We hope it will be enough to recompense us for the heavy expense and hardships endured, and for a number of us this is the last try to stay in a game in which the cards are stacked against the cattle producer and feeder. There are some 60,000 less cattle on feed today in this part of the Southwest than the normal average of the past four years.

Another rotten year with rightful fair profits crowding the Big Five's coffers and dividends, instead of going to the producer and a part to the feeder, will still further diminish the number of fools who stay in such a game, among others, yours truly.—A. L. Spellmeyer.

Under the present condition of the cattle business no one can afford carelessness in utilizing the roughage on the premises. To make every bit count to its fullest extent the grain, fodder and hay should be ground and fed out as a measured ration. A mill might be purchased as a community affair and all the feeding stuffs in the neighborhood can be stowed away for winter in the most palatable and cheapest condition. No one should wail about high priced feed until this is first done, for the saving will be an equalizer on the amount that must further be paid out for feed. Waste is gross extravagance in these fiery times.

You can generally tell from the expression of a horse's face whether or not he wants you to stroke his nose. There is plenty of expression in a horse's face. He does not grin as you do, but his eyes are clearly kindly or the reverse; he expresses a great deal by the pose of his ears; and those who know horses well can read their faces as you read a man's. The Almighty made nothing in the way of benignity that can exceed the comfortable, friendly, willing, kindly look on the face of a well-fed, well-treated and naturally good-dispositioned horse.—Boston Transcript.

TREATMENT FOR GOAT LICE

Goat lice fortunately are always closely associated with the goats. They are not known to breed on other animals nor will they live for more than a few days apart from the host. This, of course, makes their destruction comparatively easy.

Dipping in arsenical solution or nicotine sulphate is probably the best procedure as it destroys both the sucking and biting lice. However, where the sucking lice are not very abundant the breeders may prefer to treat the goats by the dust method. It has been found by the bureau of entomology that these lice can be destroyed completely with a single application of a whitish powder known as sodium fluoride. About one-fifth of an ounce per animal will accomplish complete eradication, killing both the lice and their eggs. For the treatment of large herds a high percentage of destruction can be secured by blowing the sodium fluoride onto the goats as they go through a chute. A hand dust gun operated on each side of the chute is fairly satisfactory for this work. At this rate it would take about one and one-fourth pounds of sodium fluoride per hundred goats and the cost of this material bought in large quantities would be about 30 cents per pound.

HOW OUR MILK IS TESTED

Estimates made by the United States department of agriculture show how the 87,905,000,000 pounds of milk produced in the United States annually are utilized. Forty-four and one-half per cent is used as fresh milk for human food, while 36 per cent of the gross supply is converted into butter and 4.5 per cent is made into cheese; another 4.5 per cent is transformed into canned milk, 4 per cent is used in ice cream making, 4 per cent is used in feeding calves and hogs on the farms of origin, and 2.5 per cent is lost in shrinkage and other waste of the dairying industry.

BUYING SHROPSHIRES FOR BUTTE CITY RANCH

While attending the International Show, W. S. Guilford made several additions to the Shropshire flock maintained at the Butte City Ranch. A ram lamb, said to have been the pick of the University of Wisconsin flock, sired by a Renk ram and out of a Broughton ewe, headed the purchase. Guilford also made selections from the Broughton, Renk and McKerrow flocks. The Butte City Ranch is gaining a fine reputation as a source of good Shropshires and present plans contemplate an extensive show circuit next year. Before returning to California Guilford will visit a number of New York flocks.

H. G. Ball, an extensive oil operator in the Taft and Coalinga fields, has purchased a large ranch near Tulare and will raise pure bred Holsteins and Poland Chinas. To start off his herds he has purchased a senior two year old cow, Lady Zenobia 3rd, and Jennie Wren Edith Pride from Walter Mitchell of Visalia and Miss Model C, a Poland China sow from A. J. Elliott who last year made a thousand dollars on the animal. The sow was bought at the Tulare County Breeders sale October 21 for $300 and Mr. Ball already has sold two of the unborn litter, a boar pig and a sow for $100 each.

Ruby Pietertje of Forest Hill 2nd, the new California record senior four year old owned by W. J. Higdon, Tulare, is keeping up her wonderful production on 30 day test. At the end of 20 days she has to her credit 2,005 pounds milk and 87.3 pounds butter fat and is now milking as high as 115 pounds per day and making right around 4.4 pounds of fat per day.

Total holdings of hides and skins for the month of October were 40,678,536, according to reports received by the bureau of markets from packers, dealers, importers and tanners. This is a net increase of 3,308,558 over September.

Manufacturers used about 69,000,000 pounds of wool, grease equivalent, in October, 1919, the greatest amount consumed in any one month since May, 1918, when the wool textile industries' capacity was taxed by the war's demand.

Get More Milk

Maximum milk production depends upon the ability of your cows' digestive organs to produce thorough assimilation of feed. Keep them in tip-top productive condition. With winter stabling and feeding they need help to resist disease and maintain normal milk yield. All animals need help at this time.

Dr. LeGear's Stock Powders

supply the needed laxative elements, the tonics and blood purifiers so necessary to keep your stock healthy. Insure healthy offspring, full yield from milkers; get rapid gain on packer stuff and keep work stock in first-class trim.

Get Dr. LeGear's Stock Powders at your dealers today. Your dealer is authorized to refund your money if you are not satisfied with results.

Sold by 40,000 dealers—never by peddlers. Ask your dealer for them today.

New Stock and Poultry Book

Just written—128 pages. Most complete treatise on care and treatment of stock and poultry. By Dr. LeGear—27 years practicing graduate veterinarian and poultry expert. Send 10c today and we will mail it postpaid.

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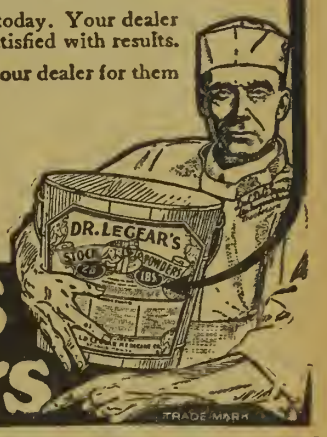


Dr. LeGear's Stock Powders

PURE HAWAIIAN CANE

MOLASSES

By actual test it will increase pork production half a pound daily over a barley and tankage feed yet it sells for less than half the price.

By actual test it will increase milk production 15 per cent.

Seventy-five per cent of the Blue Ribbon Winners at the Livestock Show were owned by people who are feeding molasses.

If you want increased production at lower costs feed molasses.

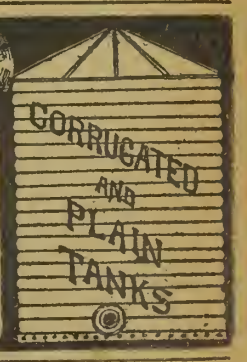
Write us at once for prices and interesting booklet telling how to reduce feeding costs.

W. H. Young Company
58 Sutter Street San Francisco

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. Duke, Gazelle, Siskiyou, Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

SURFACE IRRIGATION
12 FOOT 6 INCHES LONG — DOUBLE LOCK SEAM — ONE PIECE BODY
MANUFACTURERS OF
Well Casing, Tanks, Riveted Water Pipe and Supplies
AMERICAN STEEL PIPE & TANK CO.
P. E. Building, Los Angeles, Cal. Branch at Fresno



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147-ACRE MIDWEST FARM, $4400 WITH PAIR HORSES, three cows, mowing machine, plows, wagons, long list valuable tools, mile stores, churches, creamery, other advantages, handy to state road, near railroad town; 100 acres loamy tillage, spring-watered pasture; estimated several hundred cords wood, 100,000 timber; 275 apple trees, other fruit; 5-room house, basement, barn, granary, poultry house, etc. Owner in other business, sells all, $4400, easy terms. Details page 67 Strout's Catalog Farm Bargains 23 States. Copy free. E. A. STROUT FARM AGENCY, 831-AG, New York Life Bldg., Kansas City, Mo.

For Sale—100-acre Ranch, 18 acres Muscat Grapes, 6 acres Apricots, 10 acres prunes, 1 acre Pears, 2 acres Alfalfa, Walnuts, Olives, etc. Good water supply, house, barn, etc. Price $7500. CHICKEN RANCH of four acres, 4-room house, water, 2 acres deciduous fruits, strawberries, buildings, some chickens, horse, buggy, etc., included. Price $3,500. OTHER BARGAINS in farms, grain land, citrus groves, vineyards. Claude Wilson, Escondido, "The Sunkist Vale."

Snohomish County, Washington — 6,000 acres of the finest dairy, berry or general high grade farm lands in the northwest; rapidly improving section; no drouths, bumper crops; tracts, 1 to 80 acres; ten yearly payments. This is your opportunity. Send for literature. Brownell Land Co., Birmingham, Washington.

For Sale or Exchange—6 acres Washington navels, 4 miles east of Porterville. In frostless area. Never has been damaged by frost. 2½ acres 12 years old; 2½ acres 8 years old; 1 acre 4 years old. Ideal home place. Reason for selling, living outside of state. Write Chas. Wentworth, 1721 Faraon Street, St. Joseph, Mo.

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Fine Alfalfa Land Northern Los Angeles County, easy water lift; $55 an acre, one-fifth down. Write for our alfalfa circular. Lippincott Company, Fay Bldg., Los Angeles.

Cheap—80 Acres best land in San Bernardino County. One mile from Hinkley. Water abundant. Close by school. Belle Warren, Paradise Valley Sanitarium, National City, California.

For Sale—Five and 35-100 acres exclusive of roads three miles N. E. of Redondo Beach, California. Being the North six of lot 7 McDonald tract, San Pedro Rancho. Address Jas. T. McPherson. Box 685. Willows, California.

For Sale—46 acres of land near Compton on Long Beach Boulevard corner Orange Street. Two Holt caterpillar plow engines, 1-45 H. P.; 1-75 H. P. practically new. R. Mangold, Compton, California.

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Wondergerst, California's leading Poland China sire—big himself, bred big and his pigs show the same qualities. His dam was Giantess Wonder, his sire Big Jones—both big, both winners—a combination of the greatest blood of the breed. Breed big type Polands. Start right by using this blood. Write for special offer. A liberal consignment made to the Tulare Poland China Associated Breeders' sale held Tulare, October 21st. OXBONE Herd Poland Chinas, Tipton, California.

The Best in the West—California Gertsdale and President's Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Big Type Poland China open and bred gilts sired by A. Price a 1,000 lb. boar. A few bred sows to farrow in December. Address: W. S. Adams, Gridley, California.

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Big Type Poland Chinas—900 lb. grand champion El Profito heads herd—line bred Big Timm. Viola L. Renwick, Santa Barbara, California.

Poland-Chinas—Registered and well developed. Ranch adjoins town. Moramarco Bros., Van Nuys, California.

Pure Bred Poland-China pigs for sale J. R. Carhart, Fullerton, California

WANTED

Wanted—Budded citrus trees in exchange for 80 acres Coachella Valley date land one-fourth mile from R. R. station. Might consider walnuts or other deciduous trees. Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena.

Wanted—Layne & Bowler, Byron Jackson or Johnston deep well pump, capacity 1,000 to 1,500 gallons per minute. Prefer direct connected with electric motor. Geo. A. Smith, Corcoran, California.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

Wanted—Everybody to read SPECIAL NOTICE in Cultivator of December 6th, 1919. Page 770 under heading—Cattle.

Wanted—175 Placentia Perfection Walnut Trees. C. D. Hubbard, Carpinteria, California.

CATTLE

For Sale—Two Registered Jersey Bull Calves, 4 and 7 months of age. Both fine show calves, one already has a first prize to his credit. Dams big rich producers and prize winners. If you wish type and production here is your chance. Write and find out particulars. D. T. Willand. Valley Home, Box 21. Stanislaus County, California.

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Two Holstein Bull Calves out of extra good sires and dams. Will please you if you want an especially good calf, priced very reasonable, herd free of tuberculosis. E. M. Morrow, Modesto, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—20 Head Registered Holsteins bred to King Riverside Mead, 1003 lb. bull. A. B. Comfort (owner), Guernsey, California

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Jersey Bulls—Type and production, easy terms. N. H. Locke Co., Lockeford, California.

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Registered Holstein Bulls, various ages at Nuevo Stock Farm, Nuevo, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

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BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Third sale at the Ranch—all breeds—April 17, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

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C. P. Bailey & Sons, San Jose, California. Importers and Breeders of Thoroughbred Angora Goats and Persian Sheep for fifty years.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

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Nursery Stock. Apples, pears, peaches, cherries, prunes, plums, berries, etc. OURS IS MAIL ORDER SYSTEM. IT SAVES YOU MONEY. Write us now for Planters' list. 20 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—Valencia and Washington Navel Orange, Eureka and Villa Franca lemon and Marsh's grape fruit trees. One year old on sour root. J. S. Ogawa, R. A. Box 114a, Sanger, California.

Wanted—Black Walnut seedling nursery. Will buy or graft on shares. Have my own scions, Eureka and Placentia Perfection. The Walnut Nursery. W. A. Litten. Prop., Whittier, California. Phone 6294.

For Sale—Unrooted Grape Cuttings; also a limited supply of rooted Tokay and Cornichon grapevines, and several thousand almond trees. Burke's Nursery, Lodi, California.

For Sale—Orange seedlings, sour and sweet. Budded valencias, lemons, navels. Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena, California.

For Sale—One year old Valencia Oranges and Eureka Lemon trees. Very fine trees. Ketscher's Nursery, Santa Ana, California.

For Sale—3,000 select orange trees. Also 3,000 lemon trees; first class trees; 20,000 seedbed stock. A. R. Rideout, Whittier.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—3,500 late Valencia orange trees, 2 years old. Enterprise Nursery, 1197 N. Fair Oaks Ave., Pasadena, California.

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Billiken Chester Whites—Entire herd for sale. Every animal listed and priced to move rapidly. Herd boars and sows. Young service boars. Seven fall litters of pigs ready for weaning, by four different sires. Write for special price list. C. B Cunningham. Mills, California

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If you wish to be sure of having your orders for eggs from our wonderful imported prize geese, filled in the spring, order now, giving us a 25 per cent deposit. Eggs $1 each. Paradise Valley Poultry Ranch, National City, California.

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ANCHORAGE FARM BERKSHIRES
Orland, California.
BRED GILTS FOR SALE.

"ACHIEVER" the BOAR
An outstanding son of ONWARD 4th, a son of the famous "EPOCHAL." His dam, Escalon Fashion Princess, one of the best sows ever owned by A. B. Humphrey, was a Grand Champion and sold for $500.00.
CASTLEVIEW RANCH,
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Home of big boned, good footed Berkshires.

BARON DUKE 201ST PIGS
are in demand. They have consistently won during 1919 the highest honors in the show ring. Baron Duke 201st is a Grand National Champion. He is the sire of champions. His 15 months old son was Grand Champion at Sacramento and San Francisco. The San Francisco judge said he was the best boar of his age that he had ever seen. I have 3 of his spring boar pigs for sale. SANDERCOCK LAND COMPANY, 401 Market Street, San Francisco. In charge of Natomas Land Sales.

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are bred on the Lark Meadow Ranch for big bone, strong backs and the right type to produce profit for the purchaser. Bred and open gilts from most popular strains for sale now.
GEO. A. STINGLE, El Monte, California

Grape Wild Farm Berkshires—Guernseys—spring pigs sired by Big Leader and Grape Wild Farm Leader. Guernsey bull up to 8 months old. A. B. Humphrey, Prop., Escalon, California.

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Real Good Berkshires, cholera immune. Frank B. Anderson, Box 724, Sacramento, California.

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"May Rose" Duroc boars have been first and champions at the California state fair and L. A. shows, where the competition was the hottest. We have a few boar pigs sired by them out of our great "May Rose" sows ready for sale. Grab one while they last. Also booking limited number of services for approved sows for our champion boar "May Rose King." Take a look at them. Seeing is believing. Elliott-Brant Rancho, Owensmouth, California.

Weaned Pigs For Sale—Pure bred Duroc-Jersey. Sired by Long Model Defender, a first prize boar and son of Great Model, the most popular boar on the Pacific Coast and Defender Ohio Maid, my wonderful big sow and the centre of attraction at this fall's fairs. No fancy prices. Green Canyon Ranch, Fallbrook, California.

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Duroc-Jersey Pigs, the big kind, have 3 top boar and sow weanlings, from big sows, litter 11, Sired by Jr. Champion Golden Cherry 5th. Fit for the best herds. Improve your blood. First check for $25 gets choice, guaranteed. R. A. Chapman, 413 Owl Block, San Diego, California.

Duroc-Jerseys at Ireland—Sows sired by Cherry Volunteer 2nd and Reformer, bred to Ireland Joe Orion at public sale January 30, 1920. Write for Catalogue, 1219 Brockman Bldg., Los Angeles, California.

I Will Offer a dozen first class young Duroc sows bred for spring litters to my crack yearling boar Nutmeg Gana 292547. Worth investigating. L. R. Hitchcock, Van Nuys, California.

Am Over Stocked and will sell at little better than pork prices 50 head of very fine registered Duroc-Jersey spring gilts. First come first choice. Green Canyon Ranch, Fallbrook, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

For Sale—One Yearling Boar, Duroc-Jersey. Wonder Model No. 265707. Big Type, satisfaction guaranteed. Address A. R. Bardrick, P. O. Box No. 5, Oceano, California.

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The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co., Address: R. K. Walker.

Weanlings—Gilts open or bred to a son of Great Wonder I Am. Service boars. Derryfield Farm, Capital National Bank Building, Sacramento, California.

Pure Bred Duroc-Jersey pigs of both sexes. Also one yearling boar, best blood lines in state. Address: J. A. Culp, R. F. D. No. 1, Fillmore, California.

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For High Class Durocs write Leest & Mounier, Van Nuys. Blood of Orion King Gano.

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Cory Thornless Blackberry—Extra strong, well rooted tips. No order too small and none too large. Send for descriptive price list now. Place your orders early. Ekstein Nurseries, Modesto, California.

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Domestic Rye Grass, Italian special, 10c per lb. f. o. b. Stockton. Also Burr Clover Burrs. Aurora Seed Mill, Stockton, California.

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Write the A[illegible]ds wanted. F[illegible]rs filled promptly [illegible]r-loads. Box 50[illegible]

Rhubarb Root[illegible] .00 per hundred; [illegible] year old roots $1.00 [illegible] dozen. Curt[illegible] Bulb Company, Santa Cruz, California.

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Turkey Eggs—Orders booked now and shipped in laying season. Bronze, also Mammoth Bronze. Robinson Turkey Ranch, San Dimas, California. Covina Phone 902.

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For Sale—At Antioch, 750 wood trays 72 in. long, 28 in. wide, 3 in. deep, inside. Handles each end 1x3 cleats on bottom for stacking. Ideal for drying fruit; will entertain any reasonable offer. ILLINOIS PACIFIC GLASS COMPANY, 15th and Folsom Sts., San Francisco.

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Ever Increasing Trade finds us better prepared than ever before to take care of our Day Old Chick business. New concrete building—100 Jubilee machines hatching eight breeds. We sell Hyde's W. I. Cockerels from trapnested stock. Great Buff—shipped on approval; $5.00 to $... Buff Orpingtons also. Interested ... B. W. Archibald, Soquel, Santa Cruz County, California.

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Quality Barred Plymouth Rocks and White Leghorns—A Western strain that won in the Utility and Exhibition world's competition. None are better bred. Guaranteed hatching eggs and sturdy Barred Rock breeding males for sale. Free circular. GOLDEN RULE POULTRY FARM, Porterville, California. Care of White River Stage.

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Baby Chicks—Order now for 1920 and get what you want when you want them. White and Brown Leghorns, R. I. Reds, Barred Rocks. Safe arrival guaranteed. Write for free circular. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto.

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Barred Plymouth Rocks—"Nothing better in poultry." Prize winners and wonderful layers. Stock for sale. Charles H. Vodden, Los Gatos, California.

White Guineas—Cockerels from Eastern eggs, large and hardy, $5. The FERRIS RANCH, S. Reservoir, Pomona, Cal.

Pit Games the Kind That Win. Cocks, Stags, Hens and Pullets. Prices reasonable. R. H. Crane, Route 3, Santa Rosa.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

Wanted—One Sicilian Buttercup cockerel. Mary Tolle, Orland, California.

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Beat the Butcher—Raise your own rabbit meat and know it is healthy. Our magazine tells you how. One year for 12 one-cent stamps. After January 1st 25c so get it now. SANDERSON, Eagle Rock, California. Dept. CC.

Pedigreed Flemish Giants; also utility stock. No fancy prices. Maud Beeching, 1578 W. 46th Street, Los Angeles.

Choice Registered Rufus Red Belgian Hares. Prices reasonable. C. W. Clark, 4848 Erskine St., Omaha, Neb.

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Tanks, Pumps, Windmills, Ranch Tools Rebuilt, guaranteed do same work as new, save half. No profiteering. Compare prices and material. Make new galv. tanks, 100 to 2000 gals., save 20 per cent. Why pay more? See bargain prices ads L. A. Sunday papers. DEMMITT CO., upstairs, 120 N. Main, Los Angeles.

For Sale: Single stage No. 3 B. J. vertical pump; 2 stage No. 4 B. J. vertical pump; 2 spreader bars, oil bowls, thrust bearings, line bearings; 2 12x18 cast pullies; 12x52 wooden pulley, 100 feet 5⅝ inch casing, 35 ft. 4 inch casing, 15 H. P. G. E. vertical motor. R. C. Patton, R. D. No. 2, Orange, California.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

For Sale—2 de Laval Silos, Calf-way milking machine, De Laval separator. James Mills Orchards Corporation, Hamilton City, California.

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Ventura Bean Planter, 4 row, cheap for quick sale. Dr. J. H. Budau, Huntley Apartments, Los Angeles.

For Sale or Exchange, Holt Caterpillar Tractor, 60 H. P., $2,500. 922 W. 6th Street, Los Angeles.

Sacrifice—Scarcely used orchard TRACTOR, A-1 condition. Box 143, Thermal.

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Bag Balm is known and used wherever cows are raised. It is perfect insurance against losses resulting from Caked Bag, Cow Pox, Chapping, Inflammation, Chafing, etc. It penetrates and heals quickly, restoring the injured tissues. Cows give milk freely and in full quantity from healthy udders.

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Lung Trouble

Have a cow that about six weeks ago had what the veterinarian called pleurisy on the verge of pneumonia and treated her for it by giving medicine and rubbing liniment on throat and over lungs. In a few days the fever was all gone but she was left with a bad cough which she still has. She was fed light of grain and hay as the doctor ordered and blanketed and well cared for. Feed has been increased and she seems to have improved except for the cough and some difficulty in breathing. She is always hungry and eats heartily and chews her cud. Eyes are bright and nose moist. When lying down she stretches her head straight out resting on her chin, grits her teeth and drools from the mouth. Would like to know how to relieve the cough and difficult breathing. — Subscriber, San Diego County.

This case is a little difficult to diagnose without seeing it. The drooling would lead one to think there was something wrong in the mouth. Examine it carefully for a thorn or splinter, way back to the throat. For the cough get a pint bottle of syrup of cocillana compound of your druggist and give two tablespoons at a dose three or four times a day. Gritting the teeth might be caused by bowel trouble or from something in the mouth as mentioned above. If the bowels are not moving naturally give a dose of salts or oil and turpentine. If you use the salts give a pound of epsom salts and half a pound of common salt dissolved in two quarts of water. Give at one dose. If you use oil give a quart of raw linseed oil and two ounces of turpentine.

Bladder Trouble

I have a cow that needs a veterinarian's attention but as there is none here will the Cultivator kindly give me your advice. She walks with her back slightly arched and tail out as though trying to urinate wihch in fact she does quite frequently in small amounts but walks that way all the time. She is in fair condition and seems to have no other trouble. She has been in this condition about two months.—Subscriber, Los Olivos.

Get one ounce of iodide of potash and dissolve it in half a pint of water. Give a tablespoon of the solution twice a day. Also get five pounds of ground flaxseed; the kind that has the oil in. Twice a day put a handful of it in a clean bucket and pour on it one gallon of boiling water. When cold fill the bucket with cold water and let the cow drink it. That is good to soothe the urinary passages. When milking buckle a strap around the body just in front of the udder. That will keep her from arching her back and annoying you while milking.

Sow Not Breeding

Can anything be done to get a sow with pig? I have a fine registered Berkshire that has had two litters of pigs and since has been bred several times but continues coming in heat.—Subscriber, Imperial.

She may be too fat. If she is an especially fine one and you are anxious to keep her try feeding her lightly and reduce her flesh. You might also put ten drops of the tincture of iron in her feed twice a day. Skip two or three periods and try her again.

Skin Disease and Worms

We have a mare that for two winters has broken out with little sores all over her head and neck and some on the body. She does not rub so we think it does not itch. She also has worms. What would you advise doing for her?—Subscriber, St. Helena.

For the skin trouble get a pint of Fowler's solution of arsenic and give her a tablespoon of it on the feed twice a day. Feed lightly and give laxative feed. Clipping and grooming well helps to clear up the skin. For the worms mix one pound of fresh wood ashes with four pounds of common salt and give a tablespoon of the mixture in the feed twice a day.

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Good Feeding Does It

By Jean A. Koethen

VERY few all-round poultry people are faddists. Some may emphasize one phase of poultry husbandry and some another, but when all's said and done they all realize that Biddy is a many sided creature. She must be the right sort of hen, and she must also have the right kind of feed and the right house to live in. Not only is she a prism, reflecting in infinite variety the details of care and management of which she is the object but she is one of the most temperamental of all living creatures and utterly dependent on her daily environment for the contentment which is with her the first factor in production.

I had almost said it takes a woman to understand her. Certainly no one understands her quite as readily as a woman, and we look to women poultry keepers for those niceties of care and feeding which mere man does not always compass.

Mrs. F. C. Reineking of Inglewood has cared for 2,000 hens for a year or more with no help but that of her 14 year old son. If she had not followed a carefully thought out system the work would have been impossibly heavy, but she loves her hens and she knows how to keep them comfortable. Moreover, she is a "good provider" and believes that the secret of consistent production is good steady feeding the year round.

No-Yard House
However, the upper photo shows provision for outside runs if desired.

An Adaptable House

With her husband's assistance Mrs. Reineking has worked out a plan of housing which is slightly different from that generally followed. The long house shown in the cut is made up of sections 16 by 20, each of which holds from 80 to 85 layers. This allows practically four square feet of floor space to each hen, which is ample room for hens that are kept in close confinement without yards. When I visited her the hens in this house were all confined, but another house built on the same plan was provided with 30 foot runs. Mrs. Reineking is inclined to prefer giving the hens some yard room when it is convenient but does not consider it either necessary or important for the hens to be out of doors. Given plenty of room inside, with scratching litter and clean roosting platforms, and the perennial supply of fresh air furnished by the open front and the doors between sections, they can be comfortable inside in any weather.

An unusual feature of this house is the nest boxes. They are under the front of the roosting platform, but instead of the regulation nest just large enough for a single hen they consist of two long boxes each one of which will hold half a dozen hens. This does away with danger of the hens crowding one another on the same nest and makes cleaning easier.

Each section of the long house is provided with a hopper holding 100 pounds of mash as well as with mash troughs for the hens. Water is supplied by a drip system to the galvanized iron troughs on the little platform before each section. As the hens can reach the water only through the slatted fence it is always free from filth.

A Good Mash Formula

The mash used by Mrs. Reineking contains three different kinds of protein, the meat and vegetable meals amounting to 22 per cent of the whole. It is mixed by the following formula: Three parts bran (by weight) two parts shorts, one part beef scrap or meat meal, one part feed meal (corn meal), one part barley meal, one-half part soy bean meal, one-half part oil cake meal, one-tenth part charcoal and five pounds salt to 900 pounds mash.

The scratch grain used with this mash consists of one-half sprouted barley, one-fourth milo and one-fourth wheat. Barley is never fed without sprouting and is always fed with the other grains. Possibly it is because of this limited use of barley and the fact that wheat is always part of the ration that Mrs. Reineking's hatches have been uniformly good. Last year when most poultrymen complained of poor fertility and hatchability her machines averaged 85 per cent.

Green feed is fed at noon and a wet mash moistened with semi-solid buttermilk in the morning. This makes four forms of protein the hens receive: beef scrap, oil cake meal, soy bean meal and buttermilk. Is it any wonder they lay?

First Feed for Chicks

The chicks on this poultry ranch receive the same generous feeding as the hens. For three days after they are out of the shell they are allowed to lie quiet under the hover without food. The morning of the fourth day eggs from the incubator are boiled hard, one egg being allowed for each 100 chicks. These eggs are chopped with several times their own bulk of steel cut oats, and are fed early in the morning and about two o'clock in the afternoon. At ten o'clock and just before bed time a mixed feed consisting of equal parts steel cut oats, steel cut wheat and fine cracked corn, with a little fine milo, is scattered on the sand. The chicks are kept on this ration of hard boiled egg and fine cut grains for a week, when the egg is gradually diminished and its place taken by the dry mash which is first

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Get More Eggs; Save Feed

Sky-high prices for eggs this winter will make big profits for those who know how and what grain mixtures to feed. Improper methods mean big loss. Prof. T. E. Quisenberry made a thousand hens in the American Egg Laying Contest lay 200 to 304 eggs each in a year. Another big flock cleared for him $6.15 per hen in nine months. His methods are explained in a new bulletin, "How to Get More Eggs and Save Feed." Get this free bulletin by writing Quisenberry today addressing care American Poultry School, Dept. 1412, Kansas City, Mo

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Stockton is to have a new Masonic temple to cost $325,000.

given when they are one week old. It consists of two parts bran, two parts shorts, two parts barley meal, one-half part corn meal and one part meat meal. The grain ration is continued till the chicks are eight woeks old and the mash till they are four months old. At eight weeks the finely cut grains are exchanged for whole grain and at four months the pullets are given the laying mash.

When I was there, the 19th of November, Mrs. Reineking had already 1,500 eggs in her incubators and was preparing to welcome her first hatch on December 4. "I do not care about starting the machines so early," she explained, "but my customers will have them. "In anticipation of an unusual demand she is planning to run 12 more machines than last season and to look after them all herself, with the help of a man for the outside work.

Poultry Queries

Conducted by J. A. Koethen

Bronchitis

My Rhode Island Reds appear to have great difficulty in breathing. There is a slight discharge from the nostrils which often entirely closes them. The afflicted fowls breathe with a noise in their throats like snoring. Their heads do not swell and they appear perfectly healthy otherwise, but hardly eat anything and don't seem to have very much ambition. I have been feeding them barley, wheat and corn and they run loose. Their coop is well ventilated. It is a little damp inside from the recent rains but last year it was quite wet inside and chickens showed no ill effects. I have lost two of my heaviest hens which were laying. They apparently strangle to death. About half my flock have the trouble and I have separated them from the others. I would be very glad if you could tell me something I could do for them.—Subscriber, Simi.

Your hens have bronchitis, a kind of cold which is usually caused by exposure to cold, drafts and dampness. The dampness in their coop may have been a sufficient cause, and it may be there are cracks in the wall or leaks in the roof, or that the coop stands in a place that is badly drained. If the water stands in puddles for any length of time after a rain or the coop is in a hollow where the cold, damp air settles these might easily be additional causes. Drainage is extremely important, especially in bad weather. Some hens are more susceptible to such conditions than others, and all hens are more susceptible at some times than at others. The fact that they were able to stand a damp house last year is no guarantee that they would not succumb this year. The first step in treatment is to put the sick birds in a dry, sunny place. It may be this will be sufficient to effect a cure. If half the flock are affected it will be difficult for you to follow out the treatment recommended in "Poultry Diseases and Their Treatment":

Place the patient in a warm, dry, well ventilated but not drafty room. Feed bread or middlings moistened with milk and add to this food two grains of black antimony twice a day. A demulcent drink may be made by steeping a little flaxseed in water. Flaxseed tea, you know, is one of the best remedies for a bronchial cold for anybody. Dr. Salmon recommends ten drops spirits of turpentine in a teaspoon of castor oil given in two doses five or six hours apart. You could hardly treat a whole flock in this way, but you might treat a few of the worst cases. The others will probably recover without treatment as soon as they are in a thoroughly dry sunny place. Quinine is sometimes given for bronchitis, one grain for a full grown hen, but its value is doubtful. Olive oil is always good.

Raising Ducks

I am contemplating raising a few ducks on my ranch and would appreciate it very much if you would answer the following questions for me: Would duck raising be profitable with a large acreage in alfalfa available for pasture? Is there sufficient market for green ducks in Los Angeles? Are Mammoth Pekins a good variety to raise? If so, kindly give me the addresses of some breeders of these ducks, either in this locality or around Los Angeles and Pasadena if possible. Any information about duck raising would be greatly appreciated.—Subscriber, Hemet.

I am told that there is a very good demand for green ducks in their season in Los Angeles. Last year they sold for around 30 cents a pound, live weight, and a duck man who keeps hundreds of birds told me last week that he could sell every duck he had right at the ranch for 27 cents. Your pasture would come in handy for supplying green feed, but ducks that are raised for the "green" market, which means that they must be pushed as rapidly as possible and marketed at ten weeks of age, are kept in close confinement. The Pekin is the only duck raised for this purpose because it is the only one that can be made to reach five pounds in ten weeks. These ducks, whether adult or infant, are fed altogether on moist mash. For breeders the mash may contain hard grain along with the bran and cornmeal, but baby ducks, from the start till they go to market as green ducks, receive only a soft mash of bran and cornmeal with sand and cut green feed added till they are old enough to eat their green without cutting.

Housing

Please give me information regarding housing plans for chickens. I would like to get housing plans and system of caring for chickens on the small space plan. I think an eight by eight space holds 20 or 24 chickens and they are kept right in that space with no run. If you can give me definite information I will be very thankful.—Subscriber, Modesto.

There are three systems of no-yard housing as practiced in California. In the Charles Weeks house, to which you refer, 20 hens or 25 pullets are kept in a space eight feet square. The house may be any length but it is only eight feet wide and divided into square sections or units which are entirely separated. The front is of wire and the overhanging eaves keep out sun and rain. In the Corning house, which is extensively used in some localities near the coast, 800 or 1,000 hens are kept in one flock, the house being 16 feet wide and 100 feet long, with no partitions. A modification of this plan is found around Los Angeles, by which flocks of from 80 to 150 hens are kept in a unit of sufficient area to allow from three and one-half to four square feet per hen. If you are especially interested in the Charles Weeks house it might be well for you to write the originator himself, Charles Weeks, Palo Alto, for exact measurements.

FARM BUREAU NOTES

At a recent meeting of the regional directors of the California farm bureau it was decided to wage a state-wide membership campaign from December 22 to January 7.

Future farm bureau meetings will be held in Placer County at Roseville, December 22, Mt. Vernon 27; in Shasta County at Whitmore and Millville, 23; Palo Cedro, 24; Fall River, 27; Hat Creek, 28. In San Joaquin County one will be held at Livo Oak December 22. In Napa County four will be held as follows: Soda Canyon, 20; Chiles Valley, 23; Pope Valley, 26; Mt. George, 27.

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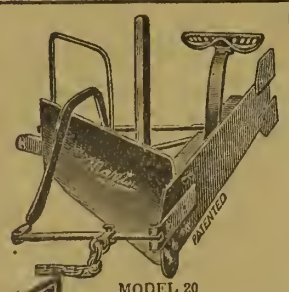

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Los Angeles Markets

Los Angeles, December 23, 1919.

BUTTER

Butter, creamery extras, Produce Exchange price 68 cents.

Dairy Exchange prices last week on extras:

Dec.	17	18	19	20	22
'19	67	67	67	68	68

CHEESE

Brokers' prices:

California, fresh, lb., 31; price to retail merchants, 31@33.

EGGS

Fresh extras, Produce Exchange closing price, 65 dozen; case count Produce Exchange closing price 61 dozen; pullets, Produce Exchange closing price 58 dozen. pewee pullets, 53.

Dairy Exchange prices last week on extras:

Dec.	17	18	19	20	22
'19	67	65	65	65	65

POULTRY

Prices to producers: Hens, lt. 31; heavy, 33@34; colored over 4 lbs., 34; broilers, 32 @37; fryers, 35; roasters, 32; old roosters, 19; ducks, old, 23; ducklings, 30; ducklings, Pekin, 3½ up, 33; geese, 25; turkeys, live, young tom, 37; dr., 43; old, live, 35; dr., 41; hen turkeys, live, 35; dr., 41; squabs, 45@47.

Belgian hares, 3 to 3½ lbs. live, 17.

LIVE STOCK

Los Angeles, Dec. 22.—Weighed and delivered off cars without food or water: Hogs (hard-grain fed), 125 to 150 lbs., 14.00; 150 to 175 lbs., 14.50.

Cattle (on foot gross weight): Steers, good, 10.50@11.00; medium, 10.00@10.50 heifers, good, 8.50@9.00; fair, 8.00@8.50; bulls and stags, 6.00@6.50; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.00.

Sheep—Ewes, 8.00@8.50; lambs, 14.00@ 14.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock December 22, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Eighteen cars California, 1 Oregon, 2 Washington, 2 Idaho arrived. New stock: Stockton, Burbanks, fancy, 5.00@5.25 per cwt. Salinas, Burbanks, sacked, per cwt., fancy, 5.00; Russets, 4:90@5.00; bakers, 5.50@6.00. Local lug boxes, 1.65 @1.75; local White Rose, 4.50@4.75.

Sweet potatoes: Market steady. Lugs, 90@1.15; cwt., 3.00@3.25.

Carlots: Demand and movement moderate, market strong, little change in prices. Per cwt., 2.60@2.75, mostly 2.75; few in mixed cars high as 3.00.

Onions: Demand and movement moderate, market strong. Home grown and Stockton: White Globes, cwt., 5.00@ 5.50; Yellows and Browns, 5.50@6.00. Lug boxes, White Globes and Yellows, 1.60@ 1.75.

VEGETABLES

These are the actual prices obtained December 22, by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans, green, lb., best, 15@17; other 8@9.

Beets, doz., 45@60; lb., 4@5; sk., 2.50 @2.75.

Cabbage: Market weaker. Per lb., 2@ 3½; per cwt., best, 3.00@3.50; others, 2.00 @2.25; sacks, 2.50@3.25.

Carlots: Demand and movement moderate, market weak, supplies limited, few sales. Winningstadt and Cannonball, mostly 50.00@55.00 per ton.

Carrots, dozen, 35@45; lb., 3; sk., 1.50 @1.85.

Cauliflower: Local stock, per dozen, best, 1.25; others 75@80; field crates, 2.25 @2.50; best, 2.65@2.75.

Carlots: Demand and movement slow, market weak, few sales. Crates Snowball and Pearl, mostly Pearl, straight cars, 1.10@1.15, mostly 1.15; mixed cars, mostly 1.25; very few high as 1.50.

Celery: Market steady. Local stock, per dozen bunches 1.00@1.35. Crates, wide range prices, 5.00@6.00; fancy shipping stock, 6.00@7.00, mostly 6.00@6.50. Celery Root, per dozen 1.25.

Carlots: Demand and movement moderate, market dull, little change in prices. Per dozen, straight cars, No. 1's 80; No. 2's, 70@75; No. 3's, 60@65; mixed cars 5 higher.

Chicory, dozen, 45@50.

Eggplant, scarce, lb., 15@17, poorer 10.

Peas, local, lb., 16@18; poorer, 15@18.

Lettuce: Market weaker, prices lower. Per dozen, 35@40; crates, 85@1.00; best shipping stock, 1.60@1.65.

Carlots: Demand slow, movement moderate, market dull. Wide range in quality and condition, generally fair. California: Crates Los Angeles market (Iceberg), straight cars, mostly 1.75, mixed cars 1.85@2.00.

Peppers: Supplies very light, lug boxes, wide range. Bells, 15@16 per lb.; Chilis, best 12@15.

Pumpkins, 1½@2 lb.

Parsnips: Lugs, 85@1.00; sacks, 2.25@ 2.75; others, 1.65@2.00; per dozen, 50. Per lug, 1.00.

Romaine, doz., 40; cr., 1.50@2.00.

Rhubarb: Local, box, best, 1.25@1.50; others, 90@1.00.

Squash: Hubbard, cwt., 2.75@3.00; lb., 2@3.

Spinach, doz., 35@40.

Tomatoes: Demand and movement moderate, supplies very light, market stronger. Lug boxes, ripes, best, 1.50@ 2.00; poorer, overripes, 50@1.00. Shipping stock, 2.25@2.50.

Turnips, doz., 40@45; others, 30@35.

FRUITS

These are the actual prices obtained December 22 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: California: 4-tier, Bellefleur, 1.85@2.00, mostly 1.90@2.00; 3½-4½ tiers, 1.50@1.75; loose, 4@4½ lb.; Glen Seedlings, 2.25@2.75; White Pearmains and Yellow Newtown Pippins, 2.00@2.50 box. Delicious, loose, 5@7 per lb.; Newtown Pippins, 5@6; Pearmains, 4@5; Winesaps, 6@6½. Northern: Jonathans, extra fancy, 3.40@3.50, fancy, 3.00@3.25; choice, 2.50 @2.60; loose, 7@7½ per lb. Spitzenbergs, extra fancy, 3.25@3.40, fancy, 3.00@3.25; choice, 2.75@3.00; 6½@7½ per lb. Delicious, boxes, 3.50@4.00; Ben Davis, per lb., 5; Ganos, 6@7; Pippins, 6; Winter Bananas, extra fancy, box 4.25, fancy 3.50. Rhode Island Greenings, 2.50 box.

Bananas, 8@8½.

Coconut, doz., 2.75.

Cranberries: Barrels, 17.00; lb., 17@ 18; Oregon, boxes, 4.50@5.00.

Grapes: Supplies scarce. Demand and movement good, market stronger. Local and Northern, from storage, per pound: Tokays, 18@20; Malagas, 16@18; Black Cornichons, 16@18; Red Emperors, wide range, 20@22; cr., 3.25@3.50.

Pears: Northern Bartletts, No. 1, 11; No. 2's, 9@10 per lh.; poorer, 5@7; lug boxes, 2.00@2.50; best packed boxes, 3.25 @3.50.

Persimmons, lb., 8@15; mostly 12@14.

Pineapples, lh., 19@20.

Pomegranates, lh., 6½@9; half boxes, 2.50.

Lemons: Valley stock, fancy, 3.50@3.75; loose, 3.50; juice, 2.50. Local: Packed, 3.00@3.50; loose, 2.00@3.50; lb., 3.

Oranges: Navels, 4.00@4.75 box; best high as 5.00. Local stock: packed, 2.50 @3.75; Tangerines, 8@10 lb.

Grapefruit: Arizona: Seedless, per box, 3.50@4.00; Cal. box, 3.50; local box, 2.25@2.50.

HONEY

Demand and movement slow, market dull. Carlots f. o. b. usual terms, per lb.: White Orange Blossom, mostly 19; White Sage, supplies very light, mostly 20; Extra Light Amber Sage, 18½; Light Amber Sage, 18½; Light Amber Alfalfa, 16. Beeswax: Demand and movement moderate. L. c. l. lots, 43 per lb.

WALNUTS

Net prices have been named by California Walnut Growers' Association.

No. 1, 31½.

No. 2, 26.

Diamond Brand B[illegible] 34.

Golden State Bud [illegible]

1918 No. 1 price [illegible] ncy budded, 31½.

California Li[illegible] owers' Association fixed [illegible] r 6: Limas, 14½; baby, 1[illegible]

GRAIN SEEDS

Price bid [illegible] xchange, December 2:

Traders [illegible] uy either milo or barley in [illegible] ty at present high prices, [illegible] of the market very firm for [illegible] One hundred tons of barley [illegible] ober shipment brought $3.80, [illegible] ay barley selling for $3.67

O[illegible] t-proof, 3.25.

C[illegible] 3.30; White, 3.30.

[illegible] 6¼.

K[illegible] n, 3.00.

Fete[illegible] 35.

Hygeria, [illegible] 23¾.

Wheat, 5[illegible] 15@5.90

Alfalfa [illegible]

Alfalfa [illegible]

Milo, 3.0[illegible]

Barley, 3[illegible]

Quotation [illegible] nois-Loomis Company. Foll[illegible]ng are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oats	22.00@25.00
Barley	19.00@24.00
Alfalfa	22.00@27.00
Barley Straw	10.00@12.00

ALFALFA

The alfalfa market yesterday was strong. According to the quotations given out at the office of the Alfalfa Growers of California the following prices ruled f. o. b. Los Angeles: Choice alfalfa, 34.00@37.00; No. 1 alfalfa, 31.00@34.00; standard alfalfa, 29.00@31.00; choice dairy alfalfa, 33.00@36.00; standard dairy, 30.00 @34.00; No. 1 dairy alfalfa, 29.00@32.00.

San Francisco Markets

San Francisco, December 22, 1919.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	69½

CHEESE

Dairy Exchange quotations:

Cal. Flats	31½@33
Ore. Y. A.	37
Ore. Triplcts	34
Jack, full cream	33@34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	74½
Extras, pullets	66½
Undersized	64

POULTRY

Wholesale prices are:

Leghorn, 30@32; small, 33@35; large, 38@39; roosters, young, 30@31; old, 21@ 23; broilers, 35@37; fryers, 33@34; turkeys live, 43@44, dressed, young, 48@53; geese, 30@32; ducks, Indian Runner, 25@ 27; Pekin, 28@32; squabs, 50@60.

Belgian hares, live, 18@20; Jack rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle—Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10¾@11¼; do. 1,200 to 1,400 lbs., 10¼@10¾; do, second quality, 9@9½; do, thin, 7@8.

Cows and heifers—No. 1, 8½@9¼; second quality, 7½@8; common to thin, 4 @6.

Calves—Light weight, 12½@13; medium, 11@12; heavy, 8@10.

Lambs—Yearling, 10@11; milk, 12@13.

Sheep—Wethers, 9@10; ewes, 6@6½.

Hogs: Weighing 100 to 125 lbs., 14½; 225 to 300 lbs., 14; 300 to 400 lbs., 13.

Moran & Co. quote:

Cattle: Good steers, 1,000 to 1,200 lbs., 10½@11½; good heifers, 1,000 lbs. and over, 8½@9¼; good cows, 1,000 lbs. and over, 8@9; canner cows, 5@6; good bulls. 5½@6½. Calves, light, 12@13.

Hogs: Top packer, hard and well-finished, 150 to 225 lbs., 14½; 225 to 300 lbs., 14; over 300 lbs., 13½.

Usual dock and price discounts for other weights and kinds.

POTATOES

Wholesale selling price:

Potatoes: Per 100 lbs.: Rivers, fancy, 4.25@4.50; choice, 4.25@4.40; Oregon Gems, 4.25@4.50; Salinas, 1.50@5.00. Sweet, 4@4½ lb.

ONIONS

Wholesale selling price:

Onions: Brown, fancy, 5.00; choice, 4.25 @4.50; Yellow, 4.00@4.50; Whites, 4.50@ 4.75; Garlic, lb., 18@20.

VEGETABLES

Wholesale selling price:

Beans: String, 15@20; Lima, 12½@15

Brussels Sprouts, lb., 8@9.

Carrots, per sack, 1.00@1.25.

Cauliflower, doz., 1.25@1.45.

Cabbage, doz., 40@50.

Celery, doz., 45@50; cr., 5.00@6.00.

Cucumbers: Per box, 1.25@1.50; Hothouse, 2.75@3.75.

Eggplant, lb., 6@8.

Pumpkins, per sack, 75@1.25.

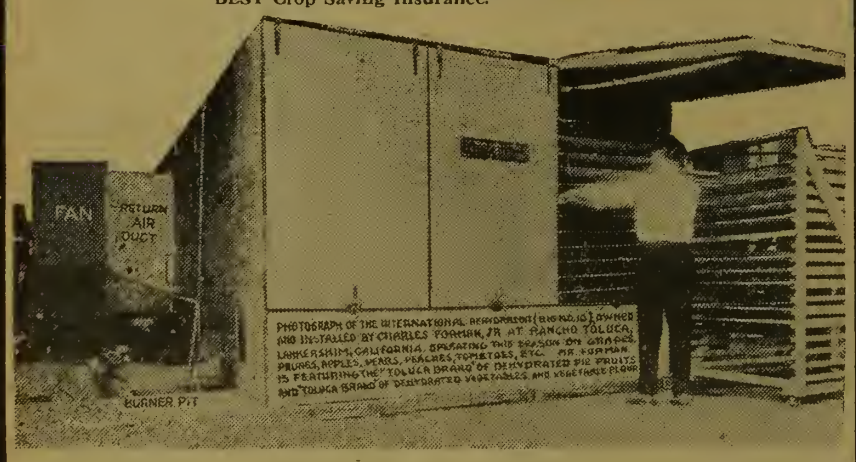
Radish, 7@9 doz. bunches.

Tomatoes: Sacramento River, 25@ 1.00; L. A. cr., 75@1.00.

Squash: Summer, bx., 1.50@2.25; Hubbard, sk., 1.25@1.75.

Spinach, lb., 2@3.

HAVE YOU PLACED YOUR ORDER FOR
The INTERNATIONAL DEHYDRATOR?
It is the FRUIT and VEGETABLE GROWERS BEST Crop Saving Insurance.



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Every FRUIT and VEGETABLE GROWER and CANNERY should use this approved method without delay. "Fifty-four per cent. of vegetables and fruits that come to maturity are lost."—U. S. Government Report.
Don't delay. Place your order now to insure delivery.
The International Dehydrator
LOS ANGELES Chamber of Commerce Building CALIFORNIA

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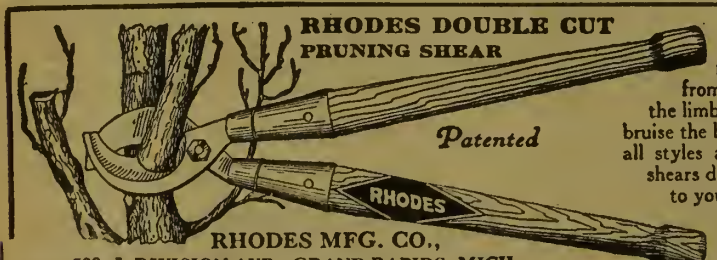

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.
RHODES MFG. CO.,
530 S. DIVISION AVE., GRAND RAPIDS, MICH.

ARNOTT DRAG SAW
Will saw logs up to 6 feet in diameter, 15 to 30 cords of 4-foot wood per hour. Engine fitted with clutch. Not necessary to stop engine when moving saw. Write for full information. Call and see them when in the City.
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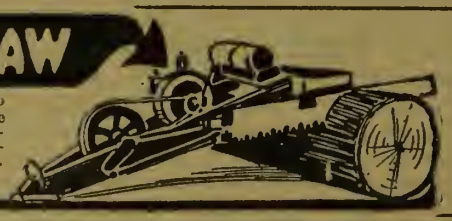

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Renewed screw casing costs from one-half to two-thirds less than standard pipe. Large savings on standard pipe, fittings and valves; special fittings made to order. Pacific Pipe is thoroughly tested and guarantced for 150 pounds working pressure; asphaltum dipped; serves every purpose. Let us save you money. Write
PACIFIC PIPE CO. 237 HOWARD STREET SAN FRANCISCO

"FOR THE LAND'S SAKE" Use
A. C. W. FERTILIZERS
By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.
Agricultural Chemical Works
518 I. N. Van Nuys Building Los Angeles, Cal.
Telephones: Pico 3619; Home 66022

Lettuce, cr. of 3 doz., 3.00; doz., 50.
Peppers, Bell, lb., 8@10; Chili, lb., 7@8.
Peas, lb., 15@22½.

FRESH FRUITS

Wholesale selling price:
Apples: Bellflowers, 1.75@2.25; Newton Pippins, 2.15@2.50; Jonathans, 2.50 @3.00; Spitzenburg, 2.25@2.75 ch.; fy., 3.00@3.50.
Bananas, 7½@8.
Cranberries, 5.00@5.50 per standard box; barrel, 15.00@16.00.
Huckleberries, lb., 18@20.
Pears, box, 2.50@4.00.
Persimmons, box, 1.25@1.75.
Pineapples, doz., 2.75@3.50.
Pomegranates, 1.50@1.75.
Quinces, box, 75@1.50.

CITRUS

Wholesale selling price:
Per box: Lemons, fancy, 5.00@5.50; choice, 4.50@5.00; standard, 2.50@3.00; lemonettes, fancy, 3.25@3.50; others, 2.00 @2.50; grapefruit, fancy, 2.50@3.00; choice, 2.00@3.00; oranges, Valencias, 3.00@4.00; navel, 4.00@5.00; limes, 1.50@ 1.75 per crate; tangerines, 1.50@3.00 per crate.

ALMONDS

California Almond Growers Exchange o[illegible] prices:
Nonpareil @32½, IXL @31½, Ne Plus Ultra @30½, Drake @23½.

HONEY

Jobbing prices: Extracted, Water White and White, 18@20 lb.; Light Amber, 17@18; Amber, 13@15; Comb, 25@ 28 for White and Water White and 23@ 25 Light Amber.

HOPS

1919 contracts per lb. around 75@90.

BEANS, PEAS

Jobbing price per cental:
Beans: Small white, 6.50@6.75; large white, 6.50@6.60; cranberry, 7.50@8.00; red Mexican, 7.00@7.25; pink, 6.35@6.50; California Bayou 9.25@9.75; Blackeye, 6.00@6.50; red kidney, 12.00@13.00; Lima, 13.50@13.75; Garvanza, 9.50@10.50; Kotenashi (in bond), 5.35.
Dried Peas: California, 6.50@7.00 per cental for green, recleaned.

RICE

Prices per 100 lb. bag:
California: Fy., 10.50; ch., 10.25; flour, 6.25.

DRIED FRUITS

Prunes:
Prune prices announcel by the California Prune and Apricot Growers, Inc., were for the base prices, accordlng to sizes, and are: 20-30s, 22c flat; 30-40s, 16c; 40-50s, 14c; 50-60s, 12c; 60-70s, 11½c; 70-80s, 11c; 80-90s, 11c; 90-100s, 11c. One cent a pound premium will be pald on fruit delivered before September 20. On small-sized fruit 8½ cents a pound will be paid for 100-120s and 7½ cents for 120s and smaller.
Peaches:
Peach prices announced by the California Peach Growers, Inc., for 1919 crop dried peaches for the domestic and foreign trade; September, October, November shipment, seller's option; guaranteed against our own decline until January 1, 1920, are as follows:
Standard yellows, 14¾c; Muirs, 15c.
Choice yellows, 15½c; Muirs, 15½c.
Fancy yellows, 16½c; Muirs, 17½c.
Extra fancy yellows, 17¾c; Mulrs, 18¾c.
Slabs, yellows, 14½c.
For "practically peeled" add 1½c per pound (any grade).
Prices above are all bulk basis.
For packing in 50 pound or 25 kilo boxes add 1 cent per pound.
25 pound or 12½ kilo boxes, all 1¼c per pound.
10 pound boxes, add 2c per pound.
Blue ribbon peaches packed 2 pound cartons, 12 per case, $10 per case.
Blue ribbon peaches packed 2 pound cartons, 24 per case, $10 per case.
Bakers' special, "practically peeled," 16¾c per pound, bulk basis.
Apples:
Choice (in 50s), 20@20½; extra choice (in 50s), 21@21½; fancy (in 50s), 23@ 23½.
Figs:
White: Cooking (in 50s), 15@16; choice (in 50s), 17@18; exta choice (in 50s), 19 @20; fancy (in 50s), 21@22; extra fancy (in 50s), 23@24; bricks, 12 No. 10s, 1.60@ 1.67½; bricks, 24 No. 8s, 2.55@2.65; bricks, 50 No. 6s, 4.00@4.15; bricks, 70 No. 4s, 4.20 @4.35; layers, No. 10, 2.50@2.80. Calimyrna: Cooking (in 50s), 19; choice (in 50s), 23; extra choice (in 50s), 24; fancy (in 50s), 26; extra fancy (in 50s), 27½; bricks, 10 1-lb., 2.75; layers, No. 10, 2.95@ 3.20. Black: Standard 14, choice 17@18; extra choice, 18@19; fancy, 19@20.
Pears:
Standard 20, choice 22½; extra choice, 24; fancy, 26@27.
Raisins:
California Associated Raisin Company's prices guaranteed to January 1: Seeded: Sun-Maid, 16s, package, 15; fancy, 16s, package, 15; fancy, 12s, package, 11¾; choice, 16s, package, 14½; choice, 12s, package, 11⅝; bulk, fancy in 25s, 14¼; bulk, bakers, in 25s, 13½; bulk, Malagas and Feherzagos, in 25s, 13. Loose Muscatels: 4-crown, in 25s, 14¼; 3-crown, in 25s, 13¾; 2-crown, in 25s, 13¼; 1-crown recleaned, in 25s, 14. Seedless: Thompsons, 16s, 15½; Thompsons, 12s, 12⅛; Thompsons, bulk, recleaned, in 25s, 14½; Thompsons, bulk, bakers, in 25s, 15½. Bleached Thompsons: Choice, in 25s, sulfur, 18; fancy, in 25s, sulfur, 18½; extra fancy, in 25s, sulfur, 21; soda dipped, in 25s, 17¾; oil dipped, in 25s, 17¾. Sultanas, 16s, 15¼; Sultanas, bulk, in 25s, 14¼. Layers: 6-crown, flat pack, 20s, per box, 4.05; 6-crown, flat, 10s, per box, 2.20; 6-crown, flat pack, 5s, per box, 1.20; 4-crown, flat pack, 20s, per box, 3.20; 4-crown, flat pack, 10s, per box, 1.75; 4-crown, flat pack, 5s, per box, 1.00; 3-crown, tray pack, 20s, per box, 3.10; 3-crown, flat pack, 20s, per box, 2.95; 3-crown, flat pack, 10s, per box, 1.60; 3-crown, flat pack, 5s, per box, 95; clusters, 20-1s, cartons, 3.45; clusters, 12-2s, cartons, 3.80; clusters, 4-5s, cartons, 4.50; vineyard run, 100s, 13.00.

GRAIN

Wheat: The prices are based upon federal grades and standards at the terminals in San Francisco Bay and Los Angeles, and are as follows, per bushel of 60 pounds:

Hard White—	Per Bushel	Per Cental
No. 1	$2.20	$3.66 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.13	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51½
Club and Sonora—		
No. 1	$2.16	$3.00
No. 2	2.13	3.55
No. 3	2.09	3.48½

The above are minimum prices.
For sacked grain add 4½ cents per bushel of 60 pounds to above prices. Deductions of three-fourths of a pound made for weight of standard grain bags. Wheat grading under No. 3 mixed or smutty wheat will be purchased according to merit.
Oats: Red feed, 3.00@3.05; black, 3.00 @3.15.
Corn: California yellow, 3.10@3.20 per cental; Egyptian, 3.65@3.75; milo maize,
Rye: 3.35@3.45.
Barley: Spot feed, per cental, 3.50@ 3.60; brewing, 3.65@3.75.

HAY

Under date of December 20, Scott-Magner & Miller says:
Receipts past week 638 tons. No doubt the great decrease over last week is due to the heavy demand of interior districts for stock feed. Hay is being held in the country districts at figures in excess of the present market. There has been considerable inquiry from the southern part of the state during the week for hay. It is also to be noticed that considerable alfalfa hay has been purchased in Nevada and is being shipped to this state.
Plowing is in full blast on the lands made ready by the recent rains, and although some sections have not received as much rain as they would like, yet there has been sufficient in most places to commence their winter plowing. The market continues firm on all grades and is reported about $1.00 per ton higher than heretofore.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions:

Fancy Wheat Hay (light 5 wire bales	25.00@27.00
No. 1. Wheat or Wheat and Oat Hay	22.00@26.00
No. 2 Wheat or Wheat and Oat Hay	21.00@23.00
Choice Tame Oat Hay	24.00@27.00
Other Tame Oat Hay	21.00@24.00
Wild Oat Hay	20.00@23.00
Barley Hay	20.00@23.00
Alfalfa Hay	22.00@27.00
Stock Hay	17.00@20.00
No. 1 Barley Straw, per bale	.50@ .80

Citrus Markets

Los Angeles, December 23, 1919.
Valencia shipping is practically ended but with the few yet to go and number in transit there are 300 or 400 cars yet to be sold. Practically all houses are closed and will be until the new year.
The lemon market is gone to nothing or even worse. One auction sale is reported as low as 10 cents a box. This in Philadelphia. All Atlantic Coast points are filled with Mediterranean lemons. There are now nearly 50,000 boxes of these foreigns either on dock or due to land within next few weeks.

Shipments

Shipment of oranges from Southern California to date since November 1, 1919: Oranges, 2,946 cars; lemons, 584; total, 3,530. To same date last season: Oranges, 1,004; lemons, 1,042; total, 1,046. Central California: Oranges, 3,245; lemons, 118; total, 3,363. To same date last season: Oranges, 2,531; lemons, 231; total, 2,762. Northern California: Oranges, 343; lemons, 15; total, 358. To same date last season: Oranges, 191.

AT THE AUCTIONS

December 17

New York: 17 or., 1 lem. Val., 2.30@ 6.65; Nav., 2.55@6.40; lem., 70@3.45.

December 18

New York: 19 or., 2 lem. Val., 1.30@ 6.05; Nav., 3.85@6.00; lem., 50@2.45.
St. Louis: 1 or., 1 lem. Nav., 4.85@ 5.05; lem., 1.30@2.40.

December 19

New York: 16 or., 1 lem. Val., 1.85@ 6.40; Nav., 4.50@6.50; lem., 2.25@3.65.
Boston: 4 or. Val., 3.90@5.15.

December 22

New York: 38 or., 1 Ariz. Nav., 2 lem. Val., 1.95@6.90; Nav., 3.30@7.25; Ariz. Nav.,90@5.30; lem., 1.25@4.50.
Philadelphia: 10 or., 3 lem. Val., 2.95 @4.85; Nav., 3.70@5.00; lem., 10@1.05.
St. Louis: 5 or. Val., 4.35@4.95; Nav., 4.35@9.20.
Boston: 27 or., 4 lem. Val., 2.55@4.55; Nav., 1.50@5.65; lem., 35@1.15.

The principal change in prices of the past week has been the drop of lettuce to $1.25 a crate, while cauliflower is down to $1.10 to $1.15 a crate, the sizes being very small, due to cold weather. Sweet potatoes are firm at $2.75-$3.00, with a tendency toward $3.25 in the near future as the supply is short. The strongest upward rise during the past week has been on potatoes, which are $4.50-$5.00 in carload lots, wholesaled at $5.50 to $6.00, and must cost the consumer seven or eight cents a pound. The California crop is one-third short of normal, and Oregon, from which we usually receive many potatoes, suffered a 25 per cent loss from freezing in the field. Receipts in Los Angeles for the past two weeks have been less than the demand.

Citrus Growing In California

A 5-16 of an acre plot of Orange Trees at Corona, fertilized with

NITRATE OF SODA

and acid phosphate at 320 lbs. of each per acre, yielded at the rate of 411 boxes of high quality fruit. A plot alongside, fertilized without Nitrate, gave a rate of yield of only 322 boxes per acre of inferior fruit. This difference of rate of yield of 89 boxes per acre shows an increase in value of produce equivalent to $324.85.

100 lbs. of Nitrate of Soda in this case added a rate of profit to the grower's income of $101.52 per acre.

Chilean Nitrate Committee
231 Douglas Building
Los Angeles California

The Famous Hardie Junior is a Real Power Sprayer

It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight, and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Junior. Equipped with 1½ horsepower engine, Magneto ignition, 150-gallon tank with mechanical agitator, capacity of four gallons per minute with a steady working pressure of 200 pounds, and two 25-foot of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All for $340.00. ***Delivered anywhere in this state***

If truck is not needed, deduct $55.00.
These prices are subject to change without notice. The wise buyer will place his order now.
This low price is made possible by big production.
If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.
The HARDIE ORCHARD GUN is $12.00, none better. Every one is guaranteed to give satisfaction to the user, or his money refunded.
The Hardie Spray Hose is the safest hose to buy.

The Hardie Manufacturing Co.
224 N. Los Angeles St., Los Angeles

Mr. Farmer!

Why not put your Automobile to Work?

HESSE TRAILERS

designed and Constructed to Answer Your Requirements
32 Models

Erickson-McPherson Co.
CALIFORNIA DISTRIBUTORS
501 Pacific Bldg. Oakland, Cal.

GETTING breakfast isn't the tedious job it used to be, thanks to modern conveniences—and Ghirardelli's Ground Chocolate. Besides, the "Ghirardelli breakfast" is not only much easier to prepare, but it's also more wholesome, more nutritious, more sustaining! Ghirardelli's is food and drink both!

Never sold in bulk—but in cans only.
In ½ lb., 1 lb. and 3 lb. sealed cans—
at the store where you do your trading.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.

Since 1852 San Francisco

(P6)

GHIRARDELLI'S Ground Chocolate

DEPEND ON IT!

Alcoholic tonics, even in moderate doses, eventually cause the organs stimulated to lose independent vigor. Of a dual nature, both food and tonic

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is eminently adapted to nourish and build up the weakened body.

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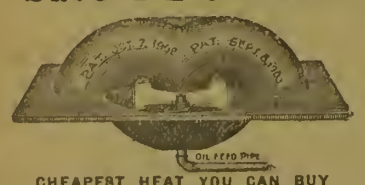

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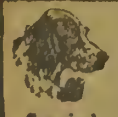

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Household Department

THE OLD YEAR AND THE NEW

Somebody went away last night, when all
was dim and dark,
The hall clock slow, the lamplight low,
the fire but a spark,
The chamber chill, the nursery still, a
ghostly moon agleam,
In every bed a sleepyhead, in every heart
a dream.
Somebody tiptoed softly out, his bundle
on his back,
And good and glad and queer and sad the
contents of that pack:

The things you did, the things I did, the
things we hoped and thought,
The things we oughtn't to have said, the
other things we ought;
The smiles we smiled, the sighs we sigh-
ed, the little schemes we schemed,
The laughs we laughed, the tears we
cried, the little dreams we dreamed,
And all the rest a gaunt, gray guest had
gathered in his sack—
The Old Year, the bent year, and he
never will come back.

Somebody else crept in last night, when
the door was left ajar,
A tiny stranger, slim and slight, who had
not traveled far;
A curious empty bag he bore across one
dimpled shoulder,
And in it many a treasure'll go before
he's one day older:
The things you'll think, the things I'll
think, the doings that we'll do,
The words you're going to say to me, the
words I'll say to you;

The time we'll use, the time abuse, the
plans we'll make and break;
He'll peep around till each is found, and
every one he'll take;
The New Year, the Young Year. We'll
greet him, but remember,
He may not stay with us alway, and the
last of next December,
When he has gathered what we gave,
then, in the other's track,
Old, too, and gray, he'll slip away,
and he never can come back.
—Nancy Byrd Turner in Youth's Companion.

THE BROKEN PROMISE

By John Clair Minot, in Youth's Companion

THIS is the story of how Billy Brewster lost something that he had set his heart on, and of how he came to make a certain new year resolution that he has kept ever since.

Billy lives with his mother in a little house on the edge of the village of Bayville. As he was walking home from school one day, Mr. Briggs, who owns the cotton mill, came along in his automobile.

"Jump in!" called Mr. Briggs.

So Billy eagerly clambered into the big car, and had his first automobile ride. When Mr. Briggs left Billy near his home, he said, "We will have another ride some day."

Several times after that he gave Billy a ride when he saw him in the village street or overtook him on the way home from school. One day Mr. Briggs said, "I am going over to Denton some day before long. Would you like to take the ride and see the sights?"

Of course Billy would like to go, and he was so happy that he could hardly stammer his thanks. Denton was a large city, 60 miles away, and Billy had never been there. The trip would mean an all-day ride in the automobile, instead of a ride of a few minutes, and he would surely see many wonderful things in the city. He ran breathlessly into the house to tell his mother, and he whistled louder than usual as he did his chores that night.

It was early in the winter, and a few days later the school closed for the holiday vacation. One morning Billy's mother said, "Will you bring the rest of that wood into the shed today, Billy? There is likely to be snow before long."

"Yes," answered Billy, promptly. "I'll do it today."

He began his task with the best intention, but in a few minutes Tom Halsey called to him from the street:

"Come on, Billy! We are all going skating on the mill pond. The ice is fine!"

Billy looked sadly at the woodpile. It could wait, he thought; he would surely do the work tomorrow. He remembered his promise to his mother that he would get in the wood that day, but he thought that he could explain it all when he got back from the mill pond. That is the way he argued to himself as he ran to join Tom and the other boys.

Several hours later he came back from skating, and ran in to tell his mother how it had happened.

She listened in silence, a[nd] hen he was done she said, "I see t was, but I am very sorry t[h]roke your promise, Billy."

"But it was such mise," pleaded Billy. "A I could get in the wood

"A promise i[s] ," said his mother, gentl[y] ttle promise is to be kept , a big one."

"But it d[oesn't]," urged Billy.

"It alw[ays] arm to break a promise." his mother. "In this ca[se] e lost great deal."

"W[hat] mean?" cried Billy.

"A f[ew] ments ago Mr. Briggs called fo[r] on his way to Denton. He is going South for the winter, and s[o] have lost the long ride and the e city."

B[illy] of thinkin[g] he was g[lad] y and whe[n] for making le made one res[olution] as kept ever since. It was about little promises.

NEW YEAR RECIPES FROM CULTIVATOR READERS

Caramel Pie

Two cups brown sugar, two cups milk, butter size of an egg. Put on stove and bring to a boil, then add well mixed:

Ten tablespoons water, eight tablespoons flour, yolks of two eggs well beaten. Cook until thick being careful not to burn. Cool and put in baked crust. Ice with white of two eggs beaten to a froth, one tablespoon sugar. Flavor icing and pie filling with vanilla. Spread icing over pie and set in oven to brown. Be careful not to burn.—Mrs. A. Le Muir, San Bernardino.

Mince Meat

Dear Sirs: I am sending a recipe for mince meat, concocted by me during "war times" when we were conserving sugar, meat, etc., and during the present scarcity of sugar will no doubt be acceptable to many other housekeepers. The small amount of meat used in it keeps it from being a rich dessert such as we always think of mince pie being:

Two cups meat, five cups apples, two cups raisins, one and one-half cups currants, one cup honey or syrup, three cups brown sugar, two cups stock, one pint fruit juice, one ounce citron, one tablespoon salt, one tablespoon cinnamon, one teaspoon cloves, one teaspoon nutmeg, one teaspoon mace, juice three lemons, rind two lemons, pinch of cayenne pepper.

Grape or blackberry juice or liquor from pickled fruits is very good to use for the fruit juice called for. A cheap cut of meat or an old rooster may be used for the meat. Chop meat, apples and raisins fine separately. Mix all ingredients. Let stand half a day. Heat thoroughly. Seal in glass jars. Store in cool place.

Devil Food Cake

Part 1.—Mix the following: One cup brown sugar, one-half cup butter, one cup sweet milk, three egg yolks, one teaspoon soda, two cups flour.

Part 2.—One cup brown sugar, one cup grated chocolate, one-half cup sweet milk, flavor with vanilla.

Cook Part 2 in a double boiler and let it come to a boil. Then cool and mix with Part 1. Bake in layers. Spread with any desired frosting.—Mrs. Joe S. Menezer, Paicines.

Apple Sauce Cake

Two cups sweetened apple sauce two cups sugar, four cups sifted flour, one-half cup ground chocolate, two cups raisins, three tablespoons lard, two teaspoons soda dissolved in apple sauce, two teaspoons baking powder, two teaspoons cinnamon and nutmeg.

Raisins may be omitted or nuts added. This cake is good the day it's baked or may be kept almost indefinitely if raisins are used. It makes an excellent foundation for fruit cake. —Mrs. L. D. W.

Never Fail Chocolate Cake

Two cups sugar, one cup milk, three fourths cup butter, three cups flour, four eggs, two teaspoons baking powder, one teaspoon vanilla.

One-half cake Baker's chocolate, three-fourths cup sugar, one-half cup

milk, yolk one egg. Cook together before adding to the above mentioned mixture.

Frosting for Chocolate Cake: One cup each of white and brown sugar, one-half cup sweet milk, butter size of an egg, one teaspoon vanilla. Boil eight minutes. Beat until light and creamy.—Mrs. H. W. Shephard, National City.

ARIZONA GIRL CANS 240 VARIETIES

By Leland S. Parke

It is not an uncommon thing for the girls in the canning clubs to can 240 jars of products. It is quite a different story when every jar of that number represents a different product.

Such was the achievement of Wyona Taylor, aged 15, of Pima, Arizona, and a member of the Pima United Clubs under the leadership of Mrs. Phil C. Merrill. This is the highest record that has ever been made in the state, although a record of 211 varieties was made the year before by Opal Webb of the same club. It is probably safe to say, too, that this record would rank high among records made in other parts of the United States. The following were among the many fine prizes that Wyona won: (1) Handsome silver cup given by the state fair association for the best variety exhibit at the fair; (2) Hall canning outfit, given by the Hall Canning Company of Grand Rapids, Michigan, for the best variety record in the state; (3) free trip to the University of Arizona by the Arizona Bankers Association for her unusual achievement, this trip to be taken in connection with the Boys and Girls Club Congress to be held at Tucson January 15-17; (4) membership in the Arizona All Star Club,, an affiliated organization of the national club (this award made by the committee on All Star membership); (5) a $5 War Saving stamp, given by the Pima farm bureau, for being the most helpful, sportsmanlike member in the club; (6) and last but not least, she has been recommended for the Perfection All Star Medal, which represents the award of highest honor in boys and girls club work.

Wyona has been an untiring worker throughout the season and if the Pima United Club does not win the state championship it will not be her fault. Her work has been carried on under the auspices of the agricultural extension service of the university and the United States department of agriculture cooperating. It is through the encouraging of such achievements and other achievements on the farm and in the home that the agricultural extension service hopes to help the agricultural interests of the state.

GOING OVER THE SHABBY SPOTS

House cleaning is too frequently limited to scrubbing the woodwork, beating the carpets and brushing the furniture. Need of renewals is generally overlooked—sometimes because of the expense involved, sometimes because the housewife does not realize how easily she could do the work herself, and sometimes because she doesn't think of it.

In every house are to be found many things made of metal which become tarnished and shabby. Such things as andirons, water faucets, etc., can be gone over with a little metal lacquer and made to look like new.

Picture frames, chandeliers and other articles which were originally gilded or gold enameled can be easily and quickly renewed with a little gold enamel. It is better to get that sold in combination cans ready for mixing with a little brush with which to apply it. Gold enamel will also vastly improve the appearance of tarnished radiators.

Even the shabbiness of the leather chairs may be removed with leather renewer with which the worn spots may be touched up.

All of these re-vampers and renewers are to be found in drug, paint and general stores. They are obtainable in small packages, cost very little and are easily applied. One cannot realize how greatly their use improves and brightens the appearance of the home at house cleaning time.

HELPFUL IN THE HOME

By A. M. H.

There is nothing more helpful in the home than a bottle of good olive oil. It will help to keep all the family in good health, if used daily, as it is recommended by many specialists both as a food and as a tonic. For delicate children mothers will find a free use of the nutritious olive oil invaluable. Not only should it be taken as a tonic, but if there is any tendency to weakness of lungs it should frequently be rubbed into the chest. Olive oil taken internally arouses a torpid liver. In time of croup it can be given frequently and will not disturb the digestion, as do many medicines. Sufferers from nervous disorders should certainly try the olive oil cure. It is often given in place of cod liver oil and it is as effective in building up the system and far less disagreeable.

Excellent results are obtained by applying a fattening cream made from equal parts of lanolin, coco butter and olive oil. A few drops of a preferred perfume may be added.

If troubled with eczema use a plentiful supply of olive oil to which has been added dry sulphur. If used regularly it will cure some of the worst cases in a short time.

One of the safest and best household antiseptics is a boric solution, and this can easily be prepared at home by dissolving one-half ounce of granulated boric acid in one pint of boiled water. A bottle of this solution well corked is useful in bathing sore eyes and is especially good to use after taking long automobile rides in the cold and wind, and toothache often yields to a bit of cotton saturated with it. A little olive oil and a little of this solution added to the water used for bowel injections both for children and grown people adds greatly to the beneficial effect.

Keep plenty of dishes filled with water about the yard if you want bird neighbors.

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FUTURE OF NEW FRUITS

Continued from Page 859.

necessarily be restricted until more stock is available.

Another fruit commanding more or less attention in the ever increasing list of California horticultural productions is the date. With the introduction of the better varieties the growing of this fruit has reached quite extensive proportions in the Coachella Valley and gives promise of being very remunerative. Every one is familiar with the imported dates carried in stock by all fruit stores, but the product of these new varieties now being grown here is far superior and commands much higher prices.

The jujube, or Chinese date as it is sometimes called, is a recent introduction that is commanding some attention and gives promise of being wortby of quite extensive planting. Unlike the date palm, the jujube is a tree of rather pleasing appearance, entirely hardy and very productive. The government plant introduction garden at Chico has a number of trees fruiting and some of the larger varieties seem quite promising. As a fresh fruit to eat out of hand it can not be said to be very attractive but when processed it reminds one very much of the date excepting that its acid content gives it a more attractive flavor. When better known it will no doubt become an important horticultural production. The trees are said to thrive on all varieties of soil and do not require a great deal of moisture. The trees are carried in stock by the leading nurseries but at present only in limited quantities.

We recently made reference to the excellent report made by Manager Schureman of the Anaheim Citrus Fruit Association. We said that 184,511 loose boxes averaged net to the grower $241. This is some sizable average and we hasten to correct, as the decimal was omitted between the two and the four. $2.41 per loose box is the average secured for the Anaheim orchardist.

FROSTED GRAPES

Director Hecke reports regarding an experiment tried in Tulare County to test out the keeping qualities of Emperor grapes after the severe freeze of the last week in October:

Considerable argument was used at that time as to the degree of frost injury necessary to prohibit the packing of this fruit. As it required several days for slight injury to develop, Commissioner Collins feared to draw the line too tightly at first, but placed in cold storage a sample crate taken from a lot which was being packed for Eastern shipment. At the same time he had packed for experimental purposes a crate of more severely injured fruit. These crates were placed in cold storage October 30 and opened 30 days later. Both were in very bad condition, the more severely injured fruit not being edible at all, while 90 per cent of the better grade had stems covered with mold and there was much soft fruit.

Mr. Collins' office is also conducting some experiments with grapes packed in drums under various conditions, but these will not be opened until the holiday season as they are supposed to keep until that time in many cases when shipped.

CATTLEMEN ELECT OFFICERS

At the meeting of the California Cattlemen's Association held at San Francisco, Saturday, December 13, Fred H. Bixby of Long Beach was elected to succeed L. A. Nares as president. D. J. Stollery was re-elected secretary and the following vice presidents were elected to represent the various zones: M. D. Lack, Redding; T. H. Ramsay, Red Bluff; John Bryan, Hollister; A. S. Goode, Bakersfield, and Harry Jones, Brawley.

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"Are you sure your voice will fill this large hall?" asked the friend.

"I only hope," sadly replied the amateur singer, "that it won't empty it."—Jacksonville Times-Union.

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